## Product Index DATEXEL



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#### **GENERAL DESCRIPTION**

The universal isolated converter DAT 4530 is able to measure and linearise voltage, current and resistance signals, potentiometers and the standard thermocouples and Sensors with, if required, the cold junction compensation, the wires compensation. For mV, V and mA input it is possible to set an option for the fast sampling (option HS) or to extract the square root of the measured signal (option SQRT). In function of programming, the measured values are converted in a current or voltage signal on the two outputs.

Moreover an output contact is available as trip alarm.

The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Universal configurable input for:
- mV, TC, RTD, Res, Potentiometer, V and mA
- Two outputs configurable in current or voltage
- Trip alarm
- Configurable by dip-switch or PC
- High accuracy
- On-field reconfigurable
- Galvanic isolation among all the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











POWER SUPPLY ISOLATION		TEMPERATURE AND HUMIDITY					
Power supply voltage	20 30 Vdc			Operative	temperature	-20°C +60°C	
		Among all the		Storage temperature			-40°C +85°C
		ways	50 Hz, 1 min	3	<u>'</u>		
Rever. polarity protection	60 Vdc max)			Humidity (not condense		ed)	0 90 %
CURRENT CONSUMPTION		EMC (for industrial environments)					
CONNECTION CONSONII TION	l	EIVIC (for ind	ustrial environments)	ALARM T	RIP	HOUSING	
			2004 / 108 / EC	ALARM T Contact	RIP SPST	<b>HOUSING</b> Material	Self-extinguishing plastic
Current output	90 mA max.		•	Contact	SPST	Material	3 31
		DIRECTIVE : 2	•	Contact	 	Material Dimensions	3 31
		DIRECTIVE : 2	2004 / 108 / EC	Contact	SPST	Material	3 31

INPUT			
Input type	Min	Max	Span min
TC (CJC int./ext.)			
J	-200°C	1200°C	100°C
К	-200°C	1300°C	100°C
S	0°C	1750°C	400°C
R	0°C	1750°C	400°C
В	0°C	1850°C	400°C
E	-200°C	1000°C	100°C
Т	-200°C	400°C	100°C
N	-200°C	1300°C	100°C
Voltage			
mV	-100 mV	+90 mV	5 mV
mV	-100 mV	+200 mV	10 mV
mV	-100 mV	+800 mV	20 mV
RTD (2, 3, 4 wires)			
Pt100	-200°C	850°C	50°C
Pt1000	-85°C	185°C	30°C
Ni100	-60°C	180°C	50°C
Ni1000	-60°C	150°C	30°C
RES. (2, 3, 4 wires)	0 Ω	500 Ω	50 Ω
RES. (2, 5, 4 WIFES)	0 Ω	2000 Ω	50 Ω
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Voltage	-10 V	10 V	1 V
Current	0 mA	20 mA	1 mA
Calibration (1)			
mV, TC	the higher of ±	0.1 % and ±12 u\	1
RTD		0.1 % and ±0.2°C	
Res.	the higher of ±	0.1 % and ±0.15	
Potentiometer	± 0.05 % f.s.		
Volt	the higher of ±	0.1 % and ± 2 m	/
mA	the higher of ±	0.1 % and ± 6 uA	\

(1) referred to the input Span	(difference between max.	and min.)
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± 0.5 % f.s (opt. HS)

Linearity (1)	
TC, RTD	± 0.1 % f.s.
mV, V, mA	± 0.05 % f.s.
Input impedance	
TC, mV	>= 10 MΩ
mA	~22 Ω
Sensor excitation current	
RTD,Res	400 uA
Voltage Aux.	>18 V @ 20 mA
Line resistance influence (1)	
TC, mV	<=0.8 uV/Ohm
RTD 3 wires	$0.05\%/\Omega$ (50 $\Omega$ max balanced)
RTD 4 wires	0.005%/Ω (100 Ω max balanced)
Thermal drift (1)	
Full scale	± 0.01 % / °C
CJC	± 0.01 % / °C
CJC compensation	± 0.5°C

OUTPUT (2 CHANNELS)					
Output type	Min	Max	Span min		
Current	0 mA	20 mA	4 mA		
Voltage	0 V	10 V	1 V		
Output calibration					
Current		± 7 uA			
Voltage		± 5 mV			
Voltage Aux.		>12V @ 20 mA			
Burn-out values					
Max. output value	22 mA or 11 V				
Min. output value		0 mA or -0.6 V			
Output load Resistance -	Rload				
Current output	Current output				
Voltage output	> 10 KΩ				
Short circuit current	30 mA max				
Pagnanga tima (10 : 00%	about 400 ms				
Response time (10÷ 90%	100 ms (opt. HS)				

mV, V, mA

#### ISOLATED CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC

# **DAT 4531**

#### **GENERAL DESCRIPTION**

The isolated converter DAT 4531 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for TC and mV
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**



Thermal drift (1)

TC, mV



Line resistance influence (1)





<=0.8 uV/Ohm



POWER SUPPLY						
Power suppl	y vo	ltage			18 30 Vdc	
Rever. polari	ty p	rotec	tion		60 Vdc max	
CURRENT	CO	NSU	MP	ΓΙ	ON	
Current outp	ut		35 ı	m	A max.	
Voltage outp	out		20 ו	m	A max.	
ISOLATION	V					
Among all th	ne		) Vac	•		
ways		50 F	łz, 1	m	in	
TEMPERAT	TUR	E AI	ND I	Н	UMIDITY	
Operative ter	npe	rature	<u>;</u>		-20°C +60°C	
Storage temp	pera	ture		-40°C +85°C		
Humidity (not	t cor	dens	ed)	0 90 %		
EMC (for in	dus	trial	envi	rc	nments)	
DIRECTIVE	: 2	004	/ 10	8	/ EC	
Immunity	EN	6100	0-6-	2		
Emission	Emission EN 61000-6-4					
HOUSING						
Material	Sel	f-exti	ngui	sł	ning plastic	
Dim. (mm)	W	x L x	H : 9	0	x 112 x 12.5	

Input type	Min	Max	Span min		
TC (CJC int.,	/ext.)				
J	-200°C	1200°C	100°C		
K	-200°C	1300°C	100°C		
S	0°C	1750°C	400°C		
R	0°C	1750°C	400°C		
В	0°C	1850°C	400°C		
E	-200°C	1000°C	100°C		
Т	-200°C	400°C	100°C		
N	-200°C	1300°C	100°C		
Voltage					
mV	-100 mV	+90 mV	5 mV		
mV	-100 mV	+200 mV	10 mV		
mV	-100 mV	+800 mV	20 mV		
Input calibra	ation (1)				
mV, TC	> ± 0.1 % f.s	and ± 12 uV	'		
Linearity (1)					
TC	± 0.2 % f.s.				
mV	± 0.1 % f.s.				
Input imped	lance (1)				
TC, mV	>= 10 MΩ	>= 10 MΩ			

Thermal arms (1)					
Full scale	± 0.01% / °C				
CJC	± 0.01% / °C				
CJC compensation	CJC compensation				
OUTPUT					
Output type	Min	Max	Span min		
Current	0 mA	20 mA	4 mA		
Voltage	0 V	10 V	1 V		
Output calibration					
Current		± 7 uA			
Voltage		± 5 mV			
Burn-out values					
Max. output value		22 mA or 11 V			
Min. output value		0 mA or -0.6 V			
Output load Resista	ance - Rlo	ad			
Current output		< 500 Ω			
Voltage output		> 10 KΩ			
Short circuit current		26 mA ma	26 mA max		

x and min)

#### ISOLATED CONVERTER FOR RTD AND RESISTANCE CONFIGURABLE BY DIP-SWITCH OR PC

# 4531 DAT

about 90 g.

#### **GENERAL DESCRIPTION**

The isolated converter DAT 4531 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable

In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

- Configurable input for RTD and resistance
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways

Response time (10÷90% of f.s.)

- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



INPUT



#### **Application areas**









about 500 ms



P	0	۷	۷	E	R	S	U	P	P	Ľ	Y	

Weight

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output 35 mA max Voltage output 20 mA max

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature -20°C .. +60°C Storage temperature -40°C .. +85°C Humidity (not condensed) 0 .. 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity EN 61000-6-2 EN 61000-6-4 Emission

#### **HOUSING**

Material Self-extinguishing plastic Dim. (mm) W x L x H : 90 x 112 x 12.5

Input type	Min	Max	Span min				
RTD (2, 3 wire	RTD (2, 3 wires)						
Pt100	-200°C	850°C	50°C				
Pt1000	-85°C	185°C	30°C				
Ni100	-60°C	180°C	50°C				
Ni1000	-60°C	150°C	30°C				
RES. (2, 3	0 Ω	500 Ω	50 Ω				
wires)	0 Ω	2000 Ω	50 Ω				
Calibration (1)	)						
RTD	the higher o	f ±0.1 % f.s. a	nd ±0.2°C				
Low Res.	the higher o	f ±0.1 % f.s. a	nd ±0.15 Ω				
High Res.	the higher o	f ±0.2 % f.s. a	nd ± 1Ω				
Linearity (1)							
RTD	± 0.1 % f.s.						
Sensor excita	tion curren	t					
RTD, Res	500 uA						
Line resistance influence (1)							
RTD 3 wires	0.05%/Ω (50	Ω max balan	ced)				
Thermal drift (1)							
Full scale	± 0.01% / °C						

OUTPUT				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	4 mA	
Voltage	0 V	10 V	1 V	
Output calibration				
Current		± 7 uA		
Voltage	Voltage			
Burn-out values				
Max. output value		22 mA or 10	.6 V	
Min. output value		0 mA or -0.6	5 V	
<b>Output load Resista</b>	ance - Rloa	d		
Current output		< 500 Ω		
Voltage output		> 10 KΩ		
Short circuit current		26 mA max		
Response time (10÷90	about 500 ms			
(1) referred to the input	Span (differe	nce between	max and min	

4

Weight





The isolated converter DAT 4531 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for PTC, NTC and Pot.
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035













POWER SUPPLY				
Power supply voltage		18 30 Vdc		
Rever. polarity protection		60 Vdc max		
CURRENT CONSUMPTION				
Current output 35 m		nA max.		

#### Voltage output 20 mA max. ISOLATION

ISOLATION	
Among all the	1500 Vac,
ways	50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

HOUSING	
Emission	EN 61000-6-4
Immunity	EN 61000-6-2

#### Self-extinguishing plastic Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

lead-free	Application area

INPUT			
Input type	Min	Max	Span min
PTC			
KTY81-210	-55°C	150°C	50°C
KTY81-220	-55°C	150°C	50°C
KTY84-130	-40°C	300°C	50°C
KTY84-150	-40°C	300°C	50°C
NTC			
Coster 10K	-10°C	100°C	50°C
Coster 1K	-30°C	40°C	25°C
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Calibration (1	)		
PTC, NTC	the higher o	f ±0.1 % f.s. a	nd ±0.2°C
Potentiometer	± 0.05 % f.s.		
Linearity (1)			
PTC, NTC	± 0.1 % f.s.		
Sensor excita	tion curren	t	
PTC,NTC	500 uA		
Thermal drift	<b>(</b> 1)		
Full scale	± 0.01% / °C		

OUTPUT			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage		± 5 mV	
Burn-out values			
Max. output value		22 mA or 11 V	
Min. output value		0 mA or -0.6 V	
Output load Resista	ance - Rloa	d	
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		26 mA max	
Response time (10÷90% of f.s.)		about 500 ms	

(1) referred to the input Span (difference between max. and min.)

#### ISOLATED CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

The isolated converter DAT 4531 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal.

The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for voltage and current
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**











#### **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Rever, polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	35 mA max.
Voltage output	20 mA max.

#### **ISOLATION**

Among all the	1500 Vac,
ways	50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g

INPUT			
Input type	Min	Max	Span min
Voltage	0 V	10 V	1V
Current	0 mA	20 mA	1 mA
Calibration (1)			

Voltage	0 V	10 V	1V				
Current	0 mA	20 mA	1 mA				
Calibration (1)							
Volt	the higher o	f ±0.1 % f.s. aı	nd ± 2 mV				
mA	the higher o	f ±0.1 % f.s. aı	nd ± 6 uA				
Linearity (1)							
V, mA	± 0.05 % f.s.						
Input impedance							
Volt	>= 1 MΩ						
Current	<= 50 Ω						
Thermal drift (1)							
Full scale	± 0.01% / °C						
Thermal drift	t (1)						

OUTPUT			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current	± 7 uA		
Voltage	± 5 mV		
Burn-out values			
Max. output value	22 mA or 10.6 V		
Min. output value	0 mA or -0.6 V		
Output load Resista	ance - Rloa	d	
Current output	< 500 Ω		
Voltage output	> 10 KΩ		
Short circuit current	26 mA max		
Response time (10÷90	about 100 m	S	

#### **DATEXEL**

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC



#### **GENERAL DESCRIPTION**

The isolated converter DAT 4532 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

- Configurable input for TC and mV
- Configurable output in Current or Voltage
- Configuration by PC allows to program the two channels with two independent settings
- Double channel in the same enclosure
- Configurable by dip-switch or PC
- High accuracy
- On-field reconfigurable
- Galvanic isolation among the waysEMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**











#### **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	55 mA max.		
Voltage output	25 mA max.		

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

#### **INPUT (2 CHANNELS)** Input type Min Max Span min

TC (CJC Int./e	C (CJC int./ext.)									
J	-200°C	1200°C	100°C							
K	-200°C	1300°C	100°C							
S	0°C	1750°C	400°C							
R	0°C	1750°C	400°C							
В	0°C	1850°C	400°C							
E	-200°C	1000°C	100°C							
T	-200°C	400°C	100°C							
N	-200°C	00°C 1300°C 100°								
Voltage										
mV	-100 mV	+90 mV	5 mV							
mV	-100 mV	+200 mV	10 mV							
mV	-100 mV	+800 mV	20 mV							

Input calibration (1)						
mV, TC	the higher of ±0.1 % f.s. and ±12 uV					
Linearity (1)						
TC	± 0.2 % f.s.					
mV	± 0.1 % f.s.					
Input impeda	ance					
TC, mV	>= 10 MΩ					

1)	referred	tο	the	input	Span	(difference	between	max	and	min '	١
. ''	referred	ιO	uic	IIIPUL	Juan	(united enice	Detween	IIIan.	aniu	1111111.	,

Line resistance influence (1)						
TC, mV	<=0.8 uV/Ohm					
Thermal drift (1)						
Full scale	± 0.01 % / °C					
CJC	± 0.01 % / °C					
CJC compensation	+ 0.5°C					

OUTPUT (2 CHANNELS)			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage		± 5 mV	
Burn-out values			
Max. output value		22 mA or 10.	6 V
Min. output value		0 mA or -0.6 V	
Output load Resista	ance - Rloa	d	
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current 26 mA		26 mA max	
Response time (10÷90% of f.s.) about 500 ms		S	

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR RTD AND RESISTANCE CONFIGURABLE BY DIP-SWITCH OR PC

## 4532 DAT



#### GENERAL DESCRIPTION

The isolated double channel converter DAT 4532 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

#### **FEATURES**

- Configurable input for RTD and resistance
- Configurable output in current or voltage
- Double channel in the same enclosure
- Configurable by dip-switch or PC
- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



Full scale



**INPUT (2 CHANNELS)** 



#### **Application areas**











#### **POWER SUPPLY**

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	55 mA max.
Voltage output	25 mA max.

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### **HOUSING**

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

itti O1 (E CIIAITIEES)			
Input type	Min	Max	Span min
RTD (2, 3 wires)			
Pt100	-200°C	850°C	50°C
Pt1000	-85°C	185°C	30°C
Ni100	-60°C	180°C	50°C
Ni1000	-60°C	150°C	30°C
RES. (2, 3	0 Ω	500 Ω	50 Ω
wires)	0 Ω	2000 Ω	50 Ω
Calibration (1)	)		
RTD	the higher o	the higher of ±0.1 % f.s. and ±0.2°C	
Low Res.	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$		
High Res.	the higher of $\pm 0.2$ % f.s. and $\pm$ 1 $\Omega$		
Linearity (1)			
RTD	± 0.1 % f.s.		
Sensor excitation current			
RTD, Res	500 uA		
Line resistance influence (1)			
RTD 3 wires	$0.05~\%/\Omega$ (50 $\Omega$ max balanced)		
Thermal drift (1)			

± 0.01 % / °C

OUTPUT (2 CHANNELS)			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage ± 5 mV			
Burn-out values			
Max. output value		22 mA or 10.	.6 V
Min. output value		0 mA or -0.6	V
<b>Output load Resista</b>	ance - Rloa	d	
Current output < 500 Ω			
Voltage output		> 10 KΩ	
Short circuit current 26 mA max			
Response time (10÷90	% of f.s.)	about 500 m	ıs
(1) referred to the input (	Snan (differen	ce hetween r	may and min'



#### GENERAL DESCRIPTION

The isolated double channel converter DAT 4532 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal.

The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

#### **FEATURES**

- Configurable input for PTC, NTC and Pot.
- Configurable output in current or voltage
- Double channel in the same enclosure
- Configurable by dip-switch or PC - High accuracy
- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**









POWER SUPPLY	
Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max

CURRENT CONSUMPTION		
Current output	55 mA max.	
Voltage output	25 mA max.	

#### **ISOLATION**

Among all the 1500 Vac, 50 Hz, 1 min ways

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°
Storage temperature	-40°C +85°
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4
HOUSING	

110031110		
Material	Self-extinguishing plastic	
Dim. (mm)	W x L x H : 90 x 112 x 12.5	
Weight	about 90 g.	

INPUT (2 CHANNELS)			
Input type	Min	Max	Span min
PTC			
KTY81-210	-55°C	150°C	50°C
KTY81-220	-55°C	150°C	50°C
KTY84-130	-40°C	300°C	50°C
KTY84-150	-40°C	300°C	50°C
NTC			
Coster 10K	-10°C	100°C	50°C
Coster 1K	-30°C	40°C	25°C
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Calibration (1)			
PTC, NTC	the higher of ±0.1 % f.s. and ±0.2 °C		
Potentiometer	± 0.05 % f.s.		
Linearity (1)			
PTC, NTC	± 0.1 % f.s.		
Sensor excitation current			

OUTPUT (2 CHANNELS)			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage		± 5 mV	
Burn-out values			
Max. output value		22 mA or 10.	6 V
Min. output value		0 mA or -0.6	V
Output load Resista	ance - Rloa	d	
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		26 mA max	
Response time (10÷90% of f.s.)		about 500 m	ns
		•	

(1) referred to the input Span (difference between max. and min.)

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC

# **DAT 4532**

#### GENERAL DESCRIPTION

Thermal drift (1)

PTC.NTC

Full scale

The isolated converter DAT 4532 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal.

The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

- Configurable input for voltage and current
- Configurable output in current or voltage

500 uA

± 0.01 % / °C

- Double channel in the same enclosure
- Configurable by dip-switch or PC

**INPUT (2 CHANNELS)** 

- Two independent channels
- High accuracy
- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



Input type



Min

#### **Application areas**

Span min

Max





**OUTPUT (2 CHANNELS)** 







#### **POWER SUPPLY**

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output 55 mA max. Voltage output 25 mA max

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### TEMPERATURE AND HUMIDITY

Operative temperature -20°C .. +60°C -40°C .. +85°C Storage temperature Humidity (not condensed) 0 .. 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity EN 61000-6-2 EN 61000-6-4 Emission

#### **HOUSING**

Material Self-extinguishing plastic Dim. (mm) W x L x H : 90 x 112 x 12.5 about 90 g.

Voltage	0 V	10 V	1 V
Current	0 mA	20 mA	1 mA
Calibration (1)			
Volt	the higher of $\pm 0.1$ % f.s. and $\pm$ 2 mV		
mA	the higher of $\pm 0.1$ % f.s. and $\pm$ 6 uA		
Linearity (1)			
V, mA	± 0.05 % f.s.		
Input impedance			
Volt	>= 1 MΩ		
Current	<= 50 Ω		
Thermal drift (1)			
Full scale	± 0.01 % / °C		

Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage		± 5 mV	
Burn-out values			
Max. output value		22 mA or 10.	6 V
Min. output value		0 mA or -0.6 V	
<b>Output load Resistance - Rloa</b>		d	
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		26 mA max	
Response time (10÷90% of f.s.)		about 100 ms	s

#### ISOLATED FREQUENCY TO VOLTAGE, FREQUENCY TO CURRENT CONVERTER CONFIGURABLE BY DIP-SWITCH OR PC, TRANSISTOR OR RELAY OUTPUTS



The isolated frequency converter DAT 4540 is able to measure, up to 20 KHz, the frequency of TTL, Namur, NPN, PNP and Tachometer digital signals. In function of programming, the measured values are converted in a current or voltage signal. Moreover two relays are available in order to be programmed as trip alarm (version "-R"). For the Namur input is continuously checked the integrity of the sensor; in case of fault (short circuit or interruption), on the transistor output is generated an alarm. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Measure of the frequency for the following digital contacts input: Namur, TTL, NPN, PNP, Tachometer, Volt
- Configurable output as current or voltage
- Double optional trip alarm
- Fault alarm condition for Namur sensor
- Configurable by Dip-switch or PC



- On-field reconfigurable
- Galvanic isolation among all ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in according to EN-50022 and EN-50035 standards







#### **Application areas**



Frequency





0.1 Hz ÷ 20 KHz



POWER SUPPLY		
Power supply voltage 18 30 Vdc		18 30 Vdc
Rever. polarity protection 60 Vdc max		60 Vdc max
CURRENT CONSUMPTION		
Current output 90 mA max.		nA max.
Voltage output 30 mA max.		
(+ 10mA for each relay output active)		

#### **ISOLATION**

Among all the ways 1500 Vac, 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity EN 61000-6-2 Emission EN 61000-6-4

#### HOUSING

4631

DAT

Material	Self-extinguishing plastic
DAT 4540 (mm)	WxLxH: 90 x 112 x 12.5
DAT 4540-R (mm)	WxL xH: 90 x 112 x 22.5
Weight	about 90 g.

INPUT	
Namur ( DIN 19234 )	)
Low level Trig.	< 1.2 mA
High level Trig.	> 2.1 mA
Voltage Aux.	8.2 V – 8 mA
Impedance	~ 1000 Ohm
Interruption Alarm	< 0.2 mA
Short Circuit Alarm	> 7.0 mA
TTL	
Low level Trig.	< 0.8 V
High level Trig.	> 2.0 V
Impedance	> 20 KOhm
PNP	
Low level Trig.	< 4.0 V
High level Trig.	> 7.0 V
Voltage Aux.	17 V – 20 mA
Impedance	~ 2.2 KOhm
Tachometer	
Low level Trig.	< -50 mV
High level Trig.	> +50 mV
Impedance	> 100 KOhm
Voltage (programm	able)
Level Trigger	0.05 V ÷ 7.0 V
Voltage Aux.	5 ÷ 17 V @ 20 mA
Impedance	> 20 KOhm

Sample Time <		50ms + perio	oa
OUTPUT			
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			
Current		± 7 uA	
Voltage		± 5 mV	
Voltage Aux.		>12V @ 20 mA	
Burn-out values			
Max. output value		22 mA or 11 '	V
Min. output value		0 mA or -0.6 V	
Output load Resistance - Rload			
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		30 mA max	

ı "-R")
"-R")
,
50 Vac, 2A
000 Vac max
0 Vdc, 100mA
0

#### ISOLATED SPLITTER/CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC



#### GENERAL DESCRIPTION

The isolated splitter/converter DAT 4631 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for TC and mV
- Double output configurable in current or voltage
- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**











#### **POWER SUPPLY**

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output 55 mA max. Voltage output 25 mA max.

#### **ISOLATION**

Among all the 1500 Vac, 50 Hz, 1 min ways

#### **TEMPERATURE AND HUMIDITY**

-20°C .. +60°C Operative temperature Storage temperature -40°C .. +85°C Humidity (not condensed) 0 .. 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT				
Input type	Min	Max	Span min	
TC (CJC int./ext.)				
J	-200°C	1200°C	100°C	
K	-200°C	1300°C	100°C	
S	0°C	1750°C	400°C	
R	0°C	1750°C	400°C	
В	0°C	1850°C	400°C	
E	-200°C	1000°C	100°C	
Т	-200°C	400°C	100°C	
N	-200°C	1300°C	100°C	
Voltage				
mV	-100 mV	+90 mV	5 mV	
mV	-100 mV	+200 mV	10 mV	
mV	-100 mV	+800 mV	20 mV	
Input calibration (1)				
mV, TC	the higher o	f ±0.1 % f.s. a	nd ±12 uV	
Linearity (1)				
TC	± 0.2 % f.s.			
mV	± 0.1 % f.s.			
Input impeda	nce (1)			
TC, mV	>= 10 MΩ			

Line resistance influence (1)		
TC, mV	<=0.8 uV/Ohm	
Thermal drift (1)		
Full scale	± 0.01% / °C	
CJC	± 0.01% / °C	
CJC compensation	± 0.5°C	

OUTPUT (2 CHANN	NELS)		
Output type	Min	Max	Span min
Current	0 mA	20 mA	4 mA
Voltage	0 V	10 V	1 V
Output calibration			

7	Output type	IVIIII	IVIAX	Span min
┨	Current	0 mA	20 mA	4 mA
$\forall$	Voltage	0 V	10 V	1 V
	Output calibration			
٦	Current		± 7 uA	
	Voltage		± 5 mV	
	Burn-out values			
	Max. output value		22 mA or 10.6 V	
	Min. output value		0 mA or -0.6 V	
	<b>Output load Resista</b>	ance - Rloa	d	
╛	Current output		< 500 Ω	
	Voltage output		> 10 KΩ	
	Short circuit current		26 mA max	
╛	Response time (10÷90	% of f.s.)	about 500 m	S

 $S \subseteq S$ 

**ISOLATION** 

Material

Dim. (mm

Weight

8



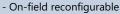
#### GENERAL DESCRIPTION

The isolated Splitter/converter DAT 4631 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable compensation. In function of programming, the measured values are converted in a current or voltage signal.

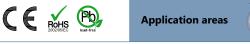
The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for RTD and resistance
- Double output configurable in current or voltage
- Configurable by dip-switch or PC
- High accuracy



- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035











FOWER SOFFEI		
Power supply voltage		18 30 Vdc
Rever. polarity protection		60 Vdc max
CURRENT CONSUMPTION		
Current output	55 m	A max.
Voltage output 2:		A max.

<b>TEMPERATUR</b>	E AND HUMIDITY
ways	50 Hz, 1 min
Among all the	1500 Vac,

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

ЕМС	(for	industrial	environments)	ı

	,	
DIRECTIVE: 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		

1G	
	Self-extinguishing plastic
1)	W x L x H : 90 x 112 x 12.5
	about 90 g

INPUT			
Input type	Min	Max	Span min
RTD (2, 3 wii	es)		
Pt100	-200°C	850°C	50°C
Pt1000	-85°C	185°C	30°C
Ni100	-60°C	180°C	50°C
Ni1000	-60°C	150°C	30°C
RES. (2, 3	0 Ω	500 Ω	50 Ω
wires)	0 Ω	2000 Ω	50 Ω
Calibration (	1)		
RTD	the higher o	f ±0.1 % f.s. a	nd ±0.2 °C
Low Res.	the higher o	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$	
High Res.	the higher o	the higher of $\pm 0.2$ % f.s. and $\pm 1 \Omega$	
Linearity (1)			
RTD	± 0.1 % f.s.		
Sensor excita	ation curren	t	
DTD Das	ΓΩΩ Δ		

Low Res.	the higher of ±0.1 % i.s. and ±0.15 t2	
High Res.	the higher of $\pm 0.2$ % f.s. and $\pm 1 \Omega$	
Linearity (1)		
RTD	± 0.1 % f.s.	
Sensor excitation current		
RTD, Res	500 uA	
Line resistance	e influence (1)	
RTD 3 wires	ce influence (1) 0.05 %/ $\Omega$ (50 $\Omega$ max balanced)	

OUTPUT (2 CHANNELS)				
Output type Min		Max	Span min	
Current 0 mA		20 mA	4 mA	
Voltage 0 V		10 V	1 V	
Output calibration				
Current		± 7 uA		
Voltage		± 5 mV		
Burn-out values				
Max. output value		22 mA or 10.	6 V	
Min. output value		0 mA or -0.6 V		
Output load Resistance - Rload				
Current output		< 500 Ω		
Voltage output		> 10 KΩ		
Short circuit current		26 mA max		
Response time (10÷90% of f.s.)		about 500 m	S	
(1) referred to the input Span (difference between max, and min				

#### ISOLATED, SPLITTER/CONVERTER FOR PTC/NTC/POT CONFIGURABLE BY DIP-SWITCH OR PC

# **DAT 4631**

#### GENERAL DESCRIPTION

Thermal drift (1)

Full scale

The isolated Splitter/converter DAT 4631 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal

The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for PTC, NTC and Pot.
- Double output configurable in current or voltage

± 0.01 % / °C

- Configurable by dip-switch or PC
- High accuracy

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











POWER SUPPLY	P	0	W	ER	SU	IPF	LY
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Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION**

Voltage output 25 mA max.	

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

DIRECTIVE: 2004 / 100 / EC		
Immunity	EN 61000-6-2	
Emission EN 61000-6-4		
HOHCING		

HOUSING			
Material	Self-extinguishing plastic		
Dim. (mm)	W x L x H : 90 x 112 x 12.5		
Weight	about 90 g		

INPUT					
Input type	Min	Max	Span min		
PTC					
KTY81-210	-55°C	50°C			
KTY81-220	-55°C	-55°C 150°C			
KTY84-130	-40°C	300°C	50°C		
KTY84-150	-40°C	300°C	50°C		
NTC					
Coster 10K	-10°C	100°C	50°C		
Coster 1K	-30°C	40°C	25°C		
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %		
Calibration (1)					
PTC, NTC	the higher of ±0.1 % f.s. and ±0.2 °C				
Potentiometer	± 0.05 % f.s.				
Linearity (1)					
PTC, NTC	± 0.1 % f.s.				
Sensor excitation current					
PTC,NTC	500 uA				
Thermal drift	<b>(</b> 1)				
Full scale	± 0.01 % / °C				
1) referred to the input Span (difference between max					

OUTPUT (2 CHANNELS)				
Output type Min		Max Span mi		
Current 0 mA		20 mA 4 mA		
Voltage 0 V		10 V 1 V		
Output calibration				
Current		± 7 uA		
Voltage		± 5 mV		
Burn-out values				
Max. output value		22 mA or 10.6 V		
Min. output value		0 mA or -0.6 V		
Output load Resistance - Rload				
Current output		< 500 Ω		
Voltage output		> 10 KΩ		
Short circuit current	26 mA max			
Response time (10÷90	about 500 m	S		

#### ISOLATED SPLITTER/CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC



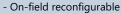
#### GENERAL DESCRIPTION

The isolated Splitter/converter DAT 4631 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal.

The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for voltage and current
- Double output configurable in current or voltage
- Configurable by dip-switch or PC
- High accuracy



- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

















POWER SUPPLY			
Power supply voltage 18 30 Vdc			18 30 Vdc
Rever. polarity p	rotec	tion	60 Vdc max
CURRENT CONSUMPTION			
Current output 55 mA max.			
Voltage output		25 m	A max.
ISOLATION			
Among all the	1500 Vac,		
ways	ways 50 Hz, 1 min		
TEMPERATURE AND HUMIDITY			

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

<b>EMC</b> (for industrial environments)			
DIRECTIVE: 2004 / 108 / EC			
Immunity	EN 61000-6-2		
Emission	n EN 61000-6-4		
HOUSING			
Material	Self-extinguishing plastic		
Dim. (mm)	W x L x H : 90 x 112 x 12.5		

about 90 g.

INPUT							
Input type	Min Max Span n						
Voltage	0 V	10 V	1 V				
Current	0 mA	20 mA	1 mA				
Calibration (1)							
Volt	the higher o	f ±0.1 % f.s. a	nd ± 2 mV				
mA	the higher o	f ±0.1 % f.s. a	nd ± 6 uA				
Linearity (1)	Linearity (1)						
V, mA	± 0.05 % f.s.						
Input impeda	nce						
Volt	>= 1 MΩ						
Current	<= 50 Ω						
Thermal drift (1)							
Full scale	± 0.01 % / °C						

	<b>OUTPUT (2 CHANN</b>	IELS)		
٦	Output type	Min	Max	Span min
	Current	0 mA	20 mA	4 mA
	Voltage	0 V	10 V	1 V
	Output calibration			
	Current		± 7 uA	
	Voltage	± 5 mV		
	Burn-out values			
]	Max. output value 22 mA or 10.6 V			
	Min. output value		0 mA or -0.6	V
1	<b>Output load Resista</b>	ance - Rloa	d	
	Current output		< 500 Ω	
	Voltage output	> 10 KΩ		
7	Short circuit current	26 mA max		
_	Response time (10÷90	% of f.s.)	about 100 ms	S

<sup>(1)</sup> referred to the input Span (difference between max. and min.)

#### ISOLATED MATHEMATICAL MODULE FOR VOLTAGE AND CURRENT INPUT CONFIGURABLE BY DIP-SWITCH OR PC

## 4632

Weight



#### GENERAL DESCRIPTION

The isolated converter DAT 4632 D is able to measure voltage and current signals, execute a programmable mathematical function and provide on output a normalized current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FFATURES**

- Configurable input for voltage and current
- Configurable output in current or voltage
- Calculation function (two independent outputs)
- Configurable by dip-switch or PC

**INPUT (2 CHANNELS)** 

- High accuracy

- On-field reconfigurable
- Galvanic isolation among all the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





#### **Application areas**





OUTDUT (2 CHANNELS)







#### **POWER SUPPLY**

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output 55 mA max Voltage output 25 mA max

#### **ISOLATION**

1500 Vac, Among all the 50 Hz, 1 min

#### **TEMPERATURE AND HUMIDITY**

Operative temperature -20°C .. +60°C Storage temperature -40°C +85°C Humidity (not condensed) 0 .. 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE: 2004 / 108 / EC** Immunity EN 61000-6-2

Emission	EN 61000-6-4
HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

Input type	Min	Max	Span min		
Voltage	0 V	10 V	1 V		
Current	0 mA	20 mA	1 mA		
Calibration (1)					
Volt	the higher o	f ±0.1 % f.s. a	nd ± 2 mV		
mA	the higher o	f ±0.1 % f.s. a	nd ± 6 uA		
Linearity (1)					
V, mA	± 0.05 % f.s.				
Input impeda	nce				
Volt	>= 1 MΩ				
Current	<= 50 Ω				
Thermal drift	<b>(</b> 1)				
Full scale	± 0.01 % / °C				

OUTPUT (2 CHANNI	ELS)			
Output type	Min	Max	Span min	
Current	0 mA	20 mA	4 mA	
Voltage	0 V	10 V	1 V	
Output calibration				
Current		± 7 uA		
Voltage		± 5 mV		
Burn-out values				
Max. output value		22 mA or 10.6 V		
Min. output value		0 mA or -0.6 V		
Output load Resista	nce - Rloa	d		
Current output		< 500 Ω		
Voltage output		> 10 KΩ		
Short circuit current		26 mA max		
Response time (10÷909	% of f.s.)	about 100 m	S	
(4) f ll	. 1100			

<sup>(1)</sup> referred to the input Span (difference between max. and min.)

#### PC PROGRAMMABLE TWO WIRE ISOLATED UNIVERSAL TRANSMITTER

#### **DAT 4035**



#### **GENERAL DESCRIPTION**

The transmitter DAT 4035 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal

even coming from a potentiometer connected on its input.

Moreover the DAT 4035 is able to measure and linearise the standard thermocouples with internal cold junction compensation.

The measured values are converted in a 4÷20 mA current signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- On-field reconfigurable
- Galvanic isolation at 2000 Vac
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











POWER SUPPLY		ISOLATION VOLTAGE		TEMPERATURE & HUMIDITY	
Power supply voltage	10 30 Vdc		2000 Vac 50 Hz, 1 min.	Operative temperature	-20°C +70°C
		Input/Power		Storage temperature	-40°C +85°C
Reverse polarity protection	60 Vdc max.	supply		Humidity (not condensed)	0 90 %

EMC (for industrial environments)		HOUSING			
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic		
Immunity	EN 61000-6-2	Dimensions (mm)	W x L x H : 90 x 112 x 12.5		
Emission	EN 61000-6-4	Weight	about 90 g.		
INPLIT					

INPUT								
Input type	Min	Max	Span min					
TC (CJC int./ext.)								
J	-200°C	1200°C	2 mV					
K	-200°C	1370°C	2 mV					
S	-50°C	1760°C	2 mV					
R	-50°C	1760°C	2 mV					
В	400°C	1820°C	2 mV					
E	-200°C	1000°C	2 mV					
Т	-200°C	400°C	2 mV					
N	-200°C	1300°C	2 mV					
RTD 2,3,4 wires								
Pt100	-200°C	850°C	50°C					
Pt1000	-200°C	200°C	50°C					
Ni100	-60°C	180°C	50°C					
Ni1000	-60°C	150°C	50°C					
Voltage								
mV	-400 mV	+400 mV	2 mV					
mV	-100 mV	+700 mV	2 mV					
Volt	- 10 V	+10 V	500 mV					
	0 Ω	200 Ω	10 %					
Potentiometer (Nominal value)	200 Ω	500 Ω	10 %					
(Normial Value)	0.5 ΚΩ	50 KΩ	10 %					
Resistance 2,3,4 wires								
Low	0 Ω	300 Ω	10 Ω					
High	0 Ω	2000 Ω	200 Ω					
Current mA	-10 mA	+24 mA	2 mA					
Input impedance								
TC, mV	>= 10 N	1Ω						
Volt	>= 1 N	<b>Λ</b> Ω						
Current	~ 50 Ω							

INPUT		
Input calibration (1)		
RTD	the higher of ±0.1% f.s. and ±0.2°C	
Res. Low	the higher of $\pm 0.1\%$ f.s. and $\pm 0.15~\Omega$	
Res. High	the higher of $\pm 0.2\%$ f.s. and $\pm 1~\Omega$	
mV, TC	the higher of ±0.1% f.s. and ±18 uV	
Volt	the higher of $\pm 0.1\%$ f.s. and $\pm 2$ mV	
mA	the higher of $\pm 0.1\%$ f.s. and $\pm 6$ uA	
Linearity (1)		
TC	± 0.2 % f.s.	
RTD	± 0.1 % f.s	
Line resistance influence (1)		
TC, mV,V	<=0.4 uV/Ohm	
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)	
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)	
RTD excitation current		
Typical	0.350 mA	
CJC Comp.	± 0.5 °C	
Thermal drift (1)		
Full scale	± 0.01 % / °C	
CJC	± 0.01 % / °C	
Burn-out values		
Max. value output	about 22.5 mA	
Min. value output	about 3.6 mA	
Response time (10÷90% of f.s.)	about 400 ms	
(1) referred to input Span (differe	ence between max. and min. values)	

OUTPUT								
Output type	Min	Max	Span min					
Direct current	4 mA	20 mA	4 mA					
Reverse current	20 mA	4 mA	4 mA					
Output calibration								
Current		± 7 uA						

#### PC PROGRAMMABLE ISOLATED UNIVERSAL SIGNAL CONVERTER

#### **DAT 4135**



#### **GENERAL DESCRIPTION**

The converter DAT 4135 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal even coming from a potentiometer connected on its input. Moreover the DAT 4135 is able to measure and linearise the standard thermocouples with internal cold junction compensation.

In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable
- Galvanic isolation at 2000 Vac
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

















POWER SUPPLY		ISOLATION VOLTAGE		TEMPERATURE & HUMIDITY			
		Input/Power supply-Output 2000 Vac 50 Hz, 1 min.		Operative temperature		-20°C +70°C	
Power supply voltage	18 30 Vdc	OUTPUT LOAD RESISTANCE (RLOAD)		.,	- F		
		Current output		= 650 Ω</td <td colspan="2">Storage temperature</td> <td>-40°C +85°C</td>	Storage temperature		-40°C +85°C
Reverse polarity	60 Vdc max.	c max. Voltage output $>/= 3.5 \text{ K}\Omega$ Limitation current about 25 mA		>/= 3.5 KΩ			0 00 0/
protection				about 25 mA	Humidity (not cond	ensed)	0 90 %
CURRENT CONSUMPTION EMC (for industrial environments)		onments)	HOUSING				
Current output	40 mA max.	DIRECTIVE 2004/108/EC		Material	Self-extinguish	ing plastic	
		Immunity EN 61000-6-2		Dimensions (mm)	W x L x H : 90 x 112 x 12.5		
			EN 61000-6-4				

INPUT							
Input type	ı	Vlin	Max	Span min			
TC (CJC int./ext.)							
J	-20	00°C	1200°C	2 mV			
K	-20	00°C	1370°C	2 mV			
S	-!	50°C	1760°C	2 mV			
R	-!	50°C	1760°C	2 mV			
В	4(	00°C	1820°C	2 mV			
E	-20	00°C	1000°C	2 mV			
Т	-20	00°C	400°C	2 mV			
N	-20	00°C	1300°C	2 mV			
RTD 2,3,4 wires							
Pt100	-20	00°C	850°C	50°C			
Pt1000	-20	00°C	200°C	50°C			
Ni100	-6	0°C	180°C	50°C			
Ni1000	-60°C		150°C	50°C			
Voltage							
mV	-400 mV		+400 mV	2 mV			
mV	-10	00 mV	+700 mV	2 mV			
Volt	- 10 V		+10 V	500 mV			
Potentiometer	0 Ω		200 Ω	10 %			
(Nominal value)		0 Ω	500 Ω	10 %			
<u> </u>	0.5 ΚΩ		50 ΚΩ	10 %			
Resistance 2,3,4 wires	. —						
Low		Ω	300 Ω	10 Ω			
High	_	Ω	2000 Ω	200 Ω			
Current mA	-10	) mA	+24 mA	2 mA			
Input calibration (1)							
RTD		the high	ner of ±0.1 % f.s.	and ±0.2°C			
Res. Low	the higher of ±0.1 % f.s. and ±0.15 $\Omega$						
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$						
mV, TC		the higher of ±0.1 % f.s. and ±18 uV					
Volt		the higher of ±0.1 % f.s. and ± 2 mV					
mA	the higher of $\pm 0.1 \%$ f.s. and $\pm 6 \text{ uA}$						

INPUT			
Input impedance			
TC, mV	>= 10 MΩ		
Volt	>= 1 MΩ		
Current	~ 50 Ω		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence (1)			
TC, mV,V	<=0.8 uV/Ohm		
RTD 3 wires	$0.05 \%/\Omega$ (50 Ω balanced max.)		
RTD 4 wires	$0.005 \%/\Omega$ (100 $\Omega$ balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC Comp.	± 0.5°C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Burn-out values			
Max. value output	about 23 mA or 10.8 Vdc		
Min. value output	about 0 mA or 0 Vdc		
Response time (10÷90% of f.s.)	about 400 ms		

OUTPUT			
Output type	Min	Max	Span min
Direct current	0 mA	20 mA	4 mA
Reverse current	20 mA	0 mA	4 mA
Direct voltage	0 V	10 V	1 V
Reverse voltage	10 V	0 V	1 V
Output calibration			
Current	± 7 uA		
Voltage	± 5 mV		

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# **DAT 4135/SEL**

#### **GENERAL DESCRIPTION**

The converter DAT 4135/SEL is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4135/SEL is able to measure and linearise the standard thermocouples with internal cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable

- Galvanic isolation at 2000 Vac
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











			2002/95/EC lead-free						
POWER SUPPLY ISOLATION VOLTAGE		SEL INPU	JT COMMAN	ID					
Input/Power supply-Outp		utput 20	000 Vac 50 Hz, 1 min.	Disable o	utput	4÷30 Vdc			
Power supply voltage	18 30 V	/dc	<b>OUTPUT LOAD RES</b>	OUTPUT LOAD RESISTANCE (RLOAD)		Enable ou	utput	0 Vdc or n	ot connected
			Current output		= 650 Ω</td <td>TEMPERA</td> <td colspan="2">TEMPERATURE &amp; HUMIDITY</td> <td></td>	TEMPERA	TEMPERATURE & HUMIDITY		
Reverse polarity	60 Vdc max. Voltage out		Voltage output		>/= 3.5 KΩ	Operative temperature		۵	-20°C +70°C
protection			Limitation current		20 mA max.	Storage temperature		-40°C +85°C	
CURRENT CONSUMPTION	1		EMC (for industrial environ		nments)	Humidity (not condensed)			
			,		Humidity	(not conden	sed)	0 90 %	
Current output	40 mA m	nax.	DIRECTIVE 2004/108/EC			HOUSING	G		
		Immunity		EN 61000-6-2		Material Self-extinguishing		uishing plastic	
Voltage output 20 r	20 4		Initiality Liver		700 0 2	Dimensio	ons (mm)	WxLxH:	90 x 112 x 12.5
	20 mA max.	Emission Ef		N 61000-6-4			about 90 g	J.	

INPUT					
Input type	ı	Min	Max	Span min	
TC (CJC int./ext.)					
J	-20	00°C	1200°C	2 mV	
K	-20	00°C	1370°C	2 mV	
S		50°C	1760°C	2 mV	
R	-	50°C	1760°C	2 mV	
В	4(	00°C	1820°C	2 mV	
E	-20	00°C	1000°C	2 mV	
Т	-20	00°C	400°C	2 mV	
N	-20	00°C	1300°C	2 mV	
RTD 2,3,4 wires					
Pt100	-20	00°C	850°C	50°C	
Pt1000	-20	00°C	200°C	50°C	
Ni100	-6	o°C	180°C	50°C	
Ni1000	-6	o°C	150°C	50°C	
Voltage					
mV	-40	00 mV	+400 mV	2 mV	
mV	-10	00 mV	+700 mV	2 mV	
Volt		10 V	+10 V	500 mV	
Potentiometer		0 Ω	200 Ω	10%	
(Nominal value)	20	00 Ω	500 Ω	10%	
(rvormilar varae)	0	.5 ΚΩ	50 ΚΩ	10%	
Resistance 2,3,4 wire	es				
Low	(	) Ω	300 Ω	10 Ω	
High	C	) Ω	2000 Ω	200 Ω	
Current mA	-10	) mA	+24 mA	2 mA	
Input calibration (1)					
RTD		the higher of ±0.1% f.s. and ±0.2°C			
Res. Low		the higher of $\pm 0.1\%$ f.s. and $\pm 0.15~\Omega$			
Res. High		the higher of $\pm 0.2\%$ f.s. and $\pm 1 \Omega$			
mV, TC		the higher of ±0.1% f.s. and ±18 uV			

the higher of  $\pm 0.1\%$  f.s. and  $\pm 2$  mV

the higher of  $\pm 0.1\%$  f.s. and  $\pm 6$  uA

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Volt	>= 1 MΩ
Current	~ 50 Ω
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV,V	<=0.8 uV/Ohm
RTD 3 wires	0.05%/Ω (50 Ω balanced max.)
RTD 4 wires	0.005%/Ω (100 Ω balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC Comp.	± 0.5°C
Thermal drift (1)	
Full scale	± 0.01% / °C
CJC	± 0.01% / °C
Burn-out values	
Max. value output	about 23 mA or 10.8 Vdc
Min. value output	about 0 mA or 0 Vdc
Response time (10÷90% of f.s.)	about 400 ms

(1) referred to input Span (difference between max. and min. values)

OUTPUT						
Output type	Min	Max	Span min			
Direct current	0 mA	20 mA	4 mA			
Reverse current	20 mA	0 mA	4 mA			
Direct voltage	0 V	10 V	1 V			
Reverse voltage	10 V	0 V	1 V			
Output calibration						
Current	± 7 uA					
Voltage	± 5 mV					

Volt

mΑ

#### PC PROGRAMMABLE 3 WAYS ISOLATED UNIVERSAL SIGNAL CONVERTER

#### **DAT 4235**



#### **GENERAL DESCRIPTION**

The converter DAT 4235 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4235 is able to measure and linearise the standard thermocouples with internal cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable

RoHS Poble Road-free

- Galvanic isolation at 2000 Vac on the 3 ways
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

POWER SUPPLY		ISOLATION VOLTAGE		TEMPERATURE & HUMIDITY				
Power supply voltage 18 30 Vdc		Input/Power supply-Output 2000 Vac 50 Hz, 1 min.		Operative temperature		-20°C +70°C		
		OUTPUT LOAD RESISTANCE (RLOAD)		· ·				
		Current output	= 650 Ω</td <td>Storage</td> <th>temperatu</th> <th>re</th> <td></td> <td>-40°C +85°C</td>	Storage	temperatu	re		-40°C +85°C
Reverse polarity 60 Vdc max.		Voltage output	>/= 600 Ω	Humidity (not condensed) 0 .				
		Limitation current	30 mA max.			0 90 %		
CURRENT CONSUMPTION		EMC (for industrial environments)		HOUSIN	IG			
		DIDECTIVE 2004/109/EC		Matarial		Calt	audia aut	iahina nlaatia

**Application areas** 

Current output  70 mA max.  DIRECTIVE 2004/108/EC  Immunity  EN 61000-6-2  Dimensions (mm)  W x L x H : 90 x 112 x 12.5  Voltage output  50 mA max.  Emission  EN 61000-6-4  Weight  about 90 g.	CURRENT CONSUMPTION	MPTION EMC (for industrial environments)		HOUSING		
Voltage output 50 mA may	Current output	70 mA max.	DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic
Voltage output 50 mA max. Emission EN 61000-6-4 Weight about 90 g.			Immunity	EN 61000-6-2	Dimensions (mm)	W x L x H : 90 x 112 x 12.5
	Voltage output 50 mA max.		Emission	EN 61000-6-4	Weight	about 90 g.

INPUT					
Input type	ı	Min	Max	Span min	
TC (CJC int./ext.)					
J	-20	00°C	1200°C	2 mV	
K	-20	00°C	1370°C	2 mV	
S	-:	50°C	1760°C	2 mV	
R	-:	50°C	1760°C	2 mV	
В	400°C		1820°C	2 mV	
E	-20	00°C	1000°C	2 mV	
Т	-20	00°C	400°C	2 mV	
N	-20	00°C	1300°C	2 mV	
RTD 2,3,4 wires					
Pt100	-20	00°C	850°C	50°C	
Pt1000	-20	00°C	200°C	50°C	
Ni100	-6	o°C	180°C	50°C	
Ni1000	-60°C		150°C	50°C	
Voltage					
mV	-400 mV		+400 mV	2 mV	
mV	-100 mV		+700 mV	2 mV	
Volt	- 10 V		+10 V	500 mV	
Potentiometer	0 Ω		200 Ω	10%	
(Nominal value)	200 Ω		500 Ω	10%	
(rrammar randa)	0.5 ΚΩ		50 ΚΩ	10%	
Resistance 2,3,4 wires					
Low	0 Ω		300 Ω	10 Ω	
High	0 Ω		2000 Ω	200 Ω	
Current mA	-10 mA		+24 mA	2 mA	
Input calibration (1)					
RTD		the higher of ±0.1 % f.s. and ±0.2°C			
Res. Low		the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$			
Res. High		the high	ner of ±0.2 % f.s.	and ±1Ω	
mV, TC		the higher of ±0.1 % f.s. and ±18 uV			
Volt		the higher of $\pm 0.1$ % f.s. and $\pm 2$ mV			
mA	the higher of $\pm 0.1$ % f.s. and $\pm$ 6 uA				

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Volt	>= 1 MΩ
Current	~ 50 Ω
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV,V	<=0.8 uV/Ohm
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)
RTD 4 wires	$0.005~\%/\Omega~(100~\Omega~$ balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC Comp.	± 0.5°C
Thermal drift (1)	
Full scale	± 0.01 % / °C
CJC	± 0.01 % / °C
Burn-out values	
Max. value output	about 25 mA or 10.8 Vdc
Min. value output	about -25 mA or -10.8 Vdc
Response time (10÷90% of f.s.)	about 400 ms

(1) referred to input Span (difference between max. and min. values)

OUTPUT						
Output type	Min	Max	Span min			
Direct current	-20 mA	20 mA	4 mA			
Reverse current	20 mA	-20 mA	4 mA			
Direct voltage	-10 V	10 V	1 V			
Reverse voltage	10 V -10 V 1 V					
Output calibration						
Current	± 7 uA or ± 15 uA (2)					
Voltage	± 10 mV					

(2) referred to the output ± 20 mA.

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#### **DAT 4520**



#### **GENERAL DESCRIPTION**

The DAT 4520 device measures mV, V, mA or resistance signals, and can be directly connected to Thermocouple, RTD or potentio-

The input signal is filtered, linearised, amplified and transfered to the output circuit, that converts it in a 0-10V range or 0-20mA range signal. Auxiliary power supply allows to supply the output current loop. Moreover, the device is able to control two trip alarm relay outputs. DAT 4520 has a 3 way isolation: input is 2000 Vac isolated from power supply and output; power supply and output are 1500 Vac isolated between them.

#### **FEATURES**

- Configurable input for Tc, RTD, Res, mV, V, mA, Potentiometer

- High accuracy Configurable by Personal Computer 0 to 10V, 0 to 20mA configurable output
- On-field reconfigurable

- 2000 Vac galvanic isolation between input, output
- Programming of the unit measure as °C or °F
- EMC compliance CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











TRIP ALARMS	
Output type	n° 2 Relay SPDT
Contact rating	2A, 250 Vac
Contact rating	2A, 30 Vdc
Load	resistive
Minimum load	5Vdc, 10mA
Voltage max	250 Vac (50/60 Hz) 110 Vdc
Isolation voltage	coil-to-contacts: 2000Vac between contacts: 1000Vac
POWER SUPPLY	

	ı
T	ı
Hz)	
2000) (	E
: 2000Vac s: 1000Vac	[

JWEK SUPPLY	
ower supply voltage	20 30 Vdc
everse polarity protection	60 Vdc max.

Isolation voltage				
Input/Output	2000 Vac, 50 Hz, 1min.			
Input/Supply	2000 Vac, 50 Hz, 1min.			
Supply/Output	1500 Vac, 50 Hz, 1min.			
EMC (for industrial ansironments)				

EMC (for industrial environments)				
DIRECTIVE 2004/108/EC				
Immunity	EN 61000-6-2			
Emission	EN 61000-6-4			

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %
HOUSING	

HOUSING				
Material	Self-extinguishing plastic			
Mounting	DIN Rail			
Dimensions (mm)	W x L x H : 120 x 100 x 22.5			
Weight	about 150 g.			

INPUT						
Input type	Min	Max	Span min			
TC (CJC int./ext.)						
J	-200°C	1200°C	2 mV			
K	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
Т	-200°C	400°C	2 mV			
N	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage	Voltage					
mV	-100 mV	+700 mV	2 mV			
Volt	0 mV	10 V	500 mV			
D-4	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
(rvorimiai vaide)	0.5 ΚΩ	50 ΚΩ	10%			
Resistance 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			
Current mA	0 mA	20 mA	2 mA			

Input calibration (1)	
RTD	the higher of ±0.1 % f.s. and ±0.2°C
Res. Low	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$
mV, TC	the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV
Volt	the higher of $\pm 0.1$ % f.s. and $\pm$ 2 mV
mA	the higher of $\pm 0.1$ % f.s. and $\pm$ 6 uA

INPUT				
Input impedance				
TC, mV	>= 10 MΩ			
Volt	>= 1 MΩ			
Current	~ 50 Ω			
Linearity (1)				
TC	± 0.2 % f.s.			
RTD	± 0.1 % f.s			
Line resistance influence (1)				
TC, mV,V	<=0.8 uV/Ohm			
RTD 3 wires	$0.05 \%/\Omega$ (50 $\Omega$ balanced max.)			
RTD 4 wires	$0.005 \%/\Omega$ (100 Ω balanced max.)			
RTD excitation current				
Typical	0.350 mA			
CJC Comp.	± 0.5°C			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
CJC	± 0.01 % / °C			
Response time (10÷90% of f.s.)	about 400 ms			

OUTPUT					
Output type		Min	Max		Span min
Direct voltage		0 V	10 V		1 V
Direct current		0 mA	20 mA		4 mA
Output calibration					
Current	± 7	± 7 uA			
Voltage	± 10 mV				
Output Load Resistance					
Current	< 650 Ω				
Voltage		> 4.7 KΩ			

### DAT 2015 IS DAT 2015 IS/HT



#### **GENERAL DESCRIPTION**

The transmitter DAT 2015 IS is able to execute many functions such as measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected

Moreover the DAT 2015 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, mV, Tc, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



















POWER SUPPLY TEMPERATURE & HUMIDITY			EX DATA		
		Operative temperature	-20°C +70°C	Output /supply	Input
Power supply voltage	11 30 Vdc		-20°C +85°C (vers. 'HT')	Ui = 30 V	Uo = 6.2 V
Reverse polarity	(0)//	Storage temperature	-40°C +85°C	Ii = 100 mA	Io = 100 mA
protection	60 Vdc max.	Humidity (not condensed)	0 90 %	Pi = 0.75 W	Po = 500 mW
EMC (for industrial environments)		HOUSING		Li = 0.1 mH	Lo = 3.6 mH
<b>DIRECTIVE 2004/108/E</b> 0	•	Material	Self-extinguishing plastic	Ci = 10 nF	
Immunity EN 61000-6-2		Dimensions (mm)	W x L x H : 90 x 112 x 12.5	T6:-20 ÷ +55°C T5:-20 ÷ +70°C	
Emission	EN 61000-6-4	Weight	about 90 g.	T4:-20 ÷ +85°C (vers. 'HT')	

INPUT						
Input type	Min	Max	Span min			
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
K	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
Т	-200°C	400°C	2 mV			
N	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage						
mV	-100 mV	+700 mV	2 mV			
	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	200 Ω 500 Ω				
	0.5 ΚΩ	2 ΚΩ	10%			
RES. 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			

INPUT				
Input calibration (1)				
RTD	the higher of ±0.1 % f.s. and ±0.2 °C			
Res. Low	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$			
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$			
mV, TC	the higher of ±0.1 % f.s. and ±10 uV			
Input impedance				
TC, mV	>= 10 MΩ			
Linearity (1)				
TC	± 0.2 % f.s.			
RTD	± 0.1 % f.s			
Line resistance influence (1)				
TC, mV,V	<=0.4 uV/Ohm			
RTD 3-wires	$0.05 \%/\Omega$ (50 $\Omega$ balanced max.)			
RTD 4-wires	$0.005~\%/\Omega$ (100 $\Omega$ balanced max.)			
RTD excitation current				
Typical	0.350 mA			
CJC comp.	± 0.5 °C			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
CJC	± 0.01 % / °C			
Burn-out values				
Max. output value	about 22.5 mA			
Min. output value	about 3.6 mA			
Response time (10÷90% of f.s.)	about 400 ms			
1) referred to input Span (difference between max, and min, values)				

OUTPUT					
Output type	Min	Max	Span min		
Direct current	4 mA	20 mA	4 mA		
Reverse current	20 mA	4 mA	4 mA		
Output calibration					
Current	± 7 uA				

#### UNIVERSAL INTRINSICALLY SAFE ISOLATED TRANSMITTER

#### **DAT 4035 IS DAT 4035 IS/HT**



**POWER SUPPLY** 

Reverse polarity

protection

**Immunity** 

**Emission** 

Power supply voltage

#### **GENERAL DESCRIPTION**

The isolated transmitter DAT 4035 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4035 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

**Application areas** 

about 90 g.

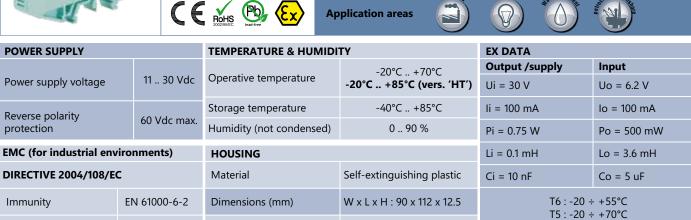
#### **FEATURES**

- Configurable input for RTD, mV, Tc, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- Galvanic isolation at 2000 Vac
- On-field reconfigurable

Weight

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

T4: -20 ÷ +85°C (vers. 'HT')



INPUT						
Min	Max	Span min				
TC CJC int./ext.						
-200°C	1200°C	2 mV				
-200°C	1370°C	2 mV				
-50°C	1760°C	2 mV				
-50°C	1760°C	2 mV				
400°C	1820°C	2 mV				
-200°C	1000°C	2 mV				
-200°C	400°C	2 mV				
-200°C	1300°C	2 mV				
RTD 2,3,4 wires						
-200°C	850°C	50°C				
-200°C	200°C	50°C				
-60°C	180°C	50°C				
-60°C	150°C	50°C				
-100 mV	+700 mV	2 mV				
0 Ω	200 Ω	10%				
200 Ω	500 Ω	10%				
0.5 ΚΩ	2 ΚΩ	10%				
RES. 2,3,4 wires						
0 Ω	300 Ω	10 Ω				
0 Ω	2000 Ω	200 Ω				
	-200°C -200°C -50°C -50°C 400°C -200°C -200°C -200°C -200°C -60°C -60°C -100 mV 0 Ω 200 Ω 0.5 ΚΩ	-200°C 1200°C -200°C 1370°C -50°C 1760°C -50°C 1760°C 400°C 1820°C -200°C 1000°C -200°C 400°C -200°C 1300°C  -200°C 200°C -60°C 180°C -60°C 150°C  -100 mV +700 mV 0 Ω 200 Ω 200 Ω 500 Ω 0.5 ΚΩ 2 ΚΩ				

EN 61000-6-4

INPUT			
Input calibration (1)			
RTD	the higher of ±0.1 % f.s. and ±0.2 °C		
Res. Low	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$		
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$		
mV, TC	the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV		
Input impedance			
TC, mV	>= 10 MΩ		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence (1)			
TC	<=0.8 uV/Ohm		
RTD 3-wires	$0.05 \%/\Omega$ (50 $\Omega$ balanced max.)		
RTD 4-wires	$0.005$ %/ $\Omega$ (100 $\Omega$ balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC comp.	± 0.5 °C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Burn-out values			
Max. output value	about 22.5 mA		
Min. output value	about 3.6 mA		
Response time (10÷90% of f.s.)	about 400 ms		
(1) referred to input Span (difference between max. and min. values)			

ОИТРИТ					
Output type	Min	Max	Span min		
Direct current	4 mA	20 mA	4 mA		
Reverse current	20 mA	4 mA	4 mA		
Output calibration					
Current	± 7 uA				

#### SIGNAL CONVERTER WITH TRIP AMPLIFIER FOR HAZARDOUS AREA SENSORS

#### **DAT 4235 IS**



#### **GENERAL DESCRIPTION**

The DAT 4235 IS device is a galvanic isolated Intrinsically Safety Barrier, defined as "Associated Apparatus".

The input measures mV, V, mA or resistance signals, and can be directly connected to Thermocouple, RTD or potentiometer sensors. The input signal is filtered, linearized, amplified and transfered to the output circuit, that converts it in a 0-10V range or 0-20mA range

#### **FEATURES**

- Configurable input Tc, RTD, Res, mV, V, mA, Potentiometer
- High accuracy
- Configurable by PC
- 0 to 10V, 0 to 20mA configurable output
- 2000 Vac galvanic isolation between input and output
- Programming of the unit measure as °C / °F
- EMC compliance CE mark
- PROTECTION MODE: II (1) G D [ Ex ia ] IIC [ Ex iaD] in according to the Directive ATEX 94/9/EC

- Suitable for DIN rail mounting in according to EN-50022

#### Available in 3 different versions:

- DAT4235 IS A Signal converter DAT4235 IS B Double trip amplifier
- DAT4235 IS C Signal converter + Double trip amplifier





**ISOLATION** 





**Application areas** 









TRIP ALARMS				
Output type	n° 2 Relays SPDT			
Contact	2A , 250 Vac			
rating	2A , 30 Vdc			
Load	resistive			
Minimum load	5Vdc, 10mA			
Max Voltage	250 Vac (50/60 Hz) 110 Vdc			
Isolation	ation coil-to-contacts: 2000Vac between contacts: 1000Vac			
POWER SUPPLY				

Power supply voltage	20 30 Vdc
Reverse polarity protection	60 Vdc max

DIRECTIVE 2004/108/EC			
EMC (for industrial environments)			
Supply/Output	1500 Vac, 50 Hz, 1min.		
Input/Supply	2000 Vac, 50 Hz, 1min.		
Input/Output	2000 Vac, 50 Hz, 1min.		

EMC (for industrial environments)			
DIRECTIVE 2004/1	08/EC		
Immunity	EN 61000-6-2		
Emission	EN 61000-6-4		

	44.		
Operative temperature		-20°C +60°C	
Humidity (not condensed)		0 90 %	
HOUSING			
		lf-extinguish astic	
Mounting DII		N Rail	
Dimensions	120 x 100 x 22.5		
Weight	ab	out 150 g.	

<b>TEMPERATURE &amp; HUMIDITY</b>		EX DATA		
Operative		-20°C +60°C	Terminals A-B-C-D; E-F-G-H-I-J; K-L Um=250V	
temperature			Terminals	Terminals
Humidity (no	.+		1-2-3-4-5-6-7	5-6-7
Humidity (not condensed)		0 90 %	Uo = 7.8 V	Uo = 30 V
HOUSING		Io = 32 mA	li = 100 mA	
Material	Se	lf-extinguish	Po = 140 mW	Pi = 0.75W
Waterial	pla	astic	Lo = 20 mH	Li = ~0 mH
Mounting	DII	N Rail	20 20 11111	2. 0
Dimensions	12	0 x 100 x 22.5	Co = 2 uF	Ci = 24 nF
Weight	about 150 g.		Ta:-20 ÷ +55°C	

INPUT						
Input type		Min	Max	Span min		
TC CJC int./ext.						
J	-2	00°C	1200°C	2 mV		
K	-2	00°C	1370°C	2 mV		
S	-	50°C	1760°C	2 mV		
R	-	50°C	1760°C	2 mV		
В	40	00°C	1820°C	2 mV		
E	-2	00°C	1000°C	2 mV		
T	-2	00°C	400°C	2 mV		
N	-2	00°C	1300°C	2 mV		
RTD 2,3,4 wires						
Pt100	-2	00°C	850°C	50°C		
Pt1000	-2	00°C	200°C	50°C		
Ni100	-6	60°C	180°C	50°C		
Ni1000	-6	60°C	150°C	50°C		
Voltage						
mV	-10	00 mV	+700 mV	2 mV		
V	(	) V	10 V	500 mV		
Current mA	(	) mA	20 mA	2 mA		
5		0 Ω	200 Ω	10%		
Potentiometer (Nominal value)	20	00 Ω	500 Ω	10%		
(Norminal Value)	0.5	5 ΚΩ	2 ΚΩ	10%		
Resistance						
Low	(	) Ω	300 Ω	10 Ω		
High	(	) Ω	2000 Ω	200 Ω		
Input calibration (1)						
RTD		the high	ner of ±0.1 % f.s. and ±0.2 °C			
Res. Low	the high		er of ±0.1 % f.s. and ±0.15 Ω			

the higher of  $\pm 0.2$  % f.s. and  $\pm 1\,\Omega$ 

the higher of ±0.1 % f.s. and ±10 uV the higher of  $\pm 0.2$  % f.s. and  $\pm 2$   $\Omega$ the higher of  $\pm 0.1$  % f.s. and  $\pm 6$  uV

INPUT				
Input impedance				
TC, mV	>= 10 MΩ			
V	>= 1 MΩ			
mA	<= 50 Ω			
Linearity				
TC	± 0.2 % f.s.			
RTD	± 0.1 % f.s			
Line resistance influence				
TC, mV,V	<=0.8 uV/Ohm			
RTD 3-wires	$0.05 \%/\Omega$ (50 $\Omega$ balanced max.)			
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)			
RTD excitation current				
Typical	0.350 mA			
CJC comp.	± 0.5°C			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
CJC	± 0.01 % / °C			
Response time (10÷90% of f.s.) about 0.4 sec.				
1) waterward to inner the Connect (difference to be to conseque to the consequence)				

(1) referred to input Span (difference between max. and min. values)

ОЦТРИТ					
Output type	Min	Max	Span min		
Voltage	0 V	10 V	1 V		
Current	0 mA	20 mA	4 mA		
Output calibration					
Current	± 7 uA				
Voltage	± 10 mV				
Output Rload resistance					
Current	< 650 Ω				
Voltage	> 4.7 KΩ				

Res. High

mV, TC

mΑ

#### **CURRENT LOOP REPEATER / SUPPLY FOR HAZARDOUS AREA SENSORS**

#### **DAT 5030 IS**



#### **GENERAL DESCRIPTION**

The DAT 5030 IS device is a galvanic isolated Intrinsically Safety Barrier, defined as "Associated Apparatus"

The input can measure 0-20 mA or 4-20 mA current loops, both active or passive mode; auxiliary power supply is available to supply the current loop through the hazardous area (ZONE 0).

The measure is converted in output as voltage signal (0-10V or 2-10V) or current signal (0-20mA or 4-20mA). Auxiliary power supply is available to supply the current loop connected to the output.

#### **FEATURES**

- 0-20mA or 4-20mA active or passive configurable input
   0-10V, 2-10V, 0-20mA, 4-20mA configurable output
   Configurable by DIP switch
- Single or Double Channel
- HART Compatible on request
- Galvanic isolation on all ways
- Power supply for current loop in hazardous area (ZONE 0)
- EMC compliance CE Mark

- PROTECTION MODE: II (1) G D [ Ex ia ] IIC [ Ex iaD ] according to the Directive ATEX 94/9/EC
- Din Rail mounting suitable in according to EN-50022

#### Available in 4 different versions:

- DAT5030 IS A Single channel
- DAT5030 IS B Double channel
- DAT5030 IS AH Single channel HART compatible
- DAT5030 IS BH Double channel HART compatible









**Application areas** 









POWER SUPPLY TEMPERATURE & HUMIDITY			HOUSING			
Power supply voltage	20 ÷ 30 Vdc	Operating tempera	Operating temperature		Material	Self-extinguish plastic
Current consumption	80 mA per channel with Vaux operating		Storage temperature		Mounting	DIN Rail
Reverse polarity protecti	on 60 Vdc max.	Relative humidity (not condensed)	,		Dimensions (mm)	120 x 100 x 22.5
ISOLATION		EMC (for industria	EMC (for industrial environments)		WEIGHT	
Input/Output	2000 Vac @ 50 Hz, 1min.	DIRECTIVE 2004/1	DIRECTIVE 2004/108/EC		Cinala CII	alagust 100 a
Input/Supply	2000 Vac @ 50 Hz, 1min.	I	Thi (4000 ( 0		Single CH	about 100 g.
Supply/Output	1500 Vac @ 50 Hz, 1min.	Immunity EN 61000-6-2		•	D 11 611	1 1460
Between channels	2000 Vac @ 50 Hz, 1min.	Emission	Emission EN 61000-6-4		Double CH	about 160 g.

INPUT			
Input signal	Active or passive current loop		
Range			
Configurable	0÷20 mA , 4÷20 mA		
Zero regulation	± 5 %		
Span regulation	± 5 %		
Auxiliary Supply	> 15V @ 20mA		
Input impedance	< 25 Ω		

OUTPUT			
Output signal			
Configurable	4÷20 mA, 0÷20 mA, 0÷10 V and 2÷10 V		
Output Rload resistance			
Voltage	> 5 KΩ		
Current	< 500 Ω		
Auxiliary Supply	> 12V @ 20mA		

PERFORMANCES				
Calibration error	± 0.1 % of f.s.			
Linearity error (*)	± 0.2 % of f.s.			
Thermal drift	0.02 % of Full scale/°C			
Response time (10÷90% of f.s.)	< 0.2 sec.			
Frequency response (HART Protocol)	bidirectional 0.5 ÷ 4 Khz @ 3dB			

(\*) = inclusive of hysteresis, power supply variation and linearisation error.

EX DATA				
Terminals J-I; A-B-C-D; O-P-Q-R Um=250V				
Terminals 4-6; 14-16;				
Uo = 26.4 V		Ui = 30 V		
Io = 93 mA	li = 100 mA			
Po = 615 mW Pi = 0.75W				
Lo = 4.2 mH		Li = ~0 mH		
Co = 75 nF				
Terminals 6-5: 16-15:				

Terminals 6-5; 16-15;				
Uo = 1.2 V	Ui = 30 V			
Io = 46 mA	Ii = 100 mA			
Po = 14 mW	Pi = 0.75W			
	Li = ~0 mH			
	Ci = 12 nF			

Ta:-20 ÷ +60°C

### DAT 1010 IS DAT 1010 IS/HT



#### **GENERAL DESCRIPTION**

The transmitter DAT 1010 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, mV, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F EMC complaint CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN B in-head mounting









**Application areas** 









POWER SUPPLY TEMPERATURE & HUMIDITY			EX DATA		
			-20°C +70°C	Output /supply	Input
Power supply voltage	11 30 Vdc	Operative temperature	-20°C +85°C (vers. 'HT')	Ui = 30 V	Uo = 6.2 V
Reverse polarity	(0)//	Storage temperature	-40°C +85°C	Ii = 100 mA	Io = 100 mA
protection 60 Vdc max.		Humidity (not condensed)	0 90 %	Pi = 0.75 W	Po = 500 mW
EMC (for industrial environments)		HOUSING		Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Material Self-extinguishing plastic		Ci = 10 nF	Co = 5 uF
Immunity EN 61000-6-2 Emission EN 61000-6-4		Dimensions	Ø= 43 mm; H = 24 mm		. 55°C
		Weight	about 50 g.	T5:-20 ÷ +70°C	
		Mounting	DIN B head or bigger	T4:-20 ÷ +85°	C (vers. 'HT')

INPUT						
Input type	ı	Min	Max	Span min		
RTD 2,3,4 wires						
Pt100	-20	00°C	850°C	50°C		
Pt1000	-20	00°C	200°C	50°C		
Ni100	-6	0°C	180°C	50°C		
Ni1000	-6	o°C	150°C	50°C		
Voltage						
mV	-10	00 mV	+700 mV	2 mV		
		0 Ω	200 Ω	10%		
Potentiometer (Nominal value)	200 Ω		500 Ω	10%		
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.5 ΚΩ		2 ΚΩ	10%		
RES. 2,3,4 wires						
Low	C	Ω (	300 Ω	10 Ω		
High	C	) Ω	2000 Ω	200 Ω		
Input calibration (1)						
RTD		the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C				
Res. Low		the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$				
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$					
mV		the higher of ±0.1 % f.s. and ±10 uV				
Input impedance						
mV	>= 10 M	Ω				
Linearity (1)						
RTD		± 0.1 %	f.s			

INPUT				
Line resistance influence (1)				
mV	<=0.8 uV/Ohm			
RTD 3-wires	$0.05~\%/\Omega$ (50 $\Omega$ balanced max.)			
RTD 4-wires	$0.005~\%/\Omega$ (100 $\Omega$ balanced max.)			
RTD excitation current				
Typical	0.350 mA			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
Burn-out values				
Max. output value	about 22.5 mA			
Min. output value	about 3.6 mA			
Response time (10÷90% of f.s.)	about 400 ms			

ОUТРUТ						
Output type	Min	Max	Span min			
Direct current	4 mA	20 mA	4 mA			
Reverse current	20 mA	4 mA	4 mA			
Output calibration						
Current	± 7 uA					

#### INTRINSICALLY SAFE PC CONFIGURABLE TRANSMITTER FOR UNIVERSAL INPUT

### **DAT 1015 IS DAT 1015 IS/HT**



#### **GENERAL DESCRIPTION**

The transmitter DAT 1015 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. Moreover the DAT 1015 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, mV, TC, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- $4 \div 20$  mA configurable output on current loop
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN B in-head mounting









**Application areas** 









POWER SUPPLY		TEMPERATURE & HUMIDI	тү	EX DATA	
		Operative temperature	-20°C +70°C	Output /supply	Input
Power supply voltage	Power supply voltage 11 30 Vdc			Ui = 30 V	Uo = 6.2 V
Reverse polarity	(0)//	Storage temperature	-40°C +85°C	li = 100 mA	Io = 100 mA
protection	60 Vdc max.	Humidity (not condensed)	0 90 %	Pi = 0.75 W	Po = 500 mW
EMC (for industrial environments)		HOUSING		Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Ci = 10 nF	Co = 5 uF
Immunity	EN 61000-6-2	Dimensions	Ø= 43 mm ; H = 24 mm	T6:-20 ÷ +55°C	
Immunity	EN 61000-6-2		about 50 g.	T5 : -20 ÷ +70°C	
Emission EN 61000-6-4		Mounting	DIN B head or bigger	T4:-20 ÷ +85	°C (vers. 'HT')

INPUT				
Input type	Min		Max	Span min
TC CJC int./ext.				
J	-20	00°C	1200°C	2 mV
K	-200°C		1370°C	2 mV
S	-!	50°C	1760°C	2 mV
R	-!	50°C	1760°C	2 mV
В	4(	00°C	1820°C	2 mV
E	-20	00°C	1000°C	2 mV
Т	-20	00°C	400°C	2 mV
N	-200°C		1300°C	2 mV
RTD 2,3,4 wires				
Pt100	-200°C		850°C	50°C
Pt1000	-200°C		200°C	50°C
Ni100	-60°C		180°C	50°C
Ni1000	-60°C		150°C	50°C
Voltage				
mV	-100 mV		+700 mV	2 mV
	0 Ω		200 Ω	10%
Potentiometer (Nominal value)	200 Ω		500 Ω	10%
(rrammar rande)	0.5 ΚΩ		2 ΚΩ	10%
Resistance				
Low	C	) Ω	300 Ω	10 Ω
High	0 Ω		2000 Ω	200 Ω
Input calibration (1)				
RTD		the higher of ±0.1 % f.s. and ±0.2 °C		
Res. Low		the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$		
Res. High		the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$		
mV, TC		the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV		

INPUT		
Input impedance		
TC, mV	>= 10 MΩ	
Linearity (1)		
TC	± 0.2 % f.s.	
RTD	± 0.1 % f.s	
Line resistance influence		
TC, mV	<=0.8 uV/Ohm	
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)	
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)	
RTD excitation current		
Typical	0.350 mA	
CJC comp.	± 0.5 °C	
Thermal drift (1)		
Full scale	± 0.01 % / °C	
CJC	± 0.01 % / °C	
Burn-out values		
Max. output value	about 22.5 mA	
Min. output value	about 3.6 mA	
Response time (10÷90% of f.s.)	about 400 ms	

OUTPUT			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	4 mA
Reverse current	20 mA	4 mA	4 mA
Output calibration			
Current	± 7 uA		



### DAT 1065 IS DAT 1065 IS/HT



#### **GENERAL DESCRIPTION**

The isolated transmitter DAT 1065 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentio-

meter connected on its input.

Moreover the DAT 1065 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, mV, TC, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- Galvanic isolation at 2000 Vac
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN B in-head mounting









**Application areas** 









POWER SUPPLY		TEMPERATURE & HUMIDI	ТҮ	EX DATA	
Power supply voltage	11 30 Vdc		-20°C +70°C	Output /supply	Input
Reverse polarity protection	n 60 Vdc max.	Operative temperature	-20°C +85°C (vers. 'HT')	Ui = 30 V	Uo = 6.2 V
ISOLATION		Storage temperature	-40°C +85°C	li = 100 mA	Io = 100 mA
Input - Output/Power supply	2000 Vac, 50 Hz,1 min.	Humidity (not condensed)	0 90 % Pi = 0.75 W		Po = 500 mW
EMC (for industrial envi	ronments)	HOUSING		Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Ci = 10 nF	Co = 5 uF
	EN (1000 ( 2	Mounting	DIN B head or bigger	T/ . 20 .	. 5500
Immunity	EN 61000-6-2	Dimensions (mm)	Ø = 43 mm ; H = 24 mm	T6:-20 ÷ +55°C T5:-20 ÷ +70°C	
Emission	EN 61000-6-4	Weight	about 90 g.	T4:-20 ÷ +85°	C (vers. 'HT')

INPUT					
Input type	Min	Max	Span min		
TC CJC int./ext.					
J	-200°C	1200°C	2 mV		
K	-200°C	1370°C	2 mV		
S	-50°C	1760°C	2 mV		
R	-50°C	1760°C	2 mV		
В	400°C	1820°C	2 mV		
E	-200°C	1000°C	2 mV		
Т	-200°C	400°C	2 mV		
N	-200°C	1300°C	2 mV		
RTD 2,3,4 wires					
Pt100	-200°C	850°C	50°C		
Pt1000	-200°C	200°C	50°C		
Ni100	-60°C	180°C	50°C		
Ni1000	-60°C	150°C	50°C		
Voltage					
mV	-100 mV	+700 mV	2 mV		
	0 Ω	200 Ω	10%		
Potentiometer (Nominal value)	200 Ω	500 Ω	10%		
-	0.5 ΚΩ	2 ΚΩ	10%		
RES. 2,3,4 wires					
Low	0 Ω	300 Ω	10 Ω		
High	0 Ω	2000 Ω	200 Ω		
Input calibration (1)					
RTD	the higher of ±	the higher of ±0.1 % f.s. and ±0.2°C			
Res. Low	the higher of ±	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$			
Res. High	the higher of $\pm 0.2$ % f.s. and $\pm 1$ $\Omega$				
mV, TC	the higher of ±0.1 % f.s. and ±10 uV				

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV	<=0.4 uV/Ohm
RTD 3-wires	$0.05~\%/\Omega$ (50 $\Omega$ balanced max.)
RTD 4-wires	$0.005~\%/\Omega$ (100 $\Omega$ balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC comp.	± 0.5 °C
Thermal drift (1)	
Full scale	± 0.01 % / °C
CJC	± 0.01 % / °C
Burn-out values	
Max. output value	about 22.5 mA
Min. output value	about 3.6 mA
Response time (10÷90% of f.s.)	about 400 ms

OUTPUT				
Output type		Min	Max	Span min
Direct current		4 mA	20 mA	4 mA
Reverse current		20 mA	4 mA	4 mA
Output calibration				
Current		± 7 uA		



#### **GENERAL DESCRIPTION**

The transmitter DAT 2065 is designed to provide on its output a linearised  $4 \div 20$  mA current loop signal proportional with the temperature characteristic of the Pt100 sensor connected on its input.

It is possible to connect on the input both 3 wires and 2 wires Pt100.

#### **FEATURES**

- Configurable Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
- 4 to 20 mA linearised output on current loop
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 









about 300 ms

Power supply voltage	10 30 Vdc
Rever. polarity protection	60 Vdc max

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

DIRECTIVE	. 2004 / 100 / LC			
Immunity	EN 61000-6-2			
Emission	EN 61000-6-4			
HOUSING				
Material	Self-extinguishing plastic			
Dim. (mm)	W x L x H : 90 x 112 x 12.5			
Weight	about 80 g.			

#### INPUT (RTD) Input type Min Max Span min Pt100 (2-3 wires) -50°C 650°C 50°C

OUTPUT			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	-
Min. input value programmability			
Programmable -50 ÷ 50 °C			
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			
RTD sensor excitation current			
Тур.		0.6 mA	
Thermal drift (1)			

± 0.02 % / °C

Linearity error (*)	
± 0.15 % of f.s.	
Burn-out values	
Max. value output	>20 mA
Line resistance influence (1)	
0.05 % f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)	

(1) = referred to the input Span (difference between max. and min.)

Response time (10÷90% of f.s.)

(\*) = inclusive of hysteresis, power supply variation and linearisation error.

#### **DOUBLE CHANNEL DIP SWITCH CONFIGURABLE TRANSMITTER FOR PT100**

# **DAT 2066**

#### **GENERAL DESCRIPTION**

Full Scale

The double channel transmitter DAT 2066 is designed to provide on the output two linearised  $4 \div 20$  mA current loop signals proportional with the temperature characteristics of the Pt100 sensors connected on its inputs. It is possible to connect on the input both 3 wire Pt100 and 2 wire Pt100.

#### **FEATURES**

- Configurable double Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
- 4 to 20 mA linearised double output on current loop
- 1000 Vac isolation among the channels
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











#### **POWER SUPPLY**

TEMPERATURE & HUMIDITY		
Rever. polarity protection	60 Vdc max	
Power supply voltage	10 30 Vac	

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

EN 61000-6-2		
EN 61000-6-4		
HOUSING		
Self-extinguishing plastic		
W x L x H : 90 x 112 x 12.5		

about 80 g.

#### INPUT (RTD) Input type Min Max Span min Pt100 (2-3 wires) -50°C 650°C 50°C

OUTPUT			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	-
Min. input value	e programr	nability	
Programmable		-50 ÷ 50 °C	
Input Calibratio	n (1)		
the higher of ± 0.1	% f.s. and 0.2	2 °C	
RTD sensor exci	tation curr	ent	
Тур.		0.6 mA	
Thermal drift (1)			
Full Scale		± 0.02 % / °C	
		•	

#### Linearity error (\*) ± 0.15 % of f.s. **Burn-out values**

>20 mA Max. value output

Line resistance influence (1)

0.05 % f.s. /  $\Omega$  (100  $\Omega$  max balanced for wire)

Response time (10÷90% of f.s.) about 300 ms

(1) = referred to the input Span (difference between max. and min.)

(\*) = inclusive of hysteresis, power supply variation and linearisation error.

Weight

#### **DIP SWITCH CONFIGURABLE CONVERTER FOR PT100**



#### **GENERAL DESCRIPTION**

The converter DAT 2165 is designed to provide on its output a linearised voltage or current signal proportional with the temperature characteristic of the Pt100 sensor connected on its input. It is possible to connect on the input both 3 wires and 2 wires Pt100.

#### **FEATURES**

- Configurable Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
- Linearised voltage or current output
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035



**OUTPUT** 





#### **Application areas**









POWER SUPPLY			
Power supply voltage	18 30 Vdc		
Rever. polarity protect	tion 60 Vdc max		
CURRENT CONSUMPTION			
Current output	40 mA max.		

Voltage output	10 mA max.		
TEMPERATURE & HUMIDITY			

Operative temperature	-20°C +70°
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

<b>EMC</b> (for industrial environments)
--

#### **DIRECTIVE 2004 / 108 / EC**

Immunity EN 61000-6-2

Weight

EIIIISSIOII	EIN 61000-6-4		
HOUSING			
Material	Self-extinguishing plastic		
Dim. (mm)	W x L x H : 90 x 112 x 12.5		

about 80 g.

ENI 61000 6 /

INPUT (RTD)			
Input type	Min	Max	Span min
Pt100 (2-3 wires)	-50°C	650°C	50°C

Output type	Min	Max	Span min
Direct current	0 mA	20 mA	-
Direct Voltage	0 V	10 V	-
Min. input value programmability			
Programmable -50 ÷ 50 °C			
Input Calibratio	n (1)		
the higher of ± 0.1 % f.s. and 0.2 °C			
RTD sensor excitation current			
Тур.		0.6 mA	
Thermal drift (1)	)		
Full Scale ± 0.02 % / °C			

Linearity error (*)		
± 0.15 % of f.s.		
Burn-out values		
Max. value output	>20 mA or > 10 Vdc	
Line resistance influence (1)		
$0.05~\%$ f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)		
	<u> </u>	

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

Response time (10÷90% of f.s.) about 300 ms

#### **DOUBLE CHANNEL DIP SWITCH CONFIGURABLE CONVERTER FOR PT100**



#### **GENERAL DESCRIPTION**

The double channel converter DAT 2166 is designed to provide on the output two linearised voltage or current signals proportional with the temperature characteristics of the Pt100 sensors connected on its inputs. It is possible to connect on the input both 3 wire and 2 wire Pt100.

#### **FEATURES**

- Configurable double Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
- Linearised double voltage or current output
- 1000 Vac isolation among the channels
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035



Full Scale



**Application areas** 





Linearity error (\*)







#### **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION** (for each channel)

Current output	40 mA max.
Voltage output	15 mA max.

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### **HOUSING**

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 80 g.

#### INPUT (RTD) Input type Min Max Span min Pt100 (2-3 wires) -50°C 650°C 50°C

ОИТРИТ			
Output type	Min	Max	Span min
Direct current	0 mA	20 mA	-
Direct Voltage	0 V	10 V	-
Min. input value programmability			
Programmable		-50 ÷ 50 °C	
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			
RTD sensor excitation current			
Тур.		0.6 mA	
Thermal drift (1)			

± 0.02 % / °C

± 0.15 % of f.s.	
Burn-out values	
Max. value output	>20 mA or > 10 Vdc
Line resistance influence (1)	
$0.05~\%$ f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)	
Response time (10÷90% of f.s.)	about 300 ms

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

**DAT 2061** 

#### GENERAL DESCRIPTION

The converter DAT 2061 is designed to provide on its output a linearised voltage or current signal proportional with the temperature characteristic of the Pt100 sensor connected on its input.

It is possible to connect on the input both 3 wires and 2 wires Pt100.

#### **FEATURES**

- Input for RTD type Pt100
- Unit of measure configurable in °C or °F
- Zero and Span values configurable by DIP-switches
- Voltage or current output
- Output values configurable by DIP-switches
- Galvanic isolation at 2000 Vac between input / output and power supply

**ISOLATED DIP SWITCH CONFIGURABLE CONVERTER FOR PT100** 

- Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 









Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	60 mA max.
Voltage output	40 mA max.

#### **ISOLATION**

2000 Vac, 50 Hz, 1 min.

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°
Storage temperature	-40°C +85°
Humidity (not condensed)	090%

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

mmunity	EN 61000-6-2
mission	EN 61000-6-4

#### **HOUSING**

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 80 g.

#### **INPUT (RTD)** Input type Min Max Span min Pt100 (2-3 wires) -50°C 650°C 50°C

001701			
Output type	Min	Max	Span min
Direct current 0 mA		20 mA	-
Direct Voltage 0 V		10 V	-
Min. input value programmability			
Programmable -50 ÷ 50 °C			
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			

Direct Voltage	0 V	10 V	-
Min. input value	programn	nability	
Programmable		-50 ÷ 50 °C	
Input Calibratio	n (1)		
the higher of ± 0.1 % f.s. and 0.2 °C			
RTD sensor excitation current			
Typ. 0.6 mA			
Thermal drift (1)			
Full Scale		± 0.02 % / °C	-

Linearity error (*)		
± 0.15 % of f.s.		
Burn-out values		
Max. value output	>20 mA or > 10 Vdc	
Line resistance influence (1)		
0.05 % f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)		
Response time (10÷90% of f.s.) about 500 ms		

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

#### NOT LINEARIZED DIP SWITCH CONFIGURABLE TRANSMITTER FOR THERMOCOUPLE

#### **GENERAL DESCRIPTION**

The transmitter DAT 2045 is designed to provide on its output a  $4 \div 20$  mA current loop signal linear and proportional with the value of voltage generated from the thermocouple connected to its input.

The DAT 2045 doesn't execute the linearisation of the input signal; this feature allows to use the transmitter with acquisition systems with an internal linearisation software.

- Configurable Input for thermocouples type K, J, R, S and T
- Good accuracy and performance stability
- Configurable by DIP-switches
- 4 to 20 mA "voltage linear" output on current loop
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035







**Application areas** 











#### **POWER SUPPLY** Power supply voltage

never polarity protection	oo vac max	
TEMPERATURE & HUMIDITY		
Operative temperature -20°C +70		
Storago		

r polarity protection 60 Vdc ma

10 .. 30 Vdc

-40°C .. +85°C temperature Humidity (not condensed) 0 .. 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	About 90 a.

INPUT (TC)			
Input type	Min	Max	Span min
J	-50°C	950°C	100°C
К	-50°C	1370°C	100°C
S	-50°C	1760°C	700°C
R	-50°C	1760°C	700°C
Т	-50°C	450°C	100°C

OUTPUT			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	-
Min. input value programmability			
Programmable -50 ÷ 50 °C			
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			
<b>CJC compensation</b> ± 0.5°C			

Thermal drift (1)	
Full Scale	± 0.02 % / °C
Linearity error (*)	
± 0.05 % of f.s.	
Burn-out values	
Max. value output	>20 mA
Input Impedance	
10.140	

Line resistance influence (1)

Response time (10÷90% of f.s.) about 500 ms

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

#### NOT LINEARIZED DIP SWITCH CONFIGURABLE CONVERTER FOR THERMOCOUPLE



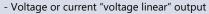
#### GENERAL DESCRIPTION

The converter DAT 2145 is designed to provide on its output a voltage or current signal linear and proportional with the value of voltage generated from the thermocouple connected to its input.

The DAT 2145 doesn't execute the linearisation of the input signal; this feature allows to use the converter with acquisition systems with an internal linearisation software.

#### **FEATURES**

- Configurable Input for thermocouples type K, J, R, S and T
- Good accuracy and performance stability
- Configurable by DIP-switches



- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035







#### **Application areas**









POWER SUPPLY				
Power supply voltage		18 30 Vdc		
Rever. polari	Rever. polarity protection		60 Vdc max	
<b>CURRENT</b>	CONSU	MP1	ΓΙΟΝ	
Current outp	out	40 r	mA max.	
Voltage outp	out	10 n	mA max.	
TEMPERAT	TURE &	HUI	MIDITY	
Operative temperature		:	-20°C +70°C	
Storage temperature			-40°C +85°C	
Humidity (not condensed)		ed)	0 90 %	
<b>EMC</b> (for industrial environments)				
DIRECTIVE 2004 / 108 / EC				
Immunity	EN 6100	0-6-2	2	
Emission	EN 61000-6-4			
HOUSING				
Material	Self-extinguishing plastic			
Dim. (mm)	WxLxI	W x L x H : 90 x 112 x 12.5		
Weight	About 90 g.			

INPUT (TC)			
Input type	Min	Max	Span min
J	-50°C	950°C	100°C
K	-50°C	1370°C	100°C
S	-50°C	1760°C	700°C
R	-50°C	1760°C	700°C
Т	-50°C	450°C	100°C

Min 4 mA		Max	Span min
		20 mA	1
0 V		10 V	-
Min. input value programmability			
	-50	÷ 50 °C	
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			
CJC compensation		± 0.5°C	
Thermal drift (1)			
		± 0.02 %	/ °C
	(1) f.s. and 0.2	-50 (1) f.s. and 0.2 °C	-50 ÷ 50 °C (1) f.s. and 0.2 °C h ± 0.5 °C

Linearity error (*)	
± 0.05 % of f.s.	
Burn-out values	
Max. value output	>20 mA or 10 Vdc
Input Impedance	
10 ΜΩ	
Line resistance influence (1)	
0.2 μV / Ω	
Response time (10÷90% of f.s.)	about 500 ms

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

#### **DIP SWITCH CONFIGURABLE 3 WAYS ISOLATED SIGNAL CONVERTER**



#### **GENERAL DESCRIPTION**

The converter DAT 5020 is designed to provide on its output a voltage or current signal proportional with the value of the normalised signal or the potentiometer applied on its input. The user can program the input and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device. The 2000 Vac isolation between input, power supply and output eliminates the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications. On the input side, an auxiliary supply source isolated from the power supply is provided; this allows to connect on input both active and passive current loops.

#### **FEATURES**

- Input for voltage, current and potentiometer signal
- Voltage or current configurable output
- High number of Input / output configuration
- Galvanic isolation at 2000 Vac on the 3 ways
- Isolated power supply source for passive current transmitter on input
- Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











POWER SUPPLY			
Power supply voltage	18 32 Vd		
Rever. polarity protection	60 Vdc ma		
Aux Power Supply	18 Vdc mi		

Aux. Power Supply	@ 20 mA
Current consumption	
Current output with active	Power supply

ISOLATION	
Voltage output	80 mA max.
aux operative input (20 min	<i>)</i> . 110 111 <b>/</b> 111

<b>TEMPERATURE &amp; HUM</b>	IIDITY	
	50 Hz, 1 min	

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### **HOUSING** Material Self-extinguishing plastic Dim. (mm) W x L x H: 90 x 112 x 12.5 Weight about 80 g.

INPUT				
Input type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Voltage	-10 V	10 V	-	
Potentiometer				
(Rnom from				

Max input signal				
IKΩ to 5 KΩ )	0 %	100 %		

30 Vdc or 50 mA	
Input Calibration (1)	
± 0.1 % f.s.	
Linearity (*)	
± 0.15 % f.s.	

	Input Impedance		
Voltage $>/= 1 MΩ$ , Current: $\sim 50 Ω$		>/= 1 M $\Omega$ , Current: ~ 50 $\Omega$	
	Thermal drift (1)	)	
	Full Scale	± 0.02 % / °C	

ОИТРИТ			
Output type	Min	Max	Span min
Current	0 mA	20 mA	-
Voltage	-10 V	10 V	-
Max output sign	nal		

Max output signal	
15 Vdc or 30 mA	

Response time (10÷90% of f.s.) about 500 ms

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis and power supply variation.

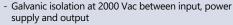


#### GENERAL DESCRIPTION

The converter DAT 5021 is designed to provide on its output a voltage or current signal proportional with the value of the normalised signal applied on its input. The user can program the input and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

#### **FEATURES**

- Input for voltage and current signal
- Input range configurable by DIP-switches
- Isolated power supply source for passive current transmitter on input
- Isolated power supply source for passive loads on output
- Voltage or current output configurable by DIP-switches



- Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 









POWER SUPPLY	
Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min @ 20 mA
Aux. Power Supply IN	18 Vdc @ 20 mA

#### **CURRENT CONSUMPTION** Current output with active Power supply aux operative input (20 mA): 90 mA max. 40 mA max. Voltage output

#### **ISOLATION**

All the ways 2000 Vac, 50 Hz, 1 min

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	About 90 g.

INPUT				
Input type	Min		Max	Span min
Current	0 mA		20 mA	-
Current	4 mA		20 mA	-
	0 V		10 V	-
Voltage	2 V		10 V	-
	0 V		5 V	-
	1 V		5 V	-
Input Calibration		± 0.1 % f.s.		
Linearity (*)		± 0.05 % f.s.		
Thermal drift				
Full Scale		± 0.02 % / °C		
Response time (from 10 to 90 % of f.s.)			< 10 ms	

ОИТРИТ			
Output type	Min	Max	Span min
Current	0 mA	20 mA	-
Current	4 mA	20 mA	-
	0 V	10 V	-
Voltago	2 V	10 V	-
Voltage	0 V	5 V	-
	1 V	5 V	-

	Load resistance	(Pload)			
	Voltage output	(Rioda)	>/=	5 KΩ	
ĺ	Current output		=</td <td>500 Ω</td> <td></td>	500 Ω	

(\*) = inclusive of hysteresis and power supply variation.

#### 4 WAYS ISOLATED DIP SWITCH CONFIGURABLE SIGNAL CONVERTER/SIGNAL SPLITTER

# **DAT 5022**

#### GENERAL DESCRIPTION

The converter DAT 5022 is designed to provide on its output two voltage or current signals proportional with the value of the normalised signal applied on its input. The user can program the input and outputs ranges by the proper DIP-switches available after opening the suitable door located on the side of device.

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

#### **FEATURES**

- Input for voltage and current signal
- Input range configurable by DIP-switches
- Voltage or Current two independent output channels
- Voltage or current outputs configurable by DIP-switches
- Isolated power supply source for passive current transmitter on input
- Isolated power supply source for passive loads on outputs
- Galvanic isolation at 2000 Vac between input, power supply and outputs
- Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035





**Application areas** 











POWER SUPPLY	
Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min @ 20 mA
Aux. Power Supply IN	18 Vdc @ 20 m/

CURRENT CONSUMPTION			
Aux. Power Supply IN	18 Vdc @ 20 mA		
Aux. Power Supply OUT	12 Vdc min @ 20 mA		
Rever. polarity protection	60 Vdc max		

#### Current output with active Power supply aux operative input (20 mA): 120 mA max. 60 mA max. Voltage output

#### **ISOLATION**

2000 Vac, 50 Hz, 1 min All the ways

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	About 90 g.

INPUT				
Input type	Min		Max	Span min
Current	0 mA		20 mA	-
Current	4 mA		20 mA	-
Voltage	0 V		10 V	-
	2 V		10 V	-
	0 V		5 V	-
	1 V		5 V	-
Input Calibration ± 0.1 % f.s.				
<b>Linearity</b> (*) ± 0.05 % f.s.				
Thermal drift				
Full Scale		± (	0.02 % / °C	
Response time (from 10 to 90 % of f.s.) < 10 ms			< 10 ms	

OUTPUT (2 CHANNELS)				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Current	4 mA	20 mA	-	
	0 V	10 V	-	
Voltage	2 V	10 V	-	
Voitage	0 V	5 V	-	
	1 V	5 V	-	
Load resistance (Rload)				
Voltage output	>	/= 5 KΩ		
Current output	<	/= 500 Ω		

(\*) = inclusive of hysteresis and power supply variation.

#### DIP SWITCH CONFIGURABLE CONVERTER FOR AC CURRENT SIGNAL

# DAT 5023lac



The converter DAT 5023Iac is designed to detect the TRMS value of the AC current signal from 0÷5 A to 0÷60 A applied on its input providing a voltage or current output signal. The user can program the input and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device. The 2000 Vac isolation between power supply and output eliminates the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications.

The measure of the input signal is executed by a cross connector and a Hall effect transducer; this allows to isolate the input side from the output and power supply

output and power supply.

#### **FEATURES**

- Input for AC current signal
- Build-in cross connector (8mm diameter)
- Measure by Hall effect transducer
- True Root Mean Square (TRMS) measure
- Galvanic isolation at 2000 Vac

- Isolated power supply source for passive loads on output Independent zero and full scale regulations
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035







#### **Application areas**











POWER SUPPLY	
Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min @ 20 mA

rower supply voltage	10 30 Vac
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min @ 20 mA

CORREINT CONSUMPTION	
Current output with Aux supply out op rative (20 mA): 90 mA max.	e-

Voltage output	60 mA max.
ISOLATION	

All the ways	2000 Vac,
	50 Hz, 1 mir

TEMP	FRΔT	URF	& HI	JMIDITY
ILIVIE		OKL	$\alpha$ $\cdots$	

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING				
Material	Self-extinguishing plastic			
Dim. (mm)	W x L x H : 90 x 112 x 22.5			
Weight	About 170 a			

INPUI				
Input type	Min		Max	Span min
DAT5023lac/A	0÷5 A		0÷10 A	-
DAT5023lac/B	0÷20 A		0÷30 A	-
DAT5023lac/D	0÷40 A		0÷60 A	-
Bandwidth (-3d	dB)			
40 Hz ÷ 1KHz				
Input Calibration	on	± (	0.1 % f.s.	
Linearity (*)		±1	% f.s.	
Thermal drift				
Full Scale		± (	0.02 % / °C	

OUTPUT			
output type	Min	Max	Span min
Current	0 mA	20 mA	-
Current	4 mA	20 mA	-
	0 V	10 V	-
,, ,,	2 V	10 V	-
Voltage	0 V	5 V	-
	1 V	5 V	-
Load resistance (Rload)			
Voltage output	>/= 5 KΩ		
Current output	= 500 Ω</td		

(\*) = inclusive of hysteresis and power supply variation.

Response time (10÷90% of f.s.) About 400 ms

#### ISOLATED CONVERTER FOR DC CURRENT SIGNAL WITH FIXED INPUT AND DIP SWITCH CONFIGURABLE OUTPUT

# **DAT 50231d**



The converter DAT 5023Idc is designed to convert the DC current signal from  $0 \div 5$  A to  $0 \div 60$  A applied on its input in a voltage or current output signal. The device is available in three versions (A, B and D) in function of the input current value.

The user can program the output ranges by the proper DIP-switches available after opening the suitable door located on the side of device

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

#### **FEATURES**

- Input for DC current signal
- Build-in cross connector (8mm diameter)
- Measure by Hall effect transducer
- Isolated power supply source for passive loads on output
- Independent zero and full scale regulations
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035







#### **Application areas**











### **POWER SUPPLY**

Power supply voltage	18 30 Vac
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min @ 20 mA

#### **CURRENT CONSUMPTION**

Current output with Aux supply out operative (20 mA): 90 mA max. 60 mA max. Voltage output

#### **ISOLATION**

2000 Vac, 50 Hz, 1 min All the ways

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

110031110	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 22.5
Weight	About 170 a

INPUT				
Input type	Min		Max	Span min
Current (A) (1)	0÷5 A		0÷60 A	-
Input Calibratio	n	± (	0.1 % f.s.	
Linearity (*)		±1	% f.s.	
Thermal drift				
Full Scale		± (	0.02 % / °C	
(1) T + -				. 4  !

<sup>(1) =</sup> To choose the input range refer to the technical data sheet.

OUTPUT			
output type	Min	Max	Span min
Current	0 mA	20 mA	-
Current	4 mA	20 mA	-
	0 V	10 V	-
Voltage	2 V	10 V	-
	0 V	5 V	-
	1 V	5 V	-

Load	resistance	(Rload)

Response time (10÷90% of	f.s.)	About 400 ms	
Current output	=</th <th>500 Ω</th> <th></th>	500 Ω	
Voltage output	>/=	5 ΚΩ	

(\*) = inclusive of hysteresis and power supply variation.

Ω



#### GENERAL DESCRIPTION

The converter DAT 5023/V is designed to detect the TRMS value of the AC voltage signal or to convert the DC voltage signal applied on its input in a voltage or current output signal. The user can program the input type and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device.

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

The 1500 Vac isolation between input, power supply and output eliminates the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications.

- Input for AC/DC voltage signal
- Dedicated measure inputs
- Input type of measure ( AC / DC ) configurable by DIP-switches
- True Root Mean Square (TRMS) measure
- Isolated power supply source for passive loads on output
- Voltage or current output configurable by DIP-switches
- Galvanic isolation at 1500 Vac between input, power supply and output
- Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035







**Application areas** 











POWER SUPPLY				
Power supply voltage	18 30 Vdc			
Rever. polarity protection	60 Vdc max			
Aux. Power Supply OUT	12 Vdc min @ 20 mA			

## **CURRENT CONSUMPTION**

### Current output with Aux supply out operative (20 mA): 80 mA max.

Voltage output 60 mA max.

#### **ISOLATION**

1500 Vac, 50 Hz, 1 min All the ways

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	About 90 g.

INPUT					
Input type <sup>(1)</sup>	Min		Max	Span min	
Voltage (Vac)	0÷36 Va	С	0÷550 Vac	-	
Voltage (Vdc)	0÷36 Vd	lc	0÷550 Vdc	-	
Bandwidth (-3dB)					
40 Hz ÷ 1KHz					
Input Calibration ± 0.1 % f.s.					
Linearity (*)					
<b>(AC)</b> $\pm 1 \%$ f.s. <b>(DC)</b> $\pm 0.1 \%$ f.s.					
Thermal drift					
Full Scale		± (	0.02 % / °C		
			·		

ОИТРИТ				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Current	4 mA	20 mA	-	
	0 V	10 V	-	
Voltage	2 V	10 V	-	
voitage	0 V	5 V	-	
	1 V	5 V	-	

Load resistance (Rload)				
Voltage output	>/= 5 KΩ			
Current output	= 500 Ω</td			
(AC) 250 ms				
Response time (10÷90% of f.s.) (DC) 20 ms				
(1) — To shoose the input range refer to the technical				

- (1) = To choose the input range refer to the technical data sheet.
- (\*) = Inclusive of hysteresis and power supply variation.

#### ISOLATED PROGRAMMABLE DIP SWITCH CONVERTER FOR STRAIN GAUGE / BRIDGE SENSORS



The converter DAT 5025 is designed to provide on its output a voltage or current signal linear and proportional with the output voltage coming from the output of a bridge transducer applied on its input.

The user can program the bridge excitation voltage value, the input and the output ranges by the proper DIP-switches available after opening the suitable door located on the side of device.

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

#### **FEATURES**

- Input for Strain-Gauge
  Input range configurable from 0÷10 mV up to 0÷200
- mV or from ± 5 mV up to ± 200 mV
- Current limiter on the input side
- Galvanic isolation at 2000 Vac on the 3 ways
- Isolated power supply source for passive loads on output
- Independent zero and full scale regulations
- EMC compliant CE mark
- Din rail mounting in compliance with EN-50022
- and FN-50035

$\epsilon$	RoHS 2002/96/EC	Pb lead-free	Application a
	2002/95/EC	lead-free	













#### **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Rever. polarity protection	60 Vdc max
Aux. Power Supply OUT	12 Vdc min

#### **CURRENT CONSUMPTION**

Current output with active Power supply aux operative (20 mA): 120 mA max. Voltage output 80 mA max.

#### **ISOLATION**

2000 Vac, All the ways 50 Hz, 1 min

#### **TEMPERATURE & HUMIDITY**

-20°C .. +60°C Operative temperature Storage -40°C .. +85°C temperature Humidity (not condensed) 0..90%

#### **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC**

Immunity EN 61000-6-2 Emission EN 61000-6-4

#### HOUSING

Material Self-extinguishing plastic Dim. (mm) W x L x H : 90 x 112 x 12.5 Weight About 90 g.

INPUT					
Input type <sup>(1)</sup>	Min	Max	Span min		
	0 mV	10 mV	-		
Strain-Gauge	0 mV	200 mV	-		
	± 5 mV	± 200 mV	-		

#### Bridge excitation voltage (Vexc)

**3.60 Vdc \pm 0.1%** (with bridge's resistance included between 100  $\Omega$  and 10 K $\Omega$ )

**10 Vdc \pm 0.1%** (with bridge's resistance included between 300  $\Omega$  and 10 K $\Omega$ )

Bridge excitation current			
65 mA max.			
Input Calibration ± 0.1 % f.s.			
Linearity (*)	± 0.1 % f.s.		
Thermal drift			
Full Scale	± 0.01 % / °C		

OUTPUT					
Output type	Min	Max	Span min		
Current	0 mA	20 mA	-		
Current	4 mA	20 mA	-		
	0 V	10 V	-		
Voltage	2 V	10 V	-		
Voltage	0 V	5 V	-		
	1 V	5 V	-		
Load resistance (Rload)					

	Load resistance (Rload)		
	Voltage output	>/= 5 KΩ	
İ	Current output	= 500 Ω</th <th></th>	
	Response time (10 ÷ 90% o	40 ms	

- (1) = To choose the input range refer to the technical data sheet.
- (\*) = Inclusive of hysteresis and power supply variation.

#### **DAT 5028**



#### **GENERAL DESCRIPTION**

The DAT 5028 device is able to acquire RTD or Tc sensors, mV, V or mA input signals connected to the universal analog input. By means of push-button and 4-digit display on the front panel, four different trip alarms are configurable. Each alarm threshold commands an output relay. Input signal can be retransmitted on the analog output in a Voltage or Current signal, configurable by means of dip-switch on the side of the device.

By means of an internal 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. The 1500 Vac isolation on all ways removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

#### **FEATURES**

- Universal Analog Input : Voltage, Current, TC, RTD, Resistance
- 2 SPDT + 2 SPST Relay Outputs (Version with 4 trips)
- 2 SPDT Relay Outputs (Version with 2 trips)
- 1 V/mA Analog Output for signal transmission
- 1500 Vac galvanic isolation on all ways
- High Accuracy EMC compliance CE Mark
- DIN rail suitable mounting (EN-50022)



















POWER SUPPLY		TEMPERATURE AND HUMIDITY			
Power supply voltage		12 ÷ 30 Vdc	Operative temperature		-30°C ÷ +60°C
Current Consumption		120 mA @24Vdc (300mA max)	Storage temperature		-40°C ÷ +85°C
Rever. polarity protection		60 Vdc max	Humidity (not condensed)		0 ÷ 90 %
ISOLATION		HOUSING			
Isolation voltage		1500 Vac (on all ways)	Material	Self-extinguishing plastic	
EMC (for indust	rial environment	s)	Mounting	DIN Rail	
DIRECTIVE 2004/108/EC		Dimensions (name)	W x L x H : 90 x 112 x 22.5		
Immunity EN 61000-6-2		Dimensions (mm)	WXLXII.9	0 X 112 X 22.5	
Emission	EN 61000-6-4		Weight	about 150 g.	

ANALOG INPUT				
Туре	Range	Accuracy	Linearity	Thermal drift
100 mV	-100 / +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
10 V	-10 / +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
20 mA	0 / 20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt100	-200 / +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt1K	-200 / +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni100	-60 / +180°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni1K	-60 / +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Res	0 / 2 Kohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pot	0 / 100 %	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc J	-210 / +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Тс К	-210 / +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc R	-50 / +1760 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc S	-50 / +1760 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Тс В	+400 / +1825 C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc E	-210 / +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc T	-210 / +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc N	-210 / +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C

Lead wire res. influence				
RTD (3 wires) 0.05 %/Ω (		(50 Ω max)		
mV, Tc < 0.8 uV,		'Ohm		
RTD excitation current, Res, Pot		~ 0.7 mA		
Pot. Nominal value		2 KOhm		
Sample Time		1 sec.		
Warm-up time		3 min.		

DIGITAL OUTPUT				
n.2 SPDT + n.2 SPST Relay				
Max Load (resistive)	2 A @ 250 Vac (per contact)			
iviax Load (resistive)	2 A @ 30 Vdc (per contact)			
Min Load	5Vdc , 10mA			
Voltage Max.	250Vac (50 / 60 Hz) ,110Vdc			

ANALOG	ANALOG OUTPUT					
Туре	Range	Accuracy	Linearity	Thermal drift		
10 V	0 / +10 V	±0.1 % f.s.	±0.05 % f.s.	100 ppm/°C		
20 mA	0 / +20 mA	±0.1 % f.s.	±0.05 % f.s.	100 ppm/°C		
Load Resistance				current output) oltage output)		
Auxiliary Voltage			>12V			

#### TRIP AMPLIFIER WITH DEDICATED ANALOG INPUT

#### **DAT 5024**



#### **GENERAL DESCRIPTION**

The trip amplifier DAT 5024 is able to accept on its input a wide range of normalised voltage signals, normalised current signals coming from both active and passive current loop, signals coming from RTDs, Thermocouples and resistance sensors. The input type and the input range are fixed: refer to the section "Technical Specifications", table "Input type " to order the device. The Threshold 1 is programmed as high alarm, while, by dip-switches, it is possible to set the Threshold 2 either as high or low alarm. The trip level of each threshold can be adjusted by the potentiometers and checked by the test-points located on the front of the device. It is possible to adjust by potentiometers also the values of the hysteresis level and delay time. The isolation between input and power supply is 2000 Vac. The isolation between input and contacts of relays is 1500 Vac. The isolations eliminate the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications.

#### **FFATURES**

- Available analog inputs: RTD, TC, Voltage, Resistance and Current
- Two independent threshold: two high alarm or one high and one low alarm
- Trip level and hysteresis adjustable by potentiometer
- Delay time adjustable by potentiometer up to 25 sec.
- Two relays SPDT 250Vac, 2A
- Galvanic isolated among the three ways
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

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POWER SUPPLY		EMC (for industrial environments)		TEMPERATURE AND HUMIDITY	
Power supply voltage	18 ÷ 32 Vdc			DIRECTIVE 2004/108/EC Operative temperature -30°C ÷ +60°	
Current Consumption	110 mA max @ 24 Vdc				
Rever. polarity protection	60 Vdc max	Immunity	EN 61000-6-2	Storage temperature	-40°C ÷ +85°C
AUXILIARY SUPPLY					
(only for mA input)	> 18 V @ 20 mA	Emission	EN 61000-6-4	Humidity (not condensed)	0 ÷ 90 %
ISOLATION			HOUSING		

ISOLATION		HOUSING		
Input – power supply	2000 Vac 50 Hz, 1 min	Material	Self-extinguishing plastic	
Input – contact of relays	2000 Vac 50 Hz, 1 min	Dimensions (mm)	W x L x H : 90 x 112 x 22.5	
Power supply – contact of relays	1500 Vac 50 Hz, 1 min.	Weight	about 90 g.	

INPUT				
Input type*	Min	Max		
Voltage				
50 mV	0 mV	+50 mV		
100 mV	0 mV	+100 mV		
500 mV	0 mV	+250 mV		
1 V	0 mV	+1 V		
10 V	0 mV	+10 V		
Thermocouple				
J	-210 °C	+1200 °C		
K	-210 °C	+1370 °C		
R	-50 °C	+1760 °C		
S	-50 °C	+1760 °C		
В	+400 °C	+1820 °C		
E	-210 °C	+1000 °C		
Т	-210 °C	+400 °C		
N	-210 °C	+1300 °C		
RTD				
Pt100	-50 °C	+400 °C		
Pt1000	-200 °C	+200 °C		
Ni100	-60 °C	+180 °C		
Ni1000	-60 °C	+150 °C		
Resistance				
250 Ω	0 Ω	250 Ω		
2 ΚΩ	0 Ω	2000 Ω		
Current mA				
20 mA	0 mA	20 mA		

* Specify	in	phase	of	order
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	0.407.6
Input calibration (1)	±0.1% f.s.
Linearity (1)	
mV, V, mA	± 0.05% f.s.
Tc, RTD	± 0.2% f.s.
Input impedance	
mV, Tc	> 1 MΩ
V	> 100 KΩ
mA	< 50 Ω
RTD excitation current	
Typical	0.6 mA
Thermal drift (1)	
Full scale	± 0.02 % / °C
CJC comp.	
Тс	± 0.5 °C
Thermal drift CJC	
Full scale	± 0.02 °C/ °C
Line resistance influence (1)	
mV, Tc	< 0.8 uV/Ohm
Threshold	Adjustable from 2 up to 98% f.s.
Hysteresis	Adjustable from 0.5 up to 10 % f.s.
Delay	Adjustable up to 25 sec.

RELAY OUTPUT	
N° 2 SPDT	
Contact rating	250 Vac, 2A
Isolation between contact	1000 Vac max

<sup>(1)</sup> referred to input Span (difference between max. and min. values)

**Power Supply** 

Power supply voltage

**DAT 5024E** 



#### GENERAL DESCRIPTION

The DAT 5024E is an economic trip amplifier able to accept on its input normalised voltage and current signals coming from both active the description of the property of thand passive current loops. Both the trips can be configured as high or low alarm, the adjustment of the trip values is performed by the potentiometers THR1 and THR2 located on the front side of the device.

. The adjustment of the hysteresis and delay value can be performed by the potentiometers accessible opening the suitable door located on the side of the device.

On the devices are foreseen the following isolation power supply/input: 1500 Vac; contact of relays/output-input: 1000 Vac.

#### **FEATURES**

- Input for Voltage and Current
- Two independent thresholds
- Type of alarm programmable by dip-switch as high or low
- Galvanic isolated among the ways
- Trip level and hysteresis adjustable by potentiometers

20 mA

- Delay time adjustable by potentiometer from 1 up to 6 sec.
- Two relays SPDT (Form C)
- Good accuracy and linearity
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



18 ÷ 30 Vdc











Operative temperature

about 90 g.

**TEMPERATURE AND HUMIDITY** 







-20°C ÷ +60°C

Current Consumption	110 mA max @ 24 Vdc			3,000	
Rever. polarity protection	60 Vdc max	Immunity	EN 61000-6-2	Storage temperature	-40°C ÷ +85°C
AUXILIARY SUPPLY					
(only for mA input)	> 18 V @ 20 mA	Emission	EN 61000-6-4	Humidity (not condensed)	0 ÷ 90 %
ISOLATION			HOUSING		
Input – Power Supply	1500 Vac 50 Hz, 1	min	Material	Self-extinguishing plastic	
Input – contact of relays	1000 Vac 50 Hz. 1	1000 Vac 50 Hz 1 min		W x I x H · 90 x 112 x 12 5	

Weight

**EMC (for industrial environments)** 

DIRECTIVE 2004/108/EC

INPUT				
Input type	Min	Max		
Voltage	0 V	5 V		
	0 V	10 V		
	1 V	5 V		
	2 V	10 V		
Current	0 mA	20 mA		
Current				

4 mA

Power Supply – Contact of relays 1000 Vac 50 Hz, 1 min.

Maximum		<b></b>	/	<b>::</b>	II\
IVIAYIMIIM	Operating	I VOITAGE	(nn	resistive	เกลกเ

125 Vac, 30 Vdc

#### Maximum operating current (on resistive load)

0.5 A @ 125 Vac, 1 A @ 30 Vdc

#### Maximum switching capacity (on resistive load)

62.5 VA, 30 W

#### Trip value regulation

Configurable from 2 to 96 % of f.s.

#### Delay time value regulation

Configurable from 1 to 6 sec.

#### Hysteresis value regulation

Configurable from 1 al 9.5 % of f.s.

Input calibration (1)	
±0.1% f.s.	
Thermal drift (1)	
Full scale	± 0.02 % / °C

RELAY OUTPUT	
N° 2 SPDT (Form C)	





#### GENERAL DESCRIPTION

The transmitter DAT 205 2W is designed to provide on output a 4÷20 mA current loop linearised signal proportional with the variation of resistance introduced from the potentiometer connected to its input; to make the measure, a 1 Vdc voltage reference is provided at the ends of the potentiometer. The regulation of the zero and full-scale value are made using the ZERO and SPAN potentiometers; there is not influence between the regulations.

#### **FEATURES**

- Input for potentiometer
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- 4÷20 mA current loop linearised output
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035















PO	W	ER	SU	PP	LY
----	---	----	----	----	----

10 .. 32 Vdc Power supply voltage Reverse polarity protection 60 Vdc max

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE 2004/108/EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 62 x 64 x 17
Weight	about 50 g.

INPUT			
Input type	Min	Max	Span min
<b>Potentiometer</b> (Rnom.1 10KΩ)	0%	100%	-
Calibration			
Potentiometer		± 0.1 % f.s	i.
Linearity			
± 0.1 % f.s.			
Thermal drift			
Full scale		± 0.02 % ,	/ °C

OUTPUT			
Output type	Min	Max	Span min
Current	4 mA	20 mA	-
Burn-out values			
Max. value output		25 mA	
Response time (10÷90%)		about 500 ms	5

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#### FIXED RANGE CONVERTER FOR POTENTIOMETER

# **DAT 205 3W**

#### GENERAL DESCRIPTION

The converter DAT 205 3W is designed to provide on output a linearised voltage or current signal proportional with the variation of resistance introduced from the potentiometer connected to its input; to make the measure, a 1 Vdc voltage reference is provided at the ends of the potentiometer. The regulations of the zero and full-scale value are made using the ZERO and SPAN potentiometers; there is not influence between the regulations.

#### **FEATURES**

- Input for potentiometer
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- Output in voltage or current
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035







**Application areas** 











Power supply voltage 18 .. 30 Vdc Reverse polarity protection 60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	30 mA max.
Voltage output	10 mA max.

#### **TEMPERATURE & HUMIDITY**

-20°C .. +70°C Operative temperature Storage temperature -40°C .. +85°C

Humidity (not condensed) 0 .. 90 % **EMC** (for industrial environments)

#### **DIRECTIVE 2004/108/EC**

Immunity EN 61000-6-2 EN 61000-6-4 Emission

#### HOUSING

Material Self-extinguishing plastic Dim. (mm) W x L x H : 62 x 64 x 17 Weight about 50 g.

Input type	Min	Max	Span min
<b>Potentiometer</b> (Rnom.1 10KΩ)	0%	100%	-
Calibration			
Potentiometer		± 0.1 % f.	S.
Linearity			
± 0.1 % f.s.			
Thermal drift			
Full scale		± 0.02 %	/ °C

OUTPUT			
Output type	Min	Max	Span min
Current	0 mA	20 mA	-
Voltage	0 V	10 V	-
Burn-out values			
Max. value output		25 mA or 15V	
Response time (10÷90%)		about 500 ms	5
Response time (10÷90%) about 500 ms			

#### FIXED RANGE TRANSMITTER FOR mV, V AND mA SIGNALS



#### **GENERAL DESCRIPTION**

The transmitter DAT 207 2W is designed to provide on output a 4÷20 mA current loop signal proportional with the variation of the normalised current or voltage signal applied to its input.

#### **FEATURES**

- Input for current or voltage signals
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- 4÷20 mA current loop output
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

#### The transmitter is available in 3 different versions:

- DAT 207A 2W to measure voltage signals included between  $0 \div 5$  mV and  $0 \div 200$  mV;
- DAT 207B 2W to measure voltage signals included between  $0 \div 200$  mV and  $0 \div 20$  V;
- DAT 207C 2W to measure current signals between  $0 \div 5$  mA and  $0 \div 50$  mA.







#### **Application areas**











POWER SUPPLY			
Power supply voltage			10 32 Vdc
Reverse pola	rity protection	า	60 Vdc max
TEMPERAT	TURE & HU	M	IIDITY
Operative ter	mperature		-20°C +70°C
Storage temp	perature		-40°C +85°C
Humidity (not condensed) 0 90 %			0 90 %
<b>EMC</b> (for industrial environments)			
DIRECTIVE 2004/108/EC			
Immunity	EN 61000-6-2		
Emission	EN 61000-6-4		
HOUSING			
Material	Self-extinguishing plastic		
Dim. (mm)	W x L x H : 62 x 64 x 17		
Weight	about 50 g.		

INPUT				
Input type	Min		Max	Span min
Voltage				
Version"A"	0 ÷ 5 mV	0 ÷	200 mV	-
Version"B"	0 ÷ 200 mV	0 ÷ 20 V		-
Current				
Version"C"	0 ÷ 5 mA	0 ÷ 50 mA		-
Calibration				
mV, V, mA			± 0.1 % f.s.	
Linearity				
± 0.1 % f.s.				
Thermal drift				
Full scale ± 0.02 % / °C		/ °C		

OUTPUT			
Output type	Min	Max	Span min
Current	4 mA	20 mA	-
Burn-out values			
Max. value output		25 mA	
Response time (10÷90%)		about 300 n	ns

#### **CONVERTER FOR mV,V AND mA SIGNALS**

## 38 **DAT 207**



#### **GENERAL DESCRIPTION**

The converter DAT 207 3W is designed to provide on output a 4÷20 mA current loop signal proportional with the variation of the normalised current or voltage signal applied to its input.

- Input for current or voltage signals
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- Output in voltage or current
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

#### The converter is available in 3 different versions:

- DAT 207A 3W to measure voltage signals included between 0 ÷ 5 mV and 0 ÷ 200 mV;
- DAT 207B 3W to measure voltage signals included between 0  $\div$  200 mV and 0  $\div$  20 V;
- DAT 207C 3W to measure current signals between  $0 \div 5$  mA and  $0 \div 50$  mA.







#### **Application areas**











#### **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Reverse polarity protection	60 Vdc max

#### **CURRENT CONSUMPTION**

Current output	30 mA max.
Voltage output	10 mA max.

#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

#### **EMC** (for industrial environments)

#### DIRECTIVE 2004/108/EC

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 62 x 64 x 17
Weight	about 50 g.

INPUT				
Input type	Min		Max	Span min
Voltage				
Version"A"	0 ÷ 5 mV	0 ÷	200 mV	-
Version"B"	0 ÷ 200 mV	0	÷ 20 V	-
Current				
Version"C"	0 ÷ 5 mA	0 ÷ 50 mA		-
Calibration				
mV, V, mA ± 0.1 % f.s.				
Linearity				
± 0.1 % f.s.				
Thermal drift				
Full scale			± 0.02 %	/ °C

OUTPUT				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Voltage	0 V	10 V	-	
Burn-out values	1			
Max. value output		25 mA or 15V		
Response time (10÷90%)		about 300 ms		





#### **GENERAL DESCRIPTION**

The transmitter DAT 511 is a passive 0÷20 mA current loop isolator.

The input current, variable from 0 up to 20 mA, is converted in an output current of the same value but keeping a galvanic isolation from the input circuit.

The converter is a passive isolator: this means that the device employs the measurement signal to power it self, so it does not require any external power supply.

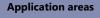
#### **FEATURES**

- 0÷20 mA isolated conversion
- No external supply required
- 3000 Vac galvanic isolation

- Good accuracy and performance stability
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035















#### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C +70°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### DIRECTIVE 2004/108/EC

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 62 x 64 x 17
Weight	About 60 g.

INPUT					
Input type	Min		Max	Span min	
Current	0 mA		20 mA	-	
Max. INPUT signal			50 mA		
Load resistance (Rload)					
From 0 to 700 ohm					
Thermal drift					
Full scale			± 0.02 %	/ °C	

OUTPUT				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Burn-out values				
Max. value output 25 mA				
Isolation voltage				
3000 Vac, 50 Hz 1 min.				
Response time (10÷90%) About 20 ms				

#### SELF-POWERED CURRENT LOOP ISOLATOR HART COMPATIBLE

# **DAT 511/H**

#### **GENERAL DESCRIPTION**

The transmitter DAT 511/H is a passive 0÷20 mA current loop isolator. The input current, variable from 0 up to 20 mA, is converted in an output current of the same value but keeping a galvanic isolation from the input circuit. The device allows the bidirectional communication of signals HART protocol compatible. The converter is a passive isolator: this means that the device employs the measurement signal to power itself, so it does not require any external power supply.

- 0÷20 mA isolated conversion
- Hart compatible
- No external supply required
- 1500 Vac galvanic isolation

- Good accuracy and performance stability
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035







**Application areas** 











#### **TEMPERATURE & HUMIDITY**

Operative temperature	0°C +55°C
Storage temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

**EMC** (for industrial environments)

#### **DIRECTIVE 2004/108/EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

#### HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 62 x 64 x 17
Weight	About 60 g.

INPUI						
Input type	Min		Max	Span min		
Current	0 mA	20	0 mA	-		
Max. INPUT sign	Max. INPUT signal 50 mA					
Load resistance	(Rload)					
From 0 to 700 ohm						
Thermal drift						
Full scale ± 0.02% / °C						
Bandwidth						
From 0.5 up to 4 KHz bidirectional within 3 dB						

OUTPUT	DUTPUT		
Output type	Min	Max	Span min
Current	0 mA	20 mA	-
Burn-out values			
Max. value output		25 mA	
Isolation voltag			
1500 Vac, 50 Hz 1 min.			
Response time (10÷90%)		About 20 ms	





#### **GENERAL DESCRIPTION**

The device DAT3580 is an isolated interface converter between asynchronous serials lines RS232 and RS485 or RS422 that guarantees a full isolation between power supply, serial line RS-232 and serial line RS-485 or 422 removes eventual ground-loop effects,

allowing the use of the device even in the heavy environmental conditions. It is designed to operate either on serial interface RS-422 full-duplex 4 wires or RS485 half-duplex 2 wires, with a baud-rate transmission up to 115.2 Kbps. The transmission is asynchronous without settings of protocol, data format and baud rate.

On the line RS-232 are not necessary handshake commands (RTS, CTS, etc..) to control the baud rate.

#### **FEATURES**

- Asynchronous serial data transmission
- Automatic baud-rate fitting up to 115.2 Kbps
- Distance up to 1200 m
- Point to point connection or multipoint connection up to 32 modules
- DC or AC power supply

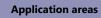
- Galvanic isolation on all ways
- RS232 connection on DB9 or removable terminals
- EMC compliance CE mark
- EIA RS232, RS485 and RS422 compliant
- Suitable for DIN rail mounting in compliance with EN-50022





















POWER SUPPLY		
10 ÷ 30 Vdc		
9 ÷ 18 Vac (18 ÷ 30 Vac opt	ional)	
CURRENT CONSUMPTION		
35 mA typ. @ 24Vdc		
ISOLATIONS		
Power Supply/ RS232		
Power Supply/ RS485-422	2000 Vac, 50 Hz, 1 min.	
RS232 / RS485-422		
TEMPERATURE & HUMIDITY		
Operative temperature	-20°C ÷ +60°C	
Storage temperature	-40°C ÷ +85°C	

Humidity (not condensed)

<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 22.5	
Weight	About 150 g.	
CONNECT	ION	
RS-232	DB9 and removable screw terminals	
RS-485/422	removable screw terminals	

RS485 Interface			
Baud-rate	up to	115.2 Kbps	
Max. distance / baud-rate	1.2 Km @ 38400 bps		
	2 Km @ 19200 bps		
	3 Km @ 9600 bps		
ratio (recommended) (1)	4 Km @ 4800 bps		
	5 Km @ 2400 bps		
	7 Km @ 1200 bps		
Number of modules in multipoint		32 max.	
Switching time TX/RX (RS485)		150 us.	
Internal terminator resistance (optional)		120 Ohm (optional)	

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

ISOLATED CONVERTER USB

→ RS485 / 422

**DAT 3580-USB** 

#### GENERAL DESCRIPTION

The device DAT3580-USB is an isolated interface converter between USB port and asynchronous serial lines RS485 or RS422 that guarantees a full isolation between power supply, USB and serial line RS-485 or 422 removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

It is designed to operate either on serial interface RS-422 full-duplex 4 wires or RS485 half-duplex 2 wires, with a baud-rate transmission up to 115.2 Kbps. The transmission is asynchronous without settings of protocol, data format and baud rate.

#### **FEATURES**

0 ÷ 90 %

- Asynchronous serial data transmission
- Automatic baud-rate fitting up to 115.2 Kbps
- Distance up to 1200 m
- Point to point connection or multipoint connection up to 32 modules
- DC or AC power supply
- Galvanic isolation on all ways
- EMC compliance CE mark
- USB 2.0. EIA RS485 and RS422 compliant
- Suitable for DIN rail mounting in compliance with EN-50022



-40°C ÷ +85°C

0 ÷ 90 %



**Application areas** 











POWER SUPPLY		
10 ÷ 30 Vdc	10 ÷ 30 Vdc	
9 ÷ 18 Vac (18 ÷ 30 Vac optional)		
CURRENT CONSUMPTION		
35 mA typ. @ 24Vdc		
ISOLATIONS		
Power Supply/ USB		
Power Supply/ RS485-422	2000 Vac, 50 Hz, 1 min.	
USB / RS485-422		
TEMPERATURE & HUMIDITY		
Operative temperature	-20°C ÷ +60°C	

<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 22.5	
Weight	About 150 g.	
CONNECTION		
USB	USB cable integrated	
RS-485/422	removable screw terminals	

RS485 Interface			
Baud-rate	up to	115.2 Kbps	
	1.2 Km @ 38400 bps		
	2 Km @ 19200 bps		
Max. distance / baud-rate	3 Km @ 9600 bps		
ratio (recommended) (1)	4 Km @ 4800 bps		
	5 Km @ 2400 bps		
	7 Km @ 1200 bps		
Number of modules in multipoint		32 max.	
Switching time TX/RX (RS485)		150 us.	
Internal terminator resistance (optional)		120 Ohm (optional)	

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

Humidity (not condensed)

Storage temperature

# ETHERNET ISOLATED GATEWAY MODBUS TCP←→MODBUS RTU



# **GENERAL DESCRIPTION**

The gateway DAT3580-MBTCP allows to connect the Modbus RTU devices of a RS-485 network to the Ethernet network through the Modbus TCP protocol.

By means of the Telnet interface it is possible to configure all the Modbus TCP side options (IP address, subnet mask, etc..) and the Modbus RTU side options (baud rate, etc...).

The device guarantees a full isolation between lines, allowing the use even in the heavy environmental conditions.

- Network interface
- Ethernet 10/100Base-T, Modbus TCP
- Telnet configuration
- RJ45 connection
- RS-485 Serial interface
- Modbus RTU Master
- Baud rate up to 115.2 Kbps

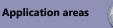
- Distance up to 1200 m, up to 32 devices in multipoint
- Removable screw-terminal connection
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- Galvanic Isolation on all ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 and RS485 compliant
- Suitable for DIN rail mounting in compliance with EN-50022





















POWER SUPPLY		
18 ÷ 30 Vdc		
CURRENT CONSUMPTION		
45 mA typ. @ 24Vdc (sleep	p mode)	
80 mA max		
ISOLATIONS		
Power Supply/ Ethernet	1500 Vac, 50 Hz, 1 min.	
Power Supply/ RS485	2000 Vac, 50 Hz, 1 min	
Ethernet / RS485	2000 Vac, 50 Hz, 1 min	
TEMPERATURE & HUMIDITY		
Operative temperature	-20°C ÷ +60°C	
Storage temperature	-40°C ÷ +85°C	
Humidity (not condensed)	0 ÷ 90 %	

<b>EMC</b> (for industrial environments)		
DIRECTIVE	2004 / 108 / EC	
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 22.5	
Weight	About 150 g.	
CONNECTION		
Ethernet	RJ-45	
RS-485	removable screw terminals	

Network interface	Etherr	et 10/100 Base-T
Protocol	Modb	us TCP
Connection	RJ-45	
Baud-rate (RS-485)	up to	115.2 Kbps
Max. distance / baud-rate ratio (recommended) (1)	1.2 Km	n @ 38400 bps
	2 Km @	© 19200 bps
	3 Km @ 9600 bps	
	4 Km @	9 4800 bps
	5 Km @	② 2400 bps
	7 Km @	© 1200 bps
Number of modules in multipoint		32 max.
Switching time TX/RX (RS485)		150 us.
Internal terminator resistance (optional)		120 Ohm (optional)

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

# REPEATER/ ISOLATOR RS485 / 422



The device DAT 3590 is an isolated repeater between asynchronous serials lines RS485 or RS422 that guarantees a full isolation between power supply and serial line removing eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions. It is designed to operate either on serial interface RS-422 full-duplex 4 wires or RS485 half-duplex 2 wires, with a baud-rate transmission up to 115.2 Kbps.

The transmission is asynchronous without settings of protocol, data format and baud rate.

# **FEATURES**

- Asynchronous serial data transmission
- Automatic baud-rate fitting up to 115.2 Kbps
- Distance up to 1200 m
- Point to point connection or multipoint connection up to 32 modules
- DC or AC power supply
- Galvanic isolation
- EMC compliance CE mark
- EIA RS485 and RS422 compliant
- Suitable for DIN rail mounting in compliance with EN-50022







**Application areas** 











# **POWER SUPPLY**

10 ÷ 30 Vdc

9 ÷ 18 Vac (18÷24 Vac optional)

# **CURRENT CONSUMPTION**

35 mA @ 24Vdc

# **ISOLATIONS**

Power Supply/ RS485-422 2000 Vac, 50 Hz, 1 min. 2000 Vac, 50 Hz, 1 min. RS485-422 / RS485-422

# **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C ÷ +60°C
Storage temperature	-40°C ÷ +85°C
Humidity (not condensed)	0 ÷ 90 %

# **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC** EN 61000-6-2 Immunity Emission EN 61000-6-4 **HOUSING** Material Self-extinguishing plastic Mounting W x L x H : 120 x 100 x 22.5 Dim. (mm) Weight About 150 g. CONNECTION RS485/422 removable screw terminals

Baud-rate	up to	115.2 Kbps
Max. distance / baud-rate ratio (recommended) (1)	1.2 Km	n @ 38400 bps
	2 Km @	@ 19200 bps
	3 Km @	@ 9600 bps
	4 Km @	@ 4800 bps
	5 Km @	@ 2400 bps
	7 Km @	@ 1200 bps
Number of modules in multipoin	t	32 max.
Switching time TX/RX (RS485)		150 us.
Internal terminator resistance (op	tional)	120 Ohm
(1) = The maximum distance de	nends	of number of

devices connected, type of cabling, noises, etc...

# DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 4 RELAY OUTPUTS ON RS-485 NETWORK

# **DAT 3130**

## GENERAL DESCRIPTION

The device DAT 3130 is able to acquire up to 4 digital inputs and to drive up to 4 relay outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network.

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. The 1500 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

# **FEATURES**

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 4 digital inputs
- 4 relay outputs (2 SPDT + 2 SPST)
- Watch-Dog alarm
- Configurable from a remote terminal
- Three ways galvanic isolation 1500 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting





**Application areas** 









# **POWER SUPPLY** Supply Voltage 18 .. 30 Vdc Current consumption 45 mA @ 24 Vdc Rever. Polarity protection 60 Vdc max **ISOLATIONS**

# Inputs - RS485 1500 Vac 50 Hz, 1 Inputs – Supply

# RS-485 - Supply **TEMPERATURE & HUMIDITY**

## -10°C .. +60°C Operating Temperature -40°C .. +85°C Storage Temperature 0..90% Humidity (not condensed)

# **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2	

mmunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 22.5
Weight	About 210 a.

	9.	
DIGITAL INPUTS		
Input channels 4		
Input voltage (bipolar)		
OFF State	0 ÷ 3 V	
ON State	10 ÷ 30 V	
Impedance	4.7 ΚΩ	
Data Transmission (asynchronous serial)		
Baud rate	up to 38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Sample time	5 ms max	

4	
n° 2 SPST N.O. relays	
d) per contact	
per contact	
5Vdc , 10mA	
250Vac (50 / 60 Hz), 110Vdc	

# DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 8 NPN OUTPUTS ON RS-485 NETWORK

# **DAT 3140**

# **GENERAL DESCRIPTION**

The device DAT 3140 is able to acquire up to 4 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network.

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. The galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

# **FEATURES**

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 4 digital inputs
- 8 digital outputs, NPN type

- Watch-Dog alarm
- Configurable from a remote terminal
- Galvanic isolation on all ways
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting





**Application areas** 









POWER SUPPLY	
Supply Voltage	10 30 Vdc
Current consumption	45 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

Inputs – Outputs	1000 Vac 50 Hz, 1 min.
Inputs – RS485	2000 Vac 50 Hz, 1 min.
Inputs – Supply	2000 Vac 50 Hz, 1 min.
Outputs – RS485	2000 Vac 50 Hz, 1 min.
Outputs –Supply	2000 Vac 50 Hz, 1 min.
RS-485 – Supply	2000 Vac 50 Hz, 1 min.

# **TEMPERATURE & HUMIDITY**

**ISOLATIONS** 

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90%

# EMC (for industrial environments)

DIRECTIVE	2004	/ 108	/ EC

mmunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	
Weight	About 210 g.	

DIGITAL INPUTS		
4		
Input voltage (bipolar)		
0 ÷ 3 V		
10 ÷ 30 V		
4.7 ΚΩ		
Data Transmission (asynchronous serial)		
up to 38.4 Kbps		
1.2 Km - 4000ft		
20 ms max		

ОИТРИТ		
Output channels	8	
Туре	NPN	
Max. Load	600 mA per channel	
	3 A max per module	
Max. Voltage	30 Vdc	
Over-current protection	NO	

# **DISTRIBUTED I/O MODULE 8 DIGITAL INPUTS ON RS-485 NETWORK**



# **GENERAL DESCRIPTION**

The device DAT 3148/8 is able to acquire up to 8 digital inputs. The data are transmitted with MODBUS RTU/ASCII on RS-485 network. To assure safe operation of the system, the device is equipped with two Watch-Dog timers.

The 2000 Vac galvanic isolation between inputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing

the use of the device in worst ambient conditions.

# **FEATURES**

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 8 digital inputs
- Watch-Dog alarm

- Configurable from a remote terminal
- Four ways galvanic isolation 2000 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting















POWER SUPPLY	
Supply Voltage	10 30 Vdc
Current consumption	35 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max
ISOI ATIONS	

Rever. Polarity protection	on out max	
ISOLATIONS		
Input 0÷7	1500 Vac 50 Hz, 1 min.	
Inputs – RS485	2000 Vac 50 Hz, 1 min.	
Inputs – Supply	2000 Vac 50 Hz, 1 min.	
RS-485 – Supply	2000 Vac 50 Hz, 1 min.	
TEMPERATURE & HUMIDITY		
Operating Temperature	-10°C +60°C	

Storage Temperature

Humidity (not condensed)

<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	

About 210 g.

DIGITAL INPUTS	
Input channels	8
Input voltage (bipola	ar)
OFF State	0 ÷ 3 V
ON State	10 ÷ 30 V
Impedance	4.7 ΚΩ
Data Transmission (a	synchronous serial)
Baud rate	38.4 Kbps
Max. Distance	1.2 Km - 4000ft
Sample time	5 ms max

# **DISTRIBUTED I/O MODULE 12 DIGITAL INPUTS ON RS-485 NETWORK**

-40°C .. +85°C

0 .. 90 %

# **DAT 3148/12**

**POWER SUPPLY** 

# **GENERAL DESCRIPTION**

Weight

The device DAT 3148/12 is able to acquire up to 12 digital inputs. The data are transmitted with MODBUS RTU/ASCII on RS-485 network. To assure safe operation of the system, the device is equipped with two Watch-Dog timers.

The 2000 Vac galvanic isolation between inputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

# **FEATURES**

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 12 digital inputs
- Watch-Dog alarm

- Configurable from a remote terminal
- Four ways galvanic isolation 2000 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting

















	Supply Voltage		10 30 Vac
	Current consumption		35 mA @ 24 Vdc
	Rever. Polarity protection		60 Vdc max
ISOLATIONS			
	Input 0÷7 / 8÷11	150	00 Vac 50 Hz, 1 min.
	Inputs – RS485	20	00 Vac 50 Hz, 1 min.
	Inputs – Supply	20	00 Vac 50 Hz, 1 min.

TEMPERATURE & HUMIDITY		
Operating Temperature	-10°C +60°C	
Storage Temperature	-40°C +85°C	
Humidity (not condensed)	0 90 %	

RS-485 – Supply 2000 Vac 50 Hz, 1 min.

<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	
Weight	About 210 g.	

DIGITAL INPUTS		
Input channels	12	
Input voltage (bipolar)		
OFF State	0 ÷ 3 V	
ON State	10 ÷ 30 V	
Impedance	4.7 ΚΩ	
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Sample time	5 ms max	

# DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 8 PNP OUTPUTS ON RS-485 NETWORK



# GENERAL DESCRIPTION

The device DAT 3188/4 is able to acquire up to 4 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network (is available the RS-232 interface model).

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. Also, the outputs are protected against over currents and over temperature

The 2000 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

## **FEATURES**

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 4 digital inputs
- 8 digital outputs, PNP type

- Over-temperature and over-current protection
- Watch-Dog alarm
- All the ways galvanic isolation 2000 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting















POWER SUPPLY	
Supply Voltage	10 30 Vdc
Current consumption	45 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

# ISOLATIONS (Input / Output / RS485 / Supply)

2000 Vac 50 Hz, 1 min.

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	
Weight	About 210 g.	

DIGITAL INPUTS		
Input channels	4	
Input voltage (bipolar)		
OFF State	0 ÷ 3 V	
ON State	10 ÷ 30 V	
Impedance	4.7 ΚΩ	
Data Transmission (asynchronous serial)		
Baud rate	115.2 Kbps	
Max. Distance	1.2 Km - 4000ft	
Sample time	5 ms max	

DIGITAL OUTPUTS	
Output channels 8	
Туре	PNP
Max. Load	500 mA per channel*
	1 A per module
Inductive Load	48 Ω - 2 H max.
Voltage	10.5 ÷ 30 Vdc

(\*) = Protection against over-current and over-temperature Short circuit current 1.7 A max.

# DISTRIBUTED I/O MODULE 8 DIGITAL INPUTS + 8 PNP OUTPUTS ON RS-485 NETWORK



# GENERAL DESCRIPTION

The device DAT 3188/8 is able to acquire up to 8 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with

MODBUS RTU/ASCII protocol on RS-485 network (is available the RS-232 interface model).

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. Also, the outputs are protected against over currents and over temperature.

The 2000 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 8 digital inputs
- 8 digital outputs, PNP type

- Over-temperature and over-current protection
- Watch-Dog alarm
- All the ways galvanic isolation 2000 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting





# **Application areas**











FOWER SUFFEI	
Supply Voltage	10 30 Vdc
Current consumption	45 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

# ISOLATIONS (Input / Output / RS485 / Supply)

2000 Vac 50 Hz, 1 min.

DOWED SLIDDLY

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

## HOUSING Material Self-extinguishing plastic Mounting DIN rail

Dim. (mm) W x L x H : 120 x 100 x 17.5 Weight About 210 g.

DIGITAL INPUTS		
Input channels	8	
Input voltage (bipolar)		
OFF State	0 ÷ 3 V	
ON State	10 ÷ 30 V	
Impedance	4.7 ΚΩ	
Data Transmission (asynchronous serial)		
Baud rate	115.2 Kbps	
Max. Distance	1.2 Km - 4000ft	
Sample time	5 ms max	

DIGITAL OUTPUTS	
Output channels	8
Туре	PNP
Max. Load	500 mA per channel*
	1 A per module
Inductive Load	48 Ω - 2 H max.
Voltage	10.5 ÷ 30 Vdc

(\*) = Protection against over-current and over-temperature Short circuit current 1.7 A max.

# **UNIVERSAL REMOTE I/O MODULE ON RS-485 NETWORK**

# **DAT 3011**



# **GENERAL DESCRIPTION**

The device DAT 3011 is able to acquire RTD or Tc sensors, mV, V or mA input signals connected to the universal analog input. Moreover a second V/mA analog input is available. The device is able to acquire up to 3 digital inputs and to drive one solid-state relay and two SPST relays. Data values are transmitted with MODBUS RTU protocol on the RS-485 network.

By means of a 16 bit converter, the device guarantee a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 1500 Vac isolation on all ways (Power Supply / RS485 / Universal input / V-mA input / Digital inputs / Relay outputs) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Modbus RTU (Slave) communication
- 1 Universal Analog Input
- 1 V/mA Analog Input 2 0-20mA Analog Outputs
- 3 Digital Inputs

- 1 SSR Digital Output + 2 Relay Outputs
- Watch-Dog Alarm
- 1500 Vac galvanic isolation on all ways
- High Accuracy
- EMC compliance CE Mark
- DIN rail suitable mounting (EN-50022)



















POWER SUPPLY		SERIAL PORT		TEMPERATURE & HUMIDITY		
Supply Voltage	18 ÷ 30 Vdc	Туре	RS-485	Operating Temperature	-10°C +60°C	
Current consumption	30 mA (100mA max)	Protocol	Modbus RTU (Slave)	Storage Temperature	-40°C +85°C	
Rever. Polarity protection	60 Vdc max	Baud Rate	up to 38400 bps	Humidity (not condensed)	0 90 %	
EMC (for industrial environments)		ISOLATIONS		HOUSING		
DIRECTIVE 2004 / 108 / EC				Material	Self-extinguishing plastic	
Immunity	EN 61000-6-2	Type of	1500 Vac	Mounting	DIN rail	
Immunity	EIN 01000-0-2	Isolation	( on all ways)	Dimensions (mm)	W x L x H : 120 x 100 x 22.5	
Emission	EN 61000-6-4			Weight	About 150 a.	

ANALOG INPUTS						
Туре	Range		Accuracy	Linearity	Thermal Drift	
100 mV	-100 ÷ +100	mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
10 V	-10 ÷ +10	٧	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
20 mA	0 ÷ +20	mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt100	-200 ÷ +850	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt1K	-200 ÷ +200	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni100	-60 ÷ +180	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni1K	-60 ÷ +150	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Res	0 ÷ 2000	Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pot	20 ÷ 2000	Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc J	-210 ÷ +1200	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc K	-210 ÷ +1370	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc R	-50 ÷ +1760	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc S	-50 ÷ +1760	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Тс В	+400 ÷ +1825	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc E	-210 ÷ +1000	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc T	-210 ÷ +400	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc N	-210 ÷ +1300	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Lead wi	re res. influen	ce				
RTD (3 wires)		0.05 %/Ω (50 Ω max)				
mV, Tc		< 0.8 uV/Ohm				
Excitation current						
RTD, Res	s, Pot		~ 0.7 mA	~ 0.7 mA		
Sample	time		1 sec.	1 sec.		
Warm-up time		3 min.	3 min.			

ANALOG OUTPUT				
Туре	Range	Accuracy	Linearity	Thermal Drift
20 mA	0÷+20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Load Resistance		< 500 Ohm		
Auxiliary Voltage		>12V		

DIGITAL INPUTS		
Input channels	3	
Input voltage (bipolar)	OFF State : 0÷3 V	
	ON State : 10÷30 V	
Input Impedance	4.7 KOhm	

DIGITAL OUTPUTS		
N.1 Solid State Relay (dry contacts)		
Max. Voltage	48 V (ac/dc)	
Max. Load	0.4A max (resistive)	
N.2 Relays SPST		
Switching power (resistive load)	2 A @ 250 Vac (per contact)	
	2 A @ 30 Vdc (per contact)	
Minimum load	5 Vdc , 10mA	
Max. Voltage	250 Vac (50 / 60 Hz) ,110Vdc	
Dielectric strength between contacts	1000 Vac, 50 Hz, 1 min.	
Dielectric strength between coil and contacts	4000 Vac, 50 Hz, 1 min.	

**DAT 3015-**1

# **DAT 3014**

# REMOTE I/O MODULE 4 CHANNELS RTD INPUT ON RS-485 NETWORK

# **GENERAL DESCRIPTION**

The DAT 3014 device is able to acquire up to 4 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect RTD, Potentiometers or Resistance signals.

By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- RTD, Resistance and Potentiometer configurable input

# - Watch-Dog Alarm

- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance



dc



**Application areas** 











POWER SUPPLY	
Supply Voltage	10 30 Vdc
Current consumption	30 mA @ 24 V

Rever. Polarity protection 60 Vdc max

# **ISOLATIONS**

Inputs – RS485	
Power Supply– Input	2000 Vac 50 Hz, 1 min.
Power Supply– RS-485	

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

Н	0	U	S	I١	10	G

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT		
Input type	Min	Max
RTD 2 or 3 wires		
Pt100	-200°C	850°C
Pt1000	-200°C	200°C
Ni100	-60°C	180°C
Ni1000	-60°C	150°C
Resistance 2 or 3 wires		
Low	0 Ω	500 Ω
High	0 Ω	2000 Ω
POT. (nom. value)		
Low	20 Ω	500 Ω
High	20 Ω	2000 Ω

Input Calibration (1)		
RTD	±0.05 % f.s.	
Res.	±0.05 % f.s	
Pot.	±0.05 % f.s	
Linearity (1)		
RTD	± 0.1 % f.s.	
Lead wire res. influence (1)		
RTD/res.3 wires	$0.05~\%/\Omega~(50~\Omega~max~balanced)$	
RTD excitation current		
Typical	0.350 mA	
Thermal drift (1)		
Full scale	± 0.01 % / °C	
Sample time	0.5 ÷ 1 sec.	
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Warm-up time 3 min.		
(1) Peferred to input Span (di	ifference between may and min values)	

(1) Referred to input Span (difference between max. and min. values)

# **GENERAL DESCRIPTION**

The device DAT 3015I is able to acquire on input up to 4 analog current signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to ± 20mA current signals.

By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- Up to ± 20mA input

- Watch-Dog Alarm

REMOTE I/O MODULE 4 CHANNELS +/-20mA INPUT ON RS-485 NETWORK

- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance







**Application areas** 











# **POWER SUPPLY**

Supply Voltage	10 30 Vdc
Current consumption	30 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

# **ISOLATIONS**

Inputs – RS485	
Power Supply– Input	2000 Vac 50 Hz, 1 min.
Power Supply– RS-485	1 111111.

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	090 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# **HOUSING**

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT		
Input type	Min	Max
Current		
20 mA	-20 mA	+20 mA
Input Calibration (1)		± 20 uA
Linearity (1)		± 0.1% f.s.
Input Impedance		= 50 Ω</td
Thermal drift (1)		
Full scale		± 0.005 % / °C

Sample time		
0.5 ÷ 1 sec.		
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	

(1) Referred to input Span (difference between max, and min, values)

# REMOTE I/O MODULE 4 CHANNELS +/-10V INPUT ON RS-485 NETWORK

# **DAT 3015-V**

# **GENERAL DESCRIPTION**

The device DAT 3015V is able to acquire on input up to 4 analog voltage signals. Data values are transmitted with MODBUS RTU/ ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  10V voltage signals.

By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- Up to ± 10V input

- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





# **Application areas**











POWER SUPPLY		
Supply Voltage	10 30 Vdc	
Current consumption	30 mA @ 24 Vdc	
Rever. Polarity protection	60 Vdc max	
ISOI ATIONS		

Inputs – RS485	
Power Supply– Input	2000 Vac 50 Hz 1 min.
Power Supply– RS-485	

TEMPERATURE & HUMIDITY		
-10°C +60°C		
-40°C +85°C		
0 90 %		

# **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC**

nmunity	EN 61000-6-2
mission	EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT		
Type input	Min	Max
Voltage		
10 V	-10 V	+10 V
Input Calibration (1)		± 10 mV
Linearity (1)		± 0.1% f.s.
Input Impedan	put Impedance	
Thermal drift (1)		
Full scale		± 0.005 % / °C

Sample time		
0.5 ÷ 1 sec.		
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	

(1) Referred to input Span (difference between max. and min. values)

# REMOTE I/O MODULE 4 CHANNEL mV / TC INPUT ON RS-485 NETWORK



# **GENERAL DESCRIPTION**

The DAT 3016 device is able to acquire up to 4 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available). It is possible to connect Thermocouples or up to +/- 1V voltage signals. The Cold Junction compensation for thermocouples is performed internally. By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided. The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions. The DAT 3016 is in compliance with the Directive 2004/108/EC on the electromagnetic compatibility. The device is housed in a rough self-extinguishing plastic container which, thanks to its thin profile of 17.5mm only, allows a high density mounting on EN-50022 standard DIN rail.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- Up to +/- 1V and TC configurable input Type J,K,R,S,B,E,T,N
- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance







# **Application areas**











POWER SUPPLY	
Supply Voltage	10 30 Vdc
Current consumption	30 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max
ISOLATIONS	

Inputs – RS485	20001/ 5011
Power Supply– Input	2000 Vac 50 Hz, 1 min.
Power Supply– RS-485	1 111111.

# **TEMPERATURE & HUMIDITY** Operating Temperature -10°C .. +60°C

-40°C .. +85°C Storage Temperature Humidity (not condensed) 0..90% EMC (for industrial environments)

DIRECTIVE 2004 / 100 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
<b>HOUSING</b>		
	Call and an about the fact of the said	

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT		
Input type	Min	Max
Voltage		
25 mV	-25 mV	+25 mV
100 mV	-100 mV	+100 mV
250 mV	-250 mV	+250 mV
1000 mV	-1000 mV	+1000 mV
Thermocouple		
J	-210 °C	+1200 °C
K	-210 °C	+1372 °C
R	-50 °C	+1767 °C
S	-50 °C	+1767 °C
В	+400 °C	+1825 °C
E	-210 °C	+1000 °C
Т	-210 °C	+400 °C
N	-210 °C	+1300 °C

Input Calibration (1)	
the higher of $\pm$ 0.05% or 5 uV (1)	

Linearity (1)		
mV	± 0.1% f.s.	
TC	± 0.2% f.s.	
CJC Comp.	± 0.5 °C	
Input Impedance		
mV, TC	>=1 MΩ	
Thermal drift (1)		
Full scale	± 0.005 % / °C	
CJC Thermal drift		
Full scale	± 0.02 °C / °C	
Lead wire res. influence (1)		
mV, Tc	< 0.8 uV/Ohm	
Response time	0.5 ÷ 1 sec.	
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Warm-up time	3 min.	

(1) Referred to input Span (difference between max. and min. values)



# **GENERAL DESCRIPTION**

The device DAT 3017I is able to acquire on input up to 8 analog current signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  20mA current signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input
- Up to ± 20mA input

- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





**Application areas** 











POWER SUPPLY		
Supply Voltage	10 30 Vdc	
Current consumption	30 mA @ 24 Vdc	
Rever. Polarity protection	60 Vdc max	

# **ISOLATIONS**

Inputs – RS485	2000 Vac 50 Hz, 1 min.	
Power Supply– Input		
Power Supply– RS-485	1 111111	

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Woight	About 150 a

INPUT			
Type input	Min	Max	
Current			
20 mA	-20 mA	+20 mA	
Input Calibration (1)		± 20 uA	
Linearity (1)		± 0.1% f.s.	
Input Impedance		<=50 Ω	
Thermal drift (1)			
Full scale		± 0.005 % / °C	

# Sample time 0.5 ÷ 2 sec. **Data Transmission (asynchronous serial)** 38.4 Kbps Baud rate Max. Distance 1.2 Km - 4000ft

(1) Referred to input Span (difference between max. and min. values)

# REMOTE I/O MODULE 8 CHANNELS ±10V INPUT ON RS-485 NETWORK

# **DAT 3017-V**

# **GENERAL DESCRIPTION**

The devices DAT 3017V is able to acquire on input up to 8 analog voltage signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  10V voltage signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input
- Up to ± 10V input

- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance



. 30 Vdc



**Application areas** 











Supply Voltage	10
Current consumption	30 r

Current consumption	30 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

# **ISOLATIONS**

**POWER SUPPLY** 

20001/ 5011
2000 Vac 50 Hz, 1 min.

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# HOUSING

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT			
Type input	Min	Max	
Voltage			
10 V	-10 V	+10 V	
Input Calibration (1) ± 10		± 10 mV	
Linearity (1)		± 0.1% f.s.	
Input Impedance		> 100 KΩ	
Thermal drift (1)			
Full scale		± 0.005 % / °C	

# Sample time 0.5 ÷ 2 sec. Data Transmission (asynchronous serial) Baud rate 38.4 Kbps Max. Distance 1.2 Km - 4000ft

(1) Referred to input Span (difference between max. and min. values)

# REMOTE I/O MODULE 8 CHANNELS mV / TC INPUT ON RS-485 NETWORK

# **DAT 3018**

## GENERAL DESCRIPTION

The device DAT 3018 is able to acquire up to 8 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect Thermocouples or up to +/- 1V voltage signals. The Cold Junction compensation for thermocouples is performed internally. By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided. The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input
- Up to  $\pm$  1V and TC configurable input  $\pm$  1V and TC Type J,K, R,S,B,E,T,N
- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance







# **Application areas**









POWER SUPPLY			
Supply Voltage	10 30 Vdc		
Current consumption	30 mA @ 24 Vdc		
Rever. Polarity protection	60 Vdc max		
ISOLATIONS			
Inputs – RS485	200014 5011		
Power Supply– Input	2000 Vac 50 Hz, 1 min		
Power Supply– RS-485	1 111111.		
TEMPERATURE & HUMIDITY			
Operating Temperature	-10°C +60°C		
Storage Temperature	-40°C +85°C		
Humidity (not condensed)	0 90 %		
<b>EMC</b> (for industrial environments)			

Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	
Weight	About 150 a	

**DIRECTIVE 2004 / 108 / EC** 

INPUT	INPUT		
Input type	Min	Max	
Voltage			
25 mV	-25 mV	+25 mV	
100 mV	-100 mV	+100 mV	
250 mV	-250 mV	+250 mV	
1000 mV	-1000 mV	+1000 mV	
Thermocouple			
J	-210 °C	+1200 °C	
K	-210 °C	+1372 °C	
R	-50 °C	+1767 °C	
S	-50 °C	+1767 °C	
В	+400 °C	+1825 °C	
Е	-210 °C	+1000 °C	
Т	-210 °C	+400 °C	
N	-210 °C	+1300 °C	
Input Calibration (1)			

Linearity (1)		
mV	± 0.1% f.s.	
TC	± 0.2% f.s.	
CJC Comp.	± 0.5 °C	
Input Impedance		
mV, TC	>/=1 MΩ	
Thermal drift (1)		
Full scale	± 0.005 % / °C	
Thermal drift CJC		
Full scale	± 0.02 % / °C	
Lead wire res. influence (1)		
mV, TC	< 0.8 uV/Ohm	
Sample time	0.5 ÷ 2 sec.	
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Warm-up time	3 min	

(1) Referred to input Span (difference between max. and min. values)

# REMOTE I/O MODULE 8 CHANNELS RTD INPUT ON RS-485 NETWORK



# **GENERAL DESCRIPTION**

The device DAT 3019 is able to acquire up to 8 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect 2-wires RTD sensors or up to 2  $K\Omega$  resistance signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel 2 wires input
- Pt100, Pt1K, Ni100, Ni1K and resistance up to 2 K $\Omega$ configurable input
- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- **High Accuracy**
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





Application areas









Supply voltage	10 30 Vac
Current consumption	30 mA @ 24 Vdc
Rever. Polarity protection	60 Vdc max

# **ISOLATIONS**

Inputs – RS485	2000 1/ 50 11
Power Supply– Input	2000 Vac 50 Hz, 1 min.
Power Supply– RS-485	1 111111.

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# HOUSING

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

INPUT		
Input type	Min	Max
RTD 2 wires		
Pt100	-200°C	850°C
Pt1000	-200°C	200°C
Ni100	-60°C	180°C
Ni1000	-60°C	150°C
Resistance 2 or 3 wires		
Low	0 Ω	500 Ω
High	0 Ω	2000 Ω

Input Calibration (1)		
RTD	±0.2 % f.s.	
Res.	±0.2 % f.s	
Linearity (1)		
RTD	± 0.2 % f.s.	
Excitation current RTD		
Typical	0.450 mA	
Thermal drift (1)		
Full scale	± 150 ppm/ °C	
Sample time	0.5 ÷ 2 sec.	
Data Transmission (asynchronous serial)		
Baud rate	38.4 Kbps	
Max. Distance	1.2 Km - 4000ft	
Warm-up time	3 min.	
(d) D-fd t it C (diff b-t di l		

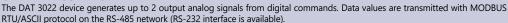
(1) Referred to input Span (difference between max. and min. values)

**DAT 3022** 

DAT3000 SERIES

# REMOTE I/O MODULE 2 CHANNEL V / mA OUTPUT ON RS-485 NETWORK

# **GENERAL DESCRIPTION**



It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, al-

lowing the use of the device even in the heavy environmental conditions.

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 2 channel output
- Voltage or Current configurable outputs

# - Watch-Dog Alarm

- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





**Application areas** 









# **POWER SUPPLY**

Supply Voltage	18 30 Vdc
Current consumption	typ. 35 mA @ 24 Vdc 60 mA max
Rever. Polarity protection	60 Vdc max

# **ISOLATIONS**

Output – RS485	
Power Supply- Output	2000 Vac 50 Hz 1 min.
Power Supply– RS-485	

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# HOUSING

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

OUTPUT			
Output type	М	in	Max
Voltage			
V	0 V		+10 V
Current			
mA	0 r	nΑ	+20 mA
Output calibration			
Voltage		±10 mV	
Current		±20 mA	
Load Resistance			
Voltage		> 5 KΩ	
Current < 500 Ω			

Thermal drift	
Full scale	100 ppm /°C
Auxiliary Voltage	> 12V @ 20mA (2 channels)

# Rise time

Analog output Slew-rate

(independent programmation for each channel)

Voltage V/s	Current mA/s
0.125	0.250
0.250	0.500
0.500	1.000
1.000	2.000
2.000	4.000
4.000	8.000
Immediate	Immediate

Data Transmission (asynchronous serial)		
Baud rate	115.2 Kbps	
Max. Distance	1.2 Km - 4000ft	

# REMOTE I/O MODULE 4 CHANNELS V / mA OUTPUT ON RS-485 NETWORK

# **DAT 3024**

# **GENERAL DESCRIPTION**

The device DAT 3024 generates up to 4 output analog signals from digital commands. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature.

To ensure the plant safety, two Watch-Dog timer alarms are provided. The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the

# **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type

device even in the heavy environmental conditions.

- MODBUS RTU/ASCII protocol
- 4 channel output
- Voltage or Current configurable outputs

- Watch-Dog Alarm
- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





**Application areas** 











# **POWER SUPPLY**

Supply Voltage	18 30 Vdc
Current consumption	typ. 35 mA @ 24 Vdc 100 mA max
Rever. Polarity protection	60 Vdc max

# **ISOLATIONS**

Output – RS485	
Power Supply- Output	2000 Vac 50 Hz, 1 min.
Power Supply– RS-485	

# **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C
Storage Temperature	-40°C +85°C
Humidity (not condensed)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# HOUSING

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

OUTPUT			
Output type	М	in	Max
Voltage			
V	0	V	+10 V
Current			
mA	0 r	nΑ	+20 mA
Output calibration			
Voltage			±10 mV
Current			±20 mA
Load Resistance			
Voltage		> 5 KΩ	
Current		< 500 Ω	

# Thermal drift Full scale 100 ppm /°C **Auxiliary Voltage** > 12V @ 20mA (4 channels)

# Rise time

Analog output Slew-rate

(independent programmation for each channel)

Voltage V/s	Current mA/s
0.125	0.250
0.250	0.500
0.500	1.000
1.000	2.000
2.000	4.000
4.000	8.000
Immediate	Immediate

Data Transmission (asynchronous serial)		
Baud rate	115.2 Kbps	
Max. Distance	1.2 Km - 4000ft	

# **REMOTE I/O MODULE 8 CHANNELS VOLTAGE OUTPUT ON RS-485 NETWORK**

# **DAT 3028**

# **GENERAL DESCRIPTION**

The device DAT 3028 generates up to 8 output analog signals from digital commands. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to generate voltage signals up to 10V.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (o RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.r

# **FEATURES**

Field-Bus remote data acquisition

- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel 0-10 V output
- Watch-Dog Alarm

- Configurable from a remote terminal
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance





**Application areas** 









	•
POWER SUPPLY	

Supply Voltage 18 .. 30 Vdc typ. 35 mA @ 24 Vdc 100 mA max Current consumption Rever. Polarity protection 60 Vdc max

# **ISOLATIONS**

Output - RS485

2000 Vac 50 Hz. Power Supply- Output 1 min. Power Supply- RS-485

# **TEMPERATURE & HUMIDITY**

-10°C .. +60°C Operating Temperature Storage Temperature -40°C .. +85°C 0 .. 90 % Humidity (not condensed)

# **EMC** (for industrial environments) **DIRECTIVE 2004 / 108 / EC**

Immunity EN 61000-6-2 Emission EN 61000-6-4

HOUSING	
Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 17.5
Weight	About 150 g.

ОИТРИТ			
Output type	Output type Min		Max
Voltage			
V	0 V		+10 V
Output calibration ±10 mV		±10 mV	
Load Resistance		> 5 KΩ	
Thermal drift			
Full scale 100 pp		100 ppm	/°C

# Rise time Analog output Slew-rate (independent programmation for each channel)

Voltage V/s	
0.125	
0.250	
0.500	
1.000	
2.000	
4.000	
Immediate	

Data Transmission (asynchronous serial)		
Baud rate	115.2 Kbps	
Max. Distance	1.2 Km - 4000ft	



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## GENERAL DESCRIPTION

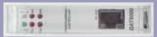
The device DAT9000 is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value.

Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to:

- Programming of the Control Logic
- Monitor, request of data, programming in real time the Intelligent Unit
   Direct programming and request of data from the Slave devices connected on the RS-485 Master.

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- Functional Block programming software
- Remotely programmable

- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard









# **Application areas**











CURRENT	CONSUMPTION
10 ÷ 30 Vdc	

**POWER SUPPLY** 

45 mA typ.@24Vdc (standby)

80 mA max

# **ISOLATIONS**

Power supply / Ethernet 1500 Vac, 50 Hz, Power supply / RS485 1 min. Ethernet / RS485

# **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C ÷ +60°C
Storage temperature	-40°C ÷ +85°C
Relative humidity (not cond.)	0 ÷ 90 %

# CONNECTIONS

Ethernet	RJ-45 (on terminals side)
RS-232D	RJ-45 (on front side)
RS-485 Master / Slave	Remov. screw terminals

# **EMC** (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

Immunity EN 61000-6-2 EN 61000-6-4 **Emission HOUSING** 

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 22.5
Weight	About 160 g.

Network interface	
Ethernet	10 Base-T
Protocol	Modbus TCP
RS-485 Interface	
Baud-rate	up to 38.4 Kbps
Max. distance (1)	1.2 Km @ 38.4 Kbps
Number of modules in multipoint	up to 32
Internal termination resistance	120 Ohm (optional)

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

# INTELLIGENT UNIT WITH DATA-LOGGER AND ETHERNET INTERFACE



The device DAT9000 DL is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working, managing up to 8 task of recording memorized on files saved on the microSD card. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. By Ethernet it is possible to get access to the files saved on the microSD card when the Data-Logger function is active.

Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to: Programming of the Control Logic; Monitor, request of data, programming in real time the Intelligent Unit; Direct programming and request of data from the Slave devices connected on the RS-485 Master.

# **FEATURES**

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- N.1 slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- Functional Block programming software
- Remotely programmable

- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- Galvanic Isolation on all the ways
- FMC compliance CF mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard









# **Application areas**











# **POWER SUPPLY**

10 ÷ 30 Vdc

# **CURRENT CONSUMPTION**

45 mA typ.@24Vdc (standby)

100 mA max

# **ISOLATIONS**

Power supply / Ethernet 1500 Vac, 50 Hz, Power supply / RS485 1 min Fthernet / RS485

# **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C ÷ +60°C
Storage temperature	-40°C ÷ +85°C
Relative humidity (not cond.)	0 ÷ 90 %

# CONNECTIONS

Ethernet RJ-45 (on terminals side) RS-232D RJ-45 (on front side) RS-485 Master / Slave Remov. screw terminals

EMC (for industrial environments)

# **DIRECTIVE 2004 / 108 / EC**

FN 61000-6-2 Immunity Emission EN 61000-6-4

# **HOUSING**

Material	Self-extinguishing plastic
Mounting	DIN rail
Dim. (mm)	W x L x H : 120 x 100 x 22.5
Weight	About 160 g.

# **Network interface** Ethernet 10 Base-T Modbus TCP Protocol **RS-485 Interface** Baud-rate up to 38.4 Kbps Max. distance (1) 1.2 Km @ 38.4 Kbps Number of modules up to 32 in multipoint Internal termination 120 Ohm (optional) resistance **Compatible SD card** Туре microSD Up to 8 GB Memory size FAT16 or FAT32 Format

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

# INTELLIGENT UNIT WITH ETHERNET INTERFACE AND DIGITAL I/O

# **DAT 900010**

# **GENERAL DESCRIPTION**

The device DAT9000IO is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. Moreover, the device is equipped with 4 digital inputs channels and 2 relay outputs. On digital inputs are available

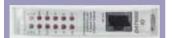
32-bit counters and the measure of the frequency up to 300Hz.

By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to:

- Programming of the Control Logic
- Monitor, request of data, programming in real time the Intelligent Unit.
- Direct programming and request of data from the Slave devices connected on the RS-485 Master.

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- N.4 Digital Inputs
- N.2 SPDT Relay Outputs
- Functional Block programming software
- Remotely programmable

- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard





















POWER SUPPLY		CONNECTIONS		TEMPERATURE & HUMIDITY	
18 ÷ 30 Vdc		Ethernet	Ethernet RJ-45 (on terminals side)		-20°C +60°C
CURRENT CONSUM	PTION	RS-232D	RJ-45 (on front side)	Storage temperature	-40°C +85°C
45 mA typ.@24Vdc (	standby)	RS-485 Master / Slave	RS-485 Master / Slave Remov. screw terminals		40 C :: 103 C
100 mA max		ISOLATIONS		Relative humidity (not co	ond.) 0 90 %
EMC (for industrial	environments)	Power supply / Ethernet		HOUSING	
DIRECTIVE 2004 / 108 / EC		1500 Vac, 50 Hz, 1 min.	Material	Self-extinguishing plastic	
		Ethernet / RS-485		Mounting	DIN rail
Immunity	EN 61000-6-2	Inputs / RS-485	2000 Vac, 50 Hz,	Dimensions (mm)	W x L x H : 120 x 100 x 22.5
Emission	EN 61000-6-4	Inputs / Power supply	1 min.	Weight	About 190 g.

DIGITAL INPUTS		
Channels	4	
Input voltage (bipolar)		
OFF state	0 ÷ 3 V	
ON state	10 ÷ 30 V	
Impedance	4.7 ΚΩ	
Frequency	up to 300 Hz	
Network interface		
Ethernet	10Base-T	
Protocol	Modbus TCP	
RS-485 Interface		
Baud-rate	up to 38.4 Kbps	
Max. distance (1)	1.2 Km @ 38.4 Kbps	
Number of modules in multipoint	up to 32	
Internal termination resistance	120 Ohm (optional)	

DIGITAL OUTPUTS		
Channels	nannels 2	
Туре	SPDT Relays	
Switching Power (max.)		
2 A @ 250 Vac (resistive	load) per contact	
2 A @ 30 Vdc (resistive lo	oad) per contact	
Minimum load 5Vdc , 10mA		
Max. voltage		
250Vac (50 / 60 Hz) , 30Vdc		
Dielectric strength between contacts		
1000 Vac, 50 Hz, 1 min.		
Dielectric strength between coil and contacts		
4000 Vac, 50 Hz, 1 min.		

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

**DAT 9000-DL-IO** 

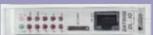
# **GENERAL DESCRIPTION**

The device DAT9000-DL-IO is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for He system working, managing up to 8 task of recording memorized on files saved on the microSD card. The device is equipped with 4 digital inputs channels and 2 relay outputs. For the digital inputs, are also available 32 bit counters and the measure of the frequency up to 300 Hz. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. By Ethernet it is possible to get access to the files saved on the microSD card when the Data-Logger function is active. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to: Programming of the Cartes Logic Monitor, request of data programming in real time the Intelligent Unit. Direct programming and request of data the Control Logic; Monitor, request of data, programming in real time the Intelligent Unit; Direct programming and request of data from the Slave devices connected on the RS-485 Master.

# **FEATURES**

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- N.1 slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- N.4 Digital Inputs + N.2 SPDT Relays
- Functional Block programming software
- Remotely programmable

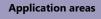
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital input and output state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard





















			$\mathcal{L}$		
POWER SUPPLY		CONNECTIONS		TEMPERATURE & HU	JMIDITY
18 ÷ 30 Vdc		Ethernet	RJ-45 (on terminals side)	Operative temperatur	re -20°C +60°C
CURRENT CONSUM	IPTION	RS-232D	RJ-45 (on front side)	Storage temperature	-40°C +85°C
45 mA typ.@24Vdc (	standby)	RS-485 Master / Slave	Remov. screw terminals	Storage temperature	10 2 103 2
100 mA max		ISOLATIONS		Relative humidity (not	cond.) 0 90 %
EMC (for industrial environments) Power supply / Ethernet			HOUSING		
DIRECTIVE 2004 / 108 / EC		Power supply / RS485	1500 Vac, 50 Hz, 1 min.	Material	Self-extinguishing plastic
ZZ, 1.	,	Ethernet / RS485		Mounting	DIN rail
Immunity	EN 61000-6-2	Inputs / RS485 2000 Vac, 50 Hz,		Dimensions (mm)	W x L x H : 120 x 100 x 22.5
Emission	EN 61000-6-4	Inputs / Power supply 1 min.		Weight	About 160 g.

DIGITAL INPUTS			
Channels	4		
Input voltage (bipolar)			
OFF state	0 ÷ 3 V		
ON state	10 ÷ 30 V		
Impedance	4.7 ΚΩ		
Network interface			
Ethernet	10Base-T		
Protocol	Modbus TCP		
RS485 Interface			
Baud-rate	up to 38.4 Kbps		
Max. distance (1)	1.2 Km @ 38.4 Kbps		
Number of modules in multipoint	up to 32		
Internal termination resistance	120 Ohm (optional)		
Compatible SD card			
Туре	microSD		
Memory size	Up to 8 GB		
Format	FAT16 or FAT32		

Weig	Weight		
DIGITAL OUTPUTS			
Channels	2		
Туре	SPDT Relays		
Switching Power (max.)			
2 A @ 250 Vac (resistive	oad) per contact		
2 A @ 30 Vdc (resistive lo	oad) per contact		
Minimum load	5Vdc, 10mA		
Max. voltage	Max. voltage		
250Vac (50 / 60 Hz), 30Vdc			
Dielectric strength between contacts			
1000 Vac, 50 Hz, 1 min.			
Dielectric strength between coil and contacts			
4000 Vac, 50 Hz, 1 min.			

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

# INTELLIGENT UNIT WITH ETHERNET INTERFACE AND DIGITAL AND ANALOGUE I/O

# **DAT 9011**



# **GENERAL DESCRIPTION**

The device DAT9011 is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. The device is equipped with one universal analogue input channel, one channel for Volt and mA input, two digital inputs and 2 relay outputs. On input an Auxiliary source is available to supply passive sensors on the field.

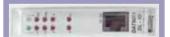
By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal

registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to program the Control Logic, to monitor, to request data and programming in real time the Intelligent Unit, to program directly the Slave devices connected on the RS-485 Master and to request data from them.

# **FEATURES**

- N°1 serial interface RS-485 Modbus RTU Master
- N°1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- N°1 universal analogue input + N°1 current and voltage analogue input
- N°2 digital Inputs
- Auxiliary supply to power sensors on field
- N°2 passive 4-20 mA analogue outputs
- N°2 SPDT Relay Outputs
- Functional Block programming software

- Remotely programmable
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard









**Application areas** 











POWER SUPPLY	
Power supply Voltage	9 ÷ 30 Vdc
Current consumption @ 24 Vdc	60 mA (170 mA max)
Current consumption @ 10 Vdc	147 mA (300 mA max)
Reverse polarity protection	60 Vdc max

# **EMC (for industrial environments)**

# **DIRECTIVE 2004 / 108 / EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

CONNECTIONS	
Ethernet	RJ-45 (on terminals side
RS-232D	RJ-45 (on front side)
RS-485 Master / Slave Outputs Relay	Screw terminals pitch 5.08mm
Supply/Inputs/ Analogue outputs	Screw terminals pitch 3.81mm
ISOLATIONS	

ISOLATIONS	
Isolations voltage	1500 Vac
(50 Hz, 1 min.)	(on all the wa

Sensor excitation current

RTD, Res, Pot

N°2 Digital counter

	TEMPERATURE & HUMIDITY			
)	Operative temperature	-20°C +60°C		
	Storage temperature	-40°C +85°C		
	Relative humidity (not cond.)	0 90 %		
	HOUSING			

	HOUSING	
	Material	Self-extinguishing plastic
	Mounting	DIN rail
	Dimensions (mm)	W x L x H : 120 x 100 x 22.5
;)	Weight	About 190 g.

32 bit (up to 300 Hz)

ANALOGUE INPUTS				
Туре	Range	Calibration	Linearity	Thermal Drift
100 mV	-100 ÷ +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
10 V	-10 ÷ +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
20 mA	-20 ÷ +20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt100	-200 ÷ +850 ℃	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt1K	-200 ÷ +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni100	-60 ÷ +180 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni1K	-60 ÷ +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Res	0 ÷ 2000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pot	20 ÷ 50000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc J	-210 ÷ +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc K	-210 ÷ +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc R	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C
Tc S	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C
Тс В	+400 ÷ +1825 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc E	-210 ÷ +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc T	-210 ÷ +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc N	-210 ÷ +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Input impedance		Tc, mV $>= 10 \text{ M}\Omega$		
		Volt >= 1 N	Volt >= 1 MΩ	
		Current ~ 22 Ω		

				D
100 mV	-100 ÷ +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
10 V	-10 ÷ +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
20 mA	-20 ÷ +20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt100	-200 ÷ +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pt1K	-200 ÷ +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni100	-60 ÷ +180 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Ni1K	-60 ÷ +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Res	0 ÷ 2000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Pot	20 ÷ 50000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc J	-210 ÷ +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Тс К	-210 ÷ +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc R	-50 ÷ +1760 ℃	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C
Tc S	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C
Тс В	+400 ÷ +1825 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc E	-210 ÷ +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc T	-210 ÷ +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Tc N	-210 ÷ +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
		Tc, mV $>= 10 M\Omega$		
Input impedance		Volt $>= 1 M\Omega$		
		Current ~ 22 Ω		
Auxiliary voltage		>14 V @ 20	mA	
Line res	Line resistance influence			
RTD 3 w	wires $0.05 \%/\Omega (50 \Omega \text{ max})$			
mV, Tc		< 0.8 uV/O	< 0.8 uV/Ohm	

CJC comp.	± 1 °C	
Sample time	1 sec.	
Warm-up time (TC,RTD)	3 min.	
DIGITAL INPUTS		
Channels	2	
Input voltage (bipolar)	OFF state : 0÷3 V	
input voitage (bipolar)	ON state : 10÷30 V	
Input impedance	4.7 KOhm	

~ 400 uA

ANALOGUE OUTPUTS (2 CHANNELS)				
Туре	Range	Calibration	Linearity	Thermal Drift
20 mA	4÷+20 mA	±0.05 % f.s.	±0.05 % f.s.	100 ppm/°C

DIGITAL OUTPUTS		
N.2 SPDT Relays		
Switching Power (resistive load)	2 A @ 250 Vac (per contact)	
Switching Power (resistive load)	2 A @ 30 Vdc (per contact)	
Minimum load	5Vdc , 10mA	
Max. voltage	250Vac (50 / 60 Hz) ,110Vdc	
Dielectric strength between contacts	1000 Vac, 50 Hz, 1 min.	
Dielectric strength between coil and contacts	4000 Vac, 50 Hz, 1 min.	
Covial Doute DC / OF (Master 9 Clave)		

Serial Ports RS-485 (Master & Slave)		
Protocol	Modbus RTU	
Baud Rate	up to 115.2 Kbps	
Max. recommended distance (1)	1.2 Km @ 38.4 Kbps	
Number of modules in multipoint	up to 32	
Internal termination resistance	120 Ohm (optional)	

# INTELLIGENT UNIT WITH DATA-LOGGER FUNCTION, ETHERNET INTERFACE AND DIGITAL AND ANALOGUE I/O

# **DAT 9011-DL**



# GENERAL DESCRIPTION

The device DAT9011-DL is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working and managing up to 8 tasks of storage data. The data are saved on microSD card; it is possible to get access to the saved files by means of the Ethernet connection. The device is equipped with one universal analogue input channel, one channel for Volt and mA input, two digital inputs and 2 relay outputs. On input an Auxiliary source is available to supply passive sensors on the field. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to program the Control Logic,to monitor, to request data and programming in real time the Intelligent Unit,to program directly the Slave devices connected on the RS-485 Master and to request data from them.

# **FEATURES**

- N°1 serial interface RS-485 Modbus RTU Master
- N°1 serial interface RS-485/232 Modbus RTU Slave
- N°1 Slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- N°1 universal analogue input + N°1 current and voltage analogue input
- N°2 digital Inputs
- Auxiliary supply to power sensors on field
- N°2 passive 4-20 mA analogue outputs
- N°2 SPDT Relay Outputs

- Functional Block programming software
- Remotely programmable
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022









**Application areas** 







**TEMPERATURE & HUMIDITY** 





W x L x H : 120 x 100 x 22.5

POWER SUPPLY			
Power supply Voltage	9 ÷ 30 Vdc		
Current consumption @ 24 Vdc	60 mA (170 mA max)		
Current consumption @ 10 Vdc	147 mA (300 mA max)		
Reverse polarity protection	60 Vdc max		

# **EMC (for industrial environments)**

# **DIRECTIVE 2004 / 108 / EC**

DAT9000 SERIES

70

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

CONNECTIONS			
Ethernet	RJ-45 (on terminals side		
RS-232D	RJ-45 (	(on front side)	
RS-485 Master / Slave	Screw terminals pitch 5.08mm		
Outputs Relay			
Supply/Inputs/ Analogue outputs	Screw terminals pitch 3.81mm		
ISOLATIONS			
Isolations voltage (50 Hz, 1 min.)	е	1500 Vac (on all the ways	

.ATIONS	
	1500 Vac (on all the ways)

e)	Operative temperature		-20°C +60°C
	Storage temperature		-40°C +60°C
	Relative humidity (not cond.)		0 90 %
	HOUSING		
	Material Self-ex		ctinguishing plastic
	Mounting DIN ra		il

	(on all the ways) Weight	About 190 g.	
DIGITAL INPUTS Channels			
		2	
Input voltage (bipolar)	OFF state: 0÷3 V		
Input voltage (bipolar)  Input impedance  N°2 Digital counter		ON state : 10÷30 V	
		4.7 KOhm	
		32 bit (up to 300 Hz)	

Dimensions (mm)

ANALOGUE OUTPUTS (2 CHANNELS)				
Туре	Range	Calibration	Linearity	Thermal Drift
20 mA	4÷+20 mA	±0.05 % f.s.	±0.05 % f.s.	100 ppm/°C

# **DIGITAL OUTPUTS N.2 SPDT Relays** 2 A @ 250 Vac (per contact) Switching Power (resistive load) 2 A @ 30 Vdc (per contact) Minimum load 5Vdc, 10mA 250Vac (50 / 60 Hz) ,110Vdc Max. voltage Dielectric strength between contacts 1000 Vac, 50 Hz, 1 min. Dielectric strength between 4000 Vac, 50 Hz, 1 min. coil and contacts

	Į.	
Serial Ports RS-485 (Master & Slave)		
Protocol	Modbus RTU	
Baud Rate	up to 115.2 bps	
Max. distance (1)	1.2 Km @ 38.4 Kbps	
Number of modules in multipoint	up to 32	
Internal termination resistance	120 Ohm (optional)	

٦	Compatible SD card	
4	Туре	microSD
	Memory size	Up to 8 GB
	Format	FAT16 or FAT32
	(1) - The maximum distance depends of number of devices conn	

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

				(30 112, 1 111111.)	
ANALO	ANALOGUE INPUTS				
Туре	Range	Calibration	Linearity	Thermal Drift	
100 mV	-100 ÷ +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
10 V	-10 ÷ +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
20 mA	-20 ÷ +20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt100	-200 ÷ +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt1K	-200 ÷ +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni100	-60 ÷ +180 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni1K	-60 ÷ +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Res	0 ÷ 2000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pot	20 ÷ 50000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc J	-210 ÷ +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc K	-210 ÷ +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc R	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C	
Tc S	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C	
Тс В	+400 ÷ +1825 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc E	-210 ÷ +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc T	-210 ÷ +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc N	-210 ÷ +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Input impedance		Tc, mV $>= 10 M\Omega$			
		Volt >= 1 N	Volt >= 1 MΩ		
		Current ~ 2	Current ~ 22 Ω		
	-				

	10 11122
Input impedance	Volt $>= 1 M\Omega$
	Current ~ 22 Ω
Auxiliary voltage	>14 V @ 20 mA
Line resistance influence	
RTD 3 wires	0.05 %/Ω (50 Ω max)
mV, Tc	< 0.8 uV/Ohm

Sensor excitation current	
RTD, Res, Pot	~ 400 uA
CJC comp.	±1°C
Sample time	1 sec.
Warm-up time (TC,RTD)	3 min.



# GENERAL DESCRIPTION

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

- Acquisition of analogue signals on PLC's digital I/O
   Analogue input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 2 input channels
- Configurable input for voltage up to ± 1V or Tc type J,K, R,S,B,E,T,N
- Configurable by DIP-switch
- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





# **Application areas**









POWER SUPPLY	
Power supply voltage	18 30 Vdc
Current consumption	30 mA @ 24 V
Rever. polarity protection	60 Vdc max

# **ISOLATION VOLTAGE**

INPUT – PLC	200011
Power supply– INPUT	2000 Vac 50 Hz, 1 min.
Power supply– PLC	30 112, 1 111111.

# **TEMPERATURE AND HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not cond)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC** Immunity FN 61000-6-2

iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	LIV 01000 0 Z
Emission	EN 61000-6-4

# HOUSING

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT		
Input type	Min	Max
Voltage		
50 mV	-50 mV	+50 mV
100 mV	-100 mV	+100 mV
500 mV	-500 mV	+500 mV
1000 mV	-1000 mV	+1000 mV
Thermocouple		
J	-210 °C	+1200 °C
K	-210 °C	+1372 °C
R	-50 °C	+1767 °C
S	-50 °C	+1767 °C
В	+400 °C	+1825 °C
E	-210 °C	+1000 °C
Т	-210 °C	+400 °C
N	-210 °C	+1300 °C
INPUT CHANNELS 2		
Input calibration (1) ±0.05% f.s.		±0.05% f.s.
Linearity (1)		
mV	± 0.1 % f.s.	
Тс	± 0.2 % f.s.	
Cold junction compensation ± 0.5 °C		

Input impedance		
mV, Tc	>= 1 MΩ	
Thermal drift (1)		
Full Scale	± 0.005 % / °C	
Thermal drift CJC		
Full Scale	± 0.02 %/ °C	
Line resistance influence		
mV, Tc	< 0.8 uV/Ohm	

DIGITAL INTERFACE		
Voltage on terminals	typical 24 Vdc (30 Vdc max.)	
ON state	>9 Vdc	
Input impedance		
(ENABLE, CLK)	4.7 KOhm	
Minimum output load		
(DATA)	560 Ohm (2)	
Max. frequency		
Clock signal	500 Hz	
Rise / Fall time	(Tr) < 0.2 ms	

(1) referred to input Span (difference between max. and min. values) (2) The load on the output DATA is controlled with the current taken from the ENABLE signal.

# A/D INTERFACE FOR PLC 2 INPUT CHANNELS FOR RTD, Res

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC.

The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

# **FEATURES**

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 2 input channels
- Configurable input for Pt100, Pt1000, Ni100, Ni1000, Resistance and Potentiometers up to 2 Kohm
- Configurable by DIP-switch
- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



\* nominal value



# **Application areas**



RTD, Res

ON state

(DATA)

Clock signal

Thermal drift (1) Full Scale



Line resistance influence

(50 Ω max , 3 wires connection)

**DIGITAL INTERFACE** Voltage on terminals

Input impedance (ENABLE, CLK)

Max. frequency

Minimum output load





± 0.005 % / °C

< 0.05%/Ohm

>9 Vdc

4.7 KOhm

560 Ohm (2)

500 Hz

typical 24 Vdc (30 Vdc max.)



# **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Current consumption	30 mA @ 24 Vdd
Rever. polarity protection	60 Vdc max

# **ISOLATION VOLTAGE**

INPUT – PLC	2000 17
Power supply– INPUT	2000 Vac 50 Hz, 1 min.
Power supply- PLC	30 112, 1111111.

# **TEMPERATURE AND HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not cond)	090 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC**

HOUSING	
Emission	EN 61000-6-4
Immunity	EN 61000-6-2

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT			
Input type	Min		Max
RTD			
Pt100	-200 °C		+850 °C
Pt1000	-200 °C		+200 °C
Ni100	-80 °C		+180 °C
Ni1000	-60 °C		+150 °C
Resistance			
500 Ω	0 Ω		500 Ω
2 ΚΩ	0 Ω		2000 Ω
Potentiometer			
< 500 Ω*	0 %		100 %
< 2 KΩ*	0 %		100 %
Input channels 2			2
Input calibration (1) ±0.1 % f.s.		±0.1 % f.s.	
Linearity (1)			
Res, Pot.	± 0.1 % f.s.		
RDT	± 0.2 % f.s.		
RTD / Res. excitation current 0.350 mA typ.			

Rise / Fall time	(Tr) < 0.2 ms
(1) referred to input Span (differ	ence between max. and min
values) (2) The load on the output DATA	A is controlled with the cur-

rent taken from the ENABLE signal

# A/D INTERFACE FOR PLC 2 INPUT CHANNELS FOR V, mA

# **DAT 6013**

# **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 2 input channels
- Configurable input for ± 10 V and ± 20 mA
- Configurable by DIP-switch
- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





# **Application areas**











POWER SU	JPPLY	
Power supply	y voltage	18 30 Vdc
Current cons	sumption	30 mA @ 24 Vdc
Rever. polari	ty protection	60 Vdc max
ISOLATION	N VOLTAGE	
INPUT - PLC		
Power supply	y– INPUT	2000 Vac 50 Hz, 1 min.
Power supply	y– PLC	30 112, 1 111111.
TEMPERAT	TURE AND I	HUMIDITY
Operative ter	mperature	-10°C +60°C
Storage temperature		-40°C +85°C
Humidity (not cond)		0 90 %
<b>EMC</b> (for industrial environments)		
DIRECTIVE	2004/108/	EC
Immunity	EN 61000-6-2	
Emission EN 61000-6-4		4
HOUSING		
Material	Self-extinguishing plastic	
Dim. (mm)	W x L x H : 90 x 112 x 12.5	
Weight	about 90 g.	

INPUT			
Input type	Min		Max
Voltage			
10 V	-10 V		+10 V
Current			
20 mA	-20 mA		+20 mA
Input channels			2
Input calibration (1) ±0.1 % f.s.			
Linearity (1)			±0.1 % f.s.
Input impedan	ce		
V	>	= 100	) ΚΩ
mA	<	= 50	Ω
Thermal drift (1	)		
Full Scale	±	0.00	5 % / ℃

DIGITAL INTERFACE	
Voltage on terminals	typical 24 Vdc (30 Vdc max.)
ON state	>9 Vdc
Input impedance	
(ENABLE, CLK)	4.7 KOhm
Minimum output load	
(DATA)	560 Ohm (2)
Max. frequency	
Clock signal	500 Hz
Rise / Fall time	(Tr) < 0.2 ms
(1) referred to input Span (diff	erence between max, and min.

- (2) The load on the output DATA is controlled with the current taken from the ENABLE signal

# A/D INTERFACE FOR PLC 4 INPUT CHANNELS FOR mV, TC

# **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

- Acquisition of analogue signals on PLC's digital I/O
- Analogue input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 4 input channels
- Configurable input for ± 1 V or Tc type J,K, R,S,B,E,T,N
- Configurable by DIP-switch

- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





# **Application areas**











POWER	SUPPLY
Power sur	nly voltage

6021

DAT

ISOLATION VOLTAGE	
Rever. polarity protection	60 Vdc max
Current consumption	30 mA @ 24 Vdc
117	

18 .. 30 Vdc

# INPUT - PLC

<b>TEMPERATURE AND H</b>	HUMIDITY
Power supply– PLC	30 1.2, 11
Power supply– INPUT	50 Hz. 1 min.

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not cond)	0 90 %

# **EMC** (for industrial environments)

DIRECTIVE	2004/108/EC
Immunity	ENI 61000-6-2

Emission EN 61000-6-4

HOL	JSING	

Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT			
Input type	Min	Max	
Voltage			
50 mV	-50 mV	+50 mV	
100 mV	-100 mV	+100 mV	
500 mV	-500 mV	+500 mV	
1000 mV	-1000 mV	+1000 mV	
Thermocouple			
J	-210 °C	+1200 °C	
K	-210 °C	+1372 °C	
R	-50 °C	+1767 °C	
S	-50 °C	+1767 °C	
В	+400 °C	+1825 °C	
E	-210 °C	+1000 °C	
T	-210 °C	+400 °C	
N	-210 °C +1300 °C		
Input channels 4			
Input calibration (1) ±0.05 % f.s.		±0.05 % f.s.	
Linearity (1)			
mV	± 0.1 % f.s.		
Tc	t 0.2 % f.s.		
<b>Cold junction compensation</b> ± 0.5 °C			

Input impedance		
mV, Tc	>= 1 MΩ	
Thermal drift (1)		
Full Scale	± 0.005 % / °C	
Thermal drift CJC		
Full Scale	± 0.02 %/ °C	
Line resistance influence		
mV, Tc	< 0.8 uV/Ohm	

DIGITAL INTERFACE			
Voltage on terminals	typical 24 Vdc (30 Vdc max.)		
ON state	>9 Vdc		
Input impedance			
(ENABLE, CLK)	4.7 KOhm		
Minimum output load			
(DATA)	560 Ohm (2)		
Max. frequency			
Clock signal	500 Hz		
Rise / Fall time (Tr) < 0.2 ms			
(4) (	and the contract of the contract of		

(1) referred to input Span (difference between max. and min. values) (2) The load on the output DATA is controlled with the current taken from the ENABLE signal

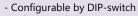


The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC.

The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

# **FEATURES**

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 4 input channels
- Configurable input for ± 20 mA



- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





# **Application areas**









POWER SUPPLY		
Power supply voltage	18 30 Vdc	
Current consumption	30 mA @ 24 Vdc	
Rever. polarity protection	60 Vdc max	
ISOLATION VOLTAGE		

INPUT – PLC	22221
Power supply- INPUT	2000 Vac 50 Hz. 1 min.
Power supply– PLC	30 112, 1111111.

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not cond)	0 90 %

# **EMC** (for industrial environments)

# DIRECTIVE 2004/108/EC

Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		

Material	Self-extinguishing plas
Dim. (mm)	W x L x H : 90 x 112 x 12
Weiaht	about 90 g.

INPUT				
Input type	Min		Max	
Current				
20 mA	-20 mA		+20 mA	
Input channels			4	
Input calibration (1)		±0.1 % f.s.		
Linearity (1)		±0.1 % f.s.		

Input impedance	
mA	<= 50 Ω
Thermal drift (1)	
Full Scale	± 0.005 % / °C

DIGITAL INTERFACE		
Voltage on terminals	typical 24 Vdc (30 Vdc max.)	
ON state	>9 Vdc	
Input impedance		
(ENABLE, CLK)	4.7 KOhm	
Minimum output load		
(DATA)	560 Ohm (2)	
Max. frequency		
Clock signal	500 Hz	
Rise / Fall time	(Tr) < 0.2 ms	
(1) referred to input Coon (diff	aronce between may and min yalu	

(1) referred to input Span (difference between max. and min. values) (2) The load on the output DATA is controlled with the current taken from the ENABLE signal

# A/D INTERFACE FOR PLC 4 INPUT CHANNELS FOR +/- 10V

# **DAT 6023-V**

# **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC.

The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 4 input channels
- Configurable input for ± 10 V

- Configurable by DIP-switch
- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035





# **Application areas**









# **POWER SUPPLY**

Power supply voltage	18 30 Vdc
Current consumption	30 mA @ 24 Vdc
Rever. polarity protection	60 Vdc max

# **ISOLATION VOLTAGE**

INPUT – PLC	
Power supply– INPUT	2000 Vac 50 Hz, 1 min.
Power supply– PLC	30 mz, mmm.

# **TEMPERATURE AND HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not cond)	0 90 %

# **EMC** (for industrial environments)

# DIRECTIVE 2004/108/EC

HOUSING	
Emission	EN 61000-6-4
Immunity	EN 61000-6-2
	,

HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

# **INPUT** Min Max Input type Voltage -10 V +10 V Input channels Input calibration (1) ±0.1% f.s. Linearity (1) ±0.1% f.s.

Input impedance	
Volt	>/= 100 KΩ
Thermal drift (1)	
Full Scale	± 0.005 % / °C

9 9	<u> </u>			
DIGITAL INTERFACE				
Voltage on terminals	typical 24 Vdc (30 Vdc max.)			
ON state	>9 Vdc			
Input impedance				
(ENABLE, CLK)	4.7 KOhm			
Minimum output load				
(DATA)	560 Ohm (2)			
Max. frequency				
Clock signal	500 Hz			
Rise / Fall time	(Tr) < 0.2 ms			
(1) referred to input Span (difference between may and min				

(1) referred to input Span (difference between max. and min.

(2) The load on the output DATA is controlled with the current taken from the ENABLE signal



# **GENERAL DESCRIPTION**

The transmitter DAT 1010 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

The measured values are converted in a 4÷20 mA current signal .

The device guarantees high accuracy and performances stability both in time and in temperature.

# **FEATURES**

- Configurable input for RTD, mV, Resistance and Potentiometer
- 4 ÷ 20 mA configurable output on current loop
- Configurable by Personal Computer
- High accuracy

- On-field reconfigurable
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN-50022 ("KIT DIN RAIL" Option)







**Application areas** 











POWER SUPPLY		TEMPERATURE & HUMIDITY	
Power supply voltage	10 32Vdc	Operative temperature	-40°C +85°C
		Storage temperature	-40°C +85°C
Reverse polarity protection	60 Vdc max	Humidity (not condensed)	0 90 %
EMC (for industrial environmen	ts)	HOUSING	
DIDECTIVE 2007 (400 / 50		Material	DC + ARS VO

# DIRECTIVE 2004/108/EC EN 61000-6-2 **Immunity Emission** EN 61000-6-4

HOUSING	
Material	PC + ABS V0
Mounting	DIN B head or bigger
Dimensions (mm)	Ø= 43 mm ; H = 24 mm
Weight	about 50 g.

INPUT				
Input type	Min		Max	Span min
RTD 2,3,4 wires				
Pt100	-20	00°C	850°C	50°C
Pt1000	-20	00°C	200°C	50°C
Ni100	-6	0°C	180°C	50°C
Ni1000	-6	0°C	150°C	50°C
Voltage				
mV	-10	0mV	+700mV	2 mV
Potentiometer				
	0 Ω		200 Ω	10%
Nominal value	20	Ω 00	500 Ω	10%
	0.5 ΚΩ		2 ΚΩ	10%
RES. 2,3,4 wires				
Low	С	Ω	300 Ω	10 Ω
High	С	Ω	2000 Ω	200 Ω
Input calibration(1)				
RTD		the higher of ±0.1 % f.s. or ±0.2 °C		
Res. Low	the high		ner of ±0.1 % f.s. or ±0.15 Ω	
Res. High	the high		her of $\pm 0.2$ % f.s. or $\pm 1$ $\Omega$	
mV	the highe		ner of ±0.1 % f.s. or ±18 uV	
Input impedance				
mV	>= 10 MΩ			
Linearity (1)				
RTD		± 0.1 % f.s		

INPUT			
Line resistance influence(1)			
mV <=0.8 uV/Ohm			
RTD 3 wires	$0.05~\%/\Omega$ (50 $\Omega$ balanced max.)		
RTD 4 wires	$0.005~\%/\Omega$ (100 $\Omega$ balanced max.)		
RTD excitation current			
Typical	0.350 mA		
Thermal drift (1)			
Full scale ± 0.01 % / °C			
Burn-out values			
Max. value output	about 21.6 mA		
Min. value output	about 3.5 mA		
Response time (10÷90% of f.s.)	about 400 ms		
	· · · · · · · · · · · · · · · · · · ·		

(1) referred to input Span (difference between max. and min. values)

ОИТРИТ			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	4 mA
Reverse current	20 mA	4 mA	4 mA
Output calibration			
Current	± 7 uA		

# TWO WIRE UNIVERSAL TRANSMITTER PROGRAMMABLE BY PC

# **DAT 1015**



# **GENERAL DESCRIPTION**

The transmitter DAT 1015 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 1015 is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

# **FEATURES**

- Configurable input for RTD, TC, mV, Resistance and Potentiometer
- $4 \div 20$  mA configurable output on current loop
- Configurable by Personal Computer
- High accuracy

- On-field reconfigurable
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN-50022 ("KITDIN RAIL" Option)











**TEMPERATURE & HUMIDITY** 

Operative temperature

Storage temperature

Humidity (not condensed)







-40°C .. +85°C

-40°C .. +85°C

0..90%



POWER SUPPLY				
Power supply voltage	10 32Vdc			
Reverse polarity protection	60 Vdc max			

Power supply voltage	10 32Vdc
Reverse polarity protection	60 Vdc max

·				
EMC (for industrial environments)				
DIRECTIVE 2004/108/EC				
Immunity	EN 61000-6-2			
Emission	EN 61000-6-4			

INPUT						
Input type	Max	Span min				
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
К	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
Т	-200°C	400°C	2 mV			
N	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000 -200°C		200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage						
mV	-100 mV	+700 mV	2 mV			
	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
(**************************************	0.5 ΚΩ	2 ΚΩ	10%			
Resistance 2,3,4 wi	res					
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			
Input calibration(1)						
RTD	the higher of ±	the higher of ±0.1 % f.s. or ±0.2 °C				
Res. Low	the higher of ±	the higher of $\pm 0.1$ % f.s. or $\pm 0.15$ $\Omega$				
Res. High	the higher of ±	the higher of $\pm 0.2$ % f.s. or $\pm 1$ $\Omega$				
		11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				

the higher of ±0.1 % f.s. or ±18 uV

mV, TC

INPUT					
Weight	about 50 g.				
Dimensions (mm)	Ø= 43 mm ; H = 24 mm				
Mounting	DIN B head or bigger				
Material	PC + ABS V0				
HOUSING					

	3				
INPUT					
Input impedance					
TC, mV	>= 10 MΩ				
Linearity (1)					
TC	± 0.2 % f.s.				
RTD	± 0.1 % f.s				
Line resistance influence(1)					
TC, mV	<=0.8 uV/Ohm				
RTD 3 wires	$0.05~\%/\Omega$ (50 $\Omega$ balanced max.)				
RTD 4 wires	$0.005$ %/ $\Omega$ (100 $\Omega$ balanced max.)				
RTD excitation current					
Typical	0.350 mA				
CJC comp.	± 0.5°C				
Thermal drift (1)					
Full scale	± 0.01 % / °C				
CJC	± 0.01 % / °C				
Burn-out values					
Max. value output	about 21.6 mA				
Min. value output	about 3.5 mA				
Response time (10÷90% of f.s.)	about 400 ms				
(4) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )					

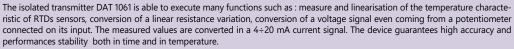
(1) referred to input Span (difference between max. and min. values)

Min	Max	Span min
4 mA	20 mA	4 mA
20 mA	4 mA	4 mA
± 7 uA		
	20 mA	20 mA 4 mA

**DAT 1061** 

**Emission** 

# **GENERAL DESCRIPTION**



**TEMPERATURE & HUMIDITY** 

Min. value output

Value max. fault

Value min. fault

Response time (10÷90% of f.s.)



# **FEATURES**

- Configurable input for RTD, mV, Resistance and Potentiometer
- Galvanic isolation at 1500 Vac
- 4  $\div$  20 mA configurable output on current loop
- Configurable by Personal Computer
- High accuracy

- On-field reconfigurable

ISOLATED TWO WIRE TRANSMITTER FOR RTD PROGRAMMABLE BY PC

- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN-50022 ("DIN RAIL" Option)



EN 61000-6-4





**Application areas** 











POWER SUPPLY					
Power supply voltage	07 32Vdc				
Reverse polarity protection	60 Vdc max				
ISOLATION VOLTAGE					
Input- output/Power supply 1500 Vac, 50 Hz,1 min.					
EMC (for industrial environments)					

Power supply voltage	07 32Vdc	Operative temperature	-40°C +85°C	
Reverse polarity protection	60 Vdc max	Storage temperature	-40°C +85°C	
ISOLATION VOLTAGE		Storage temperature	40 C 103 C	
Input- output/Power supply	1500 Vac, 50 Hz,1 min.	Humidity (not condensed)	0 90 %	
EMC (for industrial environment	nts)	HOUSING		
DIRECTIVE 2004/108/EC		Material	PC + ABS V0	
1 5	EN 61000-6-2	Mounting	DIN B head or bigger	
Immunity		Dimensions (mm)	Ø= 43 mm ; H = 24 mm	

Input							
Input type N		Min	Max	Span min			
RTD 2,3,4 wires							
Pt100 -200		00°C	850°C	50°C			
Pt1000	-20	00°C	200°C	50°C			
Ni100	-6	0°C	180°C	50°C			
Ni1000	-6	0°C	150°C	50°C			
Voltage							
<b>mV</b> -10		0mV	+700mV	2 mV			
Potentiometer							
		0 Ω	200 Ω	10%			
Nominal value	20	00 Ω	500 Ω	10%			
	0.5	5 ΚΩ	50 ΚΩ	10%			
Resistance 2,3,4 wire	s						
Low	C	) Ω	300 Ω	10 Ω			
High (		) Ω	2000 Ω	200 Ω			
Input calibration(1)							
RTD	the higher of ±0.1 % f.s. or ±0.2 °C						
Res. Low	the higher of $\pm 0.1$ % f.s. or $\pm 0.15$ $\Omega$						
Res. High	the higher of $\pm 0.2$ % f.s. or $\pm 1$ $\Omega$						
mV	the high	ner of $\pm 0.1$ % f.s.	or ±10 uV				
Input impedance							

>= 10 MΩ

± 0.1 % f.s

Difficusions (min)	Ø= 43 IIIII , Π = 24 IIIII		
Weight	about 50 g.		
Input			
Line resistance influence(1)			
mV	<=0.8 uV/Ohm		
RTD 3 wires	$0.05 \%/\Omega$ (50 $\Omega$ balanced max.)		
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)		
RTD excitation current			
Typical	0.350 mA		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
Burn-out values	Burn-out values		
Max. value output	about 20.5 mA		

about 3.8 mA

about 21.6 mA

about 3.5 mA

about 400 ms

(1) referred to input Span (difference between max. and min. values)

ОИТРИТ						
Output type		Min	Max	Span min		
Direct current		4 mA	20 mA	4 mA		
Reverse current 2		20 mA	4 mA	4 mA		
Output calibration						
Current		± 7 uA				

m۷

Linearity (1) RTD

# ISOLATED TWO WIRE UNIVERSAL TRANSMITTER PROGRAMMABLE BY PC

# **DAT 1066**



# **GENERAL DESCRIPTION**

The isolated transmitter DAT 1066 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT  $^{'}$ 1066 is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a  $4\div20$  mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

# **FEATURES**

- Configurable input for RTD, TC, mV, Resistance and Potentiometer
- Galvanic isolation at 1500 Vac
- $4 \div 20$  mA configurable output on current loop
- Configurable by Personal Computer

- On-field reconfigurable
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN-50022 ("KITDIN RAIL" Option)







# **Application areas**



**TEMPERATURE & HUMIDITY** 

Operative temperature

Storage temperature

Humidity (not condensed)







-40°C .. +85°C

-40°C .. +85°C

0..90%



POWER SUPPLY	
Power supply voltage	07 32Vdc
Reverse polarity protection	60 Vdc max
ISOLATION VOLTAGE	
Input- output/Power supply	1500 Vac, 50 Hz,1 min.

EMC (for industrial	environments)
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# **DIRECTIVE 2004/108/EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

Input						
Input type	Min	Max	Span min			
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
K	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
Т	-200°C	400°C	2 mV			
N	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage	Voltage					
mV	-100 mV	+700 mV	2 mV			
	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
	0.5 ΚΩ	50 KΩ	10%			
Resistance 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			

ОИТРИТ					
Output type		Min	Max	Span min	
Direct current		4 mA	20 mA	4 mA	
Reverse current	2	20 mA	4 mA	4 mA	
Output calibration					
Current		± 7 uA			

, ( ,	
HOUSING	
Material	PC + ABS V0
Mounting	DIN B head or bigger
Dimensions (mm)	Ø= 43 mm ; H = 24 mm
Weight	about 50 g.

Weight	about 50 g.		
Input			
Input calibration(1)			
RTD	the higher of ±0.1 % f.s. or ±0.2 °C		
Res. Low	the higher of $\pm 0.1$ % f.s. or $\pm 0.15$ $\Omega$		
Res. High	the higher of $\pm 0.2$ % f.s. or $\pm 1$ $\Omega$		
mV, TC	the higher of ±0.1 % f.s. or ±10 uV		
Input impedance			
TC, mV	>= 10 MΩ		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence(1)			
TC, mV	<=0.8 uV/Ohm		
RTD 3 wires	$0.05~\%/\Omega~(50~\Omega~balanced~max.)$		
RTD 4 wires	$0.005$ %/ $\Omega$ (100 $\Omega$ balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC comp.	± 0.5°C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Burn-out values			
Max. value output	about 20.5 mA		
Min. value output	about 3.8 mA		
Value max. fault	about 21.6 mA		
Value min. fault	about 3.5 mA		
Response time (10÷90% of f.s.)	about 400 ms		

(1) referred to input Span (difference between max. and min. values)

**DAT 9550** 



The device DAT 9550 is a graphic display designed for panel mounting and communicating with Modbus RTU protocol on RS-485 and RS-232 serial Slave port. Moreover on the device there is a RS-485 Master port by means of which it is possible to communicate with the eventual Modbus Slave devices connected. It can be used as Slave peripheral for the visualization of the data coming from the Intelligent Units of the DAT9000 series or from a PC, PLC or panel operator.



- Graphic display 132x32 pixels
- RS-485/RS-232 Modbus-RTU Slave Interface
- RS-485 Modbus-RTU Master Interface
- Remotely programmable
- Connection by removable screw-terminals (power

supply & RS-485) and RJ45 (RS-232)

- Compact enclosure dimensions (DIN 48 x 96 mm)
- Galvanic Isolation on all the ways
- EMC compliance CE mark

REMOTE GRAPHIC DISPLAY ON RS-485 WITH MODBUS RTU PROTOCOL

Suitable for panel mounting in compliance with DIN-43700





**Application areas** 









POWER SUPPLY	
Power supply voltage	10 ÷ 30 Vdc
Current consumption	45 mA typ. @ 24Vdc (standby,max. brightness)
Current consumption	80 mA max
ISOLATIONS	
Power supply/ RS485	1500 Vac, 50 Hz, 1 min.

TEN/	IDED	ATIL	DE Q.	MIDITY

-20°C .. +60°C Operative temperature -30°C .. +80°C Storage temperature Humidity (not condensing) 0 .. 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# **CONNECTIONS**

RS-232D RJ-45 RS-485/Supply Removable screw terminal blocks

# HOUSING

110031140	
Material	Noryl self-extinguishing plastic (UL94-V0)
Mounting	Panel mounting
Dim. (mm)	W x L x T : 96 x 48 x 74
Weight	about 160 g.

In compliance with IEE 802.3 EIA RS-485 and RS-232			
Baud-rate up to 38.4 Kbps			
Max. distance (1)	1.2 Km @ 38.4 Kbps		
Internal termination resistance	120 Ohm (optional)		
Display			
Graphic Area 132x32 pixel 13.2 * 48.1 mm			

<sup>(1) =</sup> The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

# LOOP POWERED 4 DIGIT LED PROGRAMMABLE DIGITAL INDICATOR

# **DAT 8050**

# **GENERAL DESCRIPTION**

The digital panel indicator DAT 8050 accept on the input a 4 - 20 mA current loop signal.

The input current signal is used to supply the device introducing a 5 Vdc voltage drop-out on the current loop, so is not required any external supply source. The user can program the visualisation of the measure in the range from -1999 up to 9999 points in order to set the values of the physical or electrical parameter transmitted on the current loop in the desired format. The programming of the visualization is made by the buttons "SET" and "ENTER" located on the front side of the instrument.

# **FEATURES**

- 4÷20 mA loop powered
- Voltage Drop-out < 5V
- High accuracy and linearity
- 0.52" LED display

- Visualization configurable on the front side
- Connections on removable screw terminals
- Compact case size (DIN 48 x 96 mm)
- EMC compliance CE mark





# **Application areas**











# **TEMPERATURE & HUMIDITY**

-20°C .. +60°C Operative temperature Storage temperature -40°C .. +85°C Humidity (not condensing) 0..90%

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC**

Immunity EN 61000-6-2 Emission EN 61000-6-4

# HOUSING

Materia Noryl self-extinguishing plastic (UL94-V0) Dim. (mm) W x H x T : 48 x 96 x 74 Weight about 150 g.

## INPUT Input signal 4 ÷ 20 mA Voltage drop-out < 5 V Limitation current < 50 mA

DISPLAY	
Type of visualization	4 digits LED
Digit height	0.52"
Range of visualization (*)	Programmable on the front side, from "-1999" up to "9999", with High: 1( on left side). Low: -1( on left side)
Minimum measurable current	3.8 mA (visualization "Lo" in case of lower measure)
Maximum measurable current	20.2 mA (visualization "Hi" in case of higher measure)

CHARACTERISTICS AND PERFORMANCES		
Reading accuracy	the better than $\pm$ 0.05 % of f.s. or $\pm$ 1 digit.	
Resolution	4 uA	
Response time	< 0.5 sec.	
Thermal drift	± 0.01 % of f.s. / °C	

(\*)= default visualization : 4.00 ÷ 20.00

# 3.5 DIGIT LED DIGITAL INDICATOR



# **GENERAL DESCRIPTION**

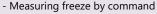
The DAT 701 is a 3.5 digit LED digital indicator with high accuracy and reliability able to measure the normalised current or voltage signal applied to its input.

In function of the parameters requested in phase of order, the following versions of the device are available:

- DAT 701 V A: measure of voltage signal with amplitude from ± 200 mV up to ± 20 V;
- DAT 701 V B: measure of voltage signal with amplitude from ± 2 V up to ± 200 V;
- DAT 701 I A: measure of current signal with amplitude from  $\pm$  200 mA up to  $\pm$  2 mA;
- DAT 701 I B: measure of current signal with amplitude from  $\pm$  2 mA up to  $\pm$  200 mA.

# **FEATURES**

- Voltage or current inputs
- Programmable decimal point and Attenuation
- High accuracy and linearity
- Auto-zero



- Options for low consumption or high brightness
- EMC compliant CE mark
- Low profile (15 mm) DIN 36 x 72 mm housing
- Mounting on panel in according to DIN-43700 standard







# **Application areas**



**VISUALISATION** 







2000 points (from 0 up to 1000 o



TEMPERATURE & HUMIDITY		
Operative temperature		-10°C +60°C
Storage temperature		-40°C +85°C
Humidity (not condensing)		0 90 %
<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004/108/EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	Panel mounting	
Dim. (mm)	W x H x T : 72 x 36 x 15	

INPUT		
Configuration	Bipolar, true diffe- rential	
Input impedance		
Malta a	basic scale: 10 MΩ	
Voltage	attenuated scale: 1 M $\Omega$	
Current	From 1 $\Omega$ up to 1K $\Omega$	
Maximum input signal	2.5 full scale	
Common mode voltage	± 2 V referred to the power supply ground	
Common mode rejection ratio	86 dB	
Normal mode rejection ratio	50 dB @ 50 Hz	
Decimal point programming	From front side, on three decades	

	Scale of visualisation	from -1999 up to 0)
	Out of range visualisation	High = 1; Low = -1
1 [	Type of visualization Display LED	3.5 digit standard LED display (version S)
1		3.5 digit high efficiency LED display (version H)
1	Digit height	0.52 "
1		
CHARACTERISTICS AND PERFORMANCES		AND PERFORMANCES
	Reading accuracy	± 0.1 % of f.s.

Digit ficigit	0.3L	
	,	
CHARACTERISTICS AND PERFORMANCES		
Reading accuracy	± 0.1 % of f.s.	
Thermal drift	0.005 % of f.s./°C	
Reading rate	3 read/second	
Power supply voltage	5 Vdc ± 5 %	
Command consumention	Version S: 90 mA	
Current consumption	Version H: 180 mA	

# 3.5 DIGIT LCD DIGITAL INDICATOR

about 50 g.

Weight



# **GENERAL DESCRIPTION**

The DAT 702 is a 3.5 digit LCD digital indicator with high accuracy and reliability able to measure the normalised current or voltage signal applied to its input.

In function of the parameters requested in phase of order, the following versions of the device are available:

- DAT 702 V A: measure of voltage signal with amplitude from  $\pm$  200 mV up to  $\pm$  20 V;
- DAT 702 V B: measure of voltage signal with amplitude from ± 2 V up to ± 200 V;
- DAT 702 I A: measure of current signal with amplitude from  $\pm$  200  $\mu$ A up to  $\pm$  2 mA;
- DAT 702 I B: measure of current signal with amplitude from ± 2 mA up to ± 200 mA.

- Voltage or current inputs
- Programmable decimal point and Attenuation
- High accuracy and linearity
- Auto-zero

- Measuring freeze by command
- Single power supply voltage (5 Vdc or 9 Vdc)
- EMC compliant CE mark
- Low profile (15 mm) DIN 36 x 72 mm housing
- Mounting on panel in according to DIN-43700 standard





# **Application areas**











# **TEMPERATURE & HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +85°C
Humidity (not condensing)	0 90 %

# **EMC** (for industrial environments)

Weight

DIRECTIVE 2004/108/EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	
HOUSING		
Material	Self-extinguishing plastic	
Mounting	Panel mounting	
Dim. (mm)	W x H x T : 72 x 36 x 15	

about 50 q.

INPUT	
Configuration	Bipolar, true differential
Input impedance	
Valtage	basic scale: 10 M $\Omega$
Voltage	attenuated scale: 1 M $\Omega$
Current	From 1 $\Omega$ up to 1K $\Omega$
Maximum input signal	2.5 full scale
Common mode voltage	± 2 V referred to the power supply ground
Common mode rejection ratio	86 dB
Normal mode rejection ratio	50 dB @ 50 Hz
Decimal point programming	From rear side, on three decades

VISUALISATION	
	Static polarised Liquid Cristal Display for wide angle of visualization
Digit height	0.35"

CHARACTERISTICS AND PERFORMANCES		
Reading accuracy	± 0.1 % of f.s.	
Thermal drift	0.005 % of f.s./°C	
Reading rate	3 read/second	
Power supply voltage	Version 5 : 5 Vdc ± 5 %	
	Version 9 : 9 Vdc ± 10 %	
c:	Version 5 : 3 mA	
Current consumption	Version 9 : 0.5 mA	



# **GENERAL DESCRIPTION**

The DAT 733 is a current loop, 3.5 digit LCD digital indicator with high accuracy and reliability.

By dip-switches and potentiometers, it is possible to set the visualisation of the input measure in engineering units in a range included between 100 and 2000 points, to set the zero point between -1999 and 1999 and the position of the decimal point.

# **FEATURES**

- 4 ÷ 20 mA current loop self-powered
- Visualisation configurable in engineering units
- High accuracy and linearity
- Measure freezing by command

- EMC compliant CE mark
- DIN 36 x 72 mm housing
- Mounting on panel in according to DIN 43700 standard





# **Application areas**











# **TEMPERATURE & HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +80°C
Humidity (not condensing)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC**

mmunity	EN 61000-6-2
mission	EN 61000-6-4

# **HOUSING**

Material	Self-extinguishing plastic
Mounting	Panel mounting
Dim. (mm)	W x H x T : 72 x 36 x 39
Weight	About 100 g.

INPUT	
Signal type	4÷20 mA from current loop
Voltage drop	2.5 V
Maximum input signal	50 mA
Visualisation settings	By dip switch and regulation by potentiometers
Zero value visualisation range	From -1999 up to 1999
Scales of visualisation	Scale 1 from 100 up to 700 points Scale 2 from 700 up to 1400 points Scale 3 from 1400 up to 2000 points
Decimal point setting	

From rear side, on three decades by dip-switch

Out of scale visualisation High: 1( on left side). Low: -1( on left side)

VISUALISATION	
Type of visualization	Static polarised Liquid Crystal Display for wide angle of visualisation
Digit height	0.35"

CHARACTERISTICS AND PERFORMANCES	
Reading accuracy	±0.1 % del f.s.
Thermal drift	0.005 % of f.s./°C
Reading rate	3 read/second
Power supply	Self-powered from the input signal

# 3.5 DIGIT LCD OR LED DISPLAY DIGITAL THERMOMETER FOR PT100

# DAT

# **GENERAL DESCRIPTION**

The DAT 734 is a 3.5 digit LCD or LED display, digital thermometer for Pt100 2 or 3 wires sensor with high accuracy and reliability. The range of measure must be chosen in phase of order between the two options : -50 ÷ 200 °C or 0 ÷ 600 °C.

# **FEATURES**

- Input for Pt100 2 or 3 wires sensors
- Visualisation on LCD or LED display
- High accuracy
- Measure freezing by command

- Low current consumption
- EMC compliant CE mark
- DIN 36 x 72 mm housing
- Mounting on panel in according to DIN 43700 standard





# **Application areas**











# **TEMPERATURE & HUMIDITY**

Operative temperature	-10°C +60°C
Storage temperature	-40°C +80°C
Relative Humidity (not condensing)	0 90 %

# **EMC** (for industrial environments)

# **DIRECTIVE 2004/108/EC**

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

# HOUSING

110031110	
Material	Self-extinguishing plastic
Mounting	Panel mounting
Dim. (mm)	W x H x T : 72 x 36 x 39
Weight	About 100 g.

## INPUT Signal type 2 or 3 wires Pt100 sensor Input range -50 ÷ 200 °C / 0 ÷ 600 °C Out of scale visualisation High: 1 (on left side). Low: -1 (on left side)

VISUALISATION	
Type of visualization (LCD - Version C)	Static polarised Liquid Cristal Display for wide angle of visualization
Digit height	0.35"
Type of visualization (LED - Version D)	High efficiency LED display or standard LED display
Digit height	0.52"

CHARACTERISTICS AND PERFORMANCES	
Reading accuracy	± 0.25 % of f.s.
Response time	800 ms
Power supply voltage	5 Vdc ± 5 %
Thermal drift	0.02 % of f.s./°C
Current consumption	
Version D	180 mA (high efficiency), 90 mA (standard)
Version C	10 mA

# 3.5 DIGIT LCD OR LED DISPLAY DIGITAL THERMOMETER FOR THERMOCOUPLE



TEL 4 DED 4 TUDE 4 11114 4 DITY

# **GENERAL DESCRIPTION**

The DAT 735 is a 3.5 digit LCD or LED display, digital thermometer for Thermocouple sensor type E, K, J, N, S and T with high accuracy and reliability.

# **FEATURES**

- Input for Thermocouple sensors type E, K, J, N, S and T Visualisation on LCD or LED display
- High accuracy
- Measure freezing by command

- Low current consumption
- EMC compliant CE mark
- DIN 36 x 72 mm housing
- Mounting on panel in according to DIN-43700 standard







**Application areas** 











TEMPERATURE & HUMIDITY			
Operative te	Operative temperature		
Storage temp	perature	-40°C +80°C	
Humidity (no	t condensing)	0 90 %	
EMC (for in	<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004/108/EC			
Immunity	EN 61000-6-2		
Emission	EN 61000-6-4		
HOUSING			
Material	Self-extinguishing plastic		
Mounting	Panel mounting		
Dim. (mm)	W x H x T : 72 x 36 x 39		
Weight	About 100 g.		

INPUT	
Signal type	Thermocouple type E, K, J, N, S and T
Ranges of measure	
Thermocouple type E	0 ÷ 900 °C
Thermocouple type K	0 ÷ 1200 °C
Thermocouple type J	0 ÷ 600 °C
Thermocouple type N	0 ÷ 1200 °C
Thermocouple type S	0 ÷ 1600 °C
Thermocouple type T	0 ÷ 300 °C
Out of scale visualisation	High: 1 (On the left side); Low -1 (On the left side)

VISUALISATION		
Type of visualization (LCD - Version C )	Static polarised Liquid Cristal Display for wide angle of visualization	
Digit height	0.35"	
Type of visualization (LED - Version D)	High efficiency LED display or stan- dard LED display	
Digit height	0.52"	

CHARACTERISTICS AND PERFORMANCES		
Reading accuracy	±0.25 % of f.s.	
Cold Junction Compensation	±0.5 °C	
Thermal drift	0.02 % of f.s./°C	
Response time	800 ms	
Power supply voltage	5 Vdc ± 5 %	
Current consumption	Version D: 180 mA (high efficiency), 90 mA (standard)	



# **DIN RAIL POWER SUPPLY**



c UL) us	CBCE ROHS 2002/5/SEC ROHS 2002/5/SEC
INPUT	85264 VAC
INPOT	120370 VDC
OUTPUT	12 VDC @ 5 A



INPUT	85264 VAC
	120370 VDC
OUTPUT	12 VDC @ 1.67 A

CIOU-BOM

CBC

ROLLING

CBC

ROLLING

R

INPUT	85264 VAC
	120370 VDC
OUTPUT	12 VDC @ 7.5 A



**Application areas** 



OUTPUT







120....370 VDC

12 VDC @ 3.33 A



Other devices are available on request. For more technical information log on to the website: www.meanwell.com

# **DIN RAIL POWER SUPPLY**



INPUT	85264 VAC
	120370 VDC
OUTPUT	24 VDC @ 2.5 A



INPUT	85264 VAC
	120370 VDC
OUTPUT	24 VDC @ 1 A



INPUT	85264 VAC
	120370 VDC
OUTPUT	24 VDC @ 4 A



INPUT	85264 VAC
	120370 VDC
ОUТРUТ	24 VDC @ 1.7 A



Other devices are available on request. For more technical information log on to the website: www.meanwell.com



# **GENERAL DESCRIPTION**

The program interface PRODAT USB is suitable to program, by proper software, all the DATEXEL devices of SMART and SLIM series using any Personal Computer, both desktop and laptop type with USB serial port.

# **Application areas**







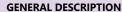




# **CONFIGURATION SOFTWARE FOR SMART SERIES DEVICES**

**PROSOFT** 





PROSOFT is a software developed by Datexel srl, running under the operative system Windows® and designed to program and visualize the measure of the converters and transmitters programmable by PC.

To operate with PROSOFT it is necessary to use the programming interface (PRODAT) between the P.C. and the device; refer to prosoft user guide to use the right interface and device.

# **SYSTEM REQUIREMENTS**

Operative System......Windows® 98 / 2000 / NT / ME / XP / Vista / Win 7 Available Hard Disk space.....2 MB







**Application areas** 











# **CONFIGURATION SOFTWARE FOR SLIM SERIES DEVICES**

DATESOFT



# **GENERAL DESCRIPTION**

DATESOFT is a software developed by Datexel srl, running under the operative system Windows® designed to program and visualize the measure of the converters program-

To operate with DATESOFT it is necessary to use the programming interface (PRODAT) between the P.C. and the device on programming.

# SYSTEM REQUIREMENTS

Operative System.......Windows® 98 / 2000 / NT / ME / XP / Vista / Win 7 Available Hard Disk space.....2 MB







**Application areas** 











# **CONFIGURATION SOFTWARE FOR INTELLIGENT UNITS DAT9000 SERIES**

쏭 Dev



# **GENERAL DESCRIPTION**

Dev9K is an Integrated Development Environment running under the Windows® Operative System that allows to design and debug the applications based on the DAT9000 series intelligent units.

With Dev9K it is possible to set the DAT9000 series devices to execute I/O read and write operations (DAT3000 series), mathematical and logic operations and timers. Moreover it is possible to read and write in real time the Internal Registers of the Controller or connect it directly to the slave devices connected to its Modbus Master Port.

# **SYSTEM REQUIREMENTS**

Operative System......Windows 2000 / NT / ME / XP / Vista / Win 7 Available Hard Disk space...... 2 MB







**Application areas** 











ACCESSORIES / SOFTWARE

# **DATEXEL: CONFIGURATION SOFTWARE**









