

Operating and maintenance instructions for vibrating level indicator GVL30

PRODUCT IDENTIFICATION

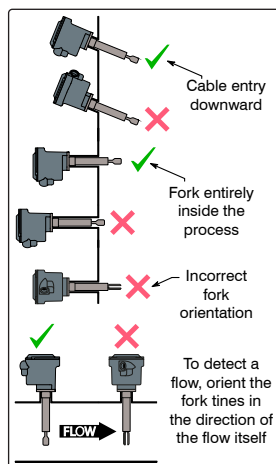
The GVL30 series is a range of vibrating level indicators for liquids of **maximum viscosity 10,000 mm²/s (=centiStokes)**.
The device is identified by the label on the side of the case, the characteristics of which are given below:

2 3 4 7 8	CAMLogic CAMLogic S.r.l. Via dell'Industria 12 42025 Cavriago - Reggio Emilia - Italy GVL30 GVL30-00 ~15-260 VAC 50/60 Hz ~15-80 VDC Serial n.: 00.000.00000 Year: 0000 Process temp. range -20°C to +70°C Ambient temp. range -20°C < Ta < +70°C Power consumption: 1W WARNING Potential electrostatic hazard: see user manual! Do not open when an explosive atmosphere might be present! IP 65 65 65 Ex CE UK Ex	1 5 6	1. Manufacturer information 2. Product model and reference code for the specific configuration 3. Serial number and year of production 4. Ambient and process temperature range and power consumption 5. QR code leading to the specific configuration and IP rating 6. Usage warnings 7. Markings and certificate numbers 8. Conformities and certification symbols
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Tampering with the label entails the loss of validity of the certifications.

PRODUCT CHARACTERISTICS

Materials:	casing and cover in die-cast aluminium, vibrating fork in AISI 316L / EN 1.4404 stainless steel
Connection to process:	G 3/4 (BSPP) for standard models, or G 1" 1/2 (BSPP) for AT models
Cable entry:	M20x1,5 (standard) or 1/2 NPT on request
Power supply voltages:	15-260VAC 50/60 Hz or 15-80VDC
Power consumption:	max 1W
Cables size:	0,5 ÷ 2,5 mm ² (14 AWG)
Contacts capacity:	5A at 220V (AC) or 24V (DC)
Signal output:	DPDT
Process temperature:	-20 ÷ +70°C (-4 ÷ 158°F) -20 ÷ +200°C (-4 ÷ 392°F) for GVL30AT models -20 ÷ +70°C (-4 ÷ 158°F)
Ambient temperature:	
Process pressure:	0,8 ÷ 15 bar (11,6 ÷ 217,5 psi)
Sensitivity:	material size max 10 mm / minimum density 0,2 Kg/dm ³
Casing protection rating:	IP65 (dust-tight, protection against water jets)
Wetted parts protection rating:	IP68 (dust-tight, protected against the effects of continuous immersion in water)
Means of protection:	class I (PE connected) - overvoltage category II
Environmental conditions:	indoor and outdoor use, altitude up to 2000 m (6.562 ft), max. relative humidity 80% for temp. up to 31°C (88°F) decreasing linearly to 50% at 40°C (104°F), pollution degree 2



INSTALLATION

The indicator can be mounted in any position, on the wall of the silo or container, taking care to keep the cable entry pointing downward. In the case of side installation, the fork with the prongs should be positioned vertically (as in the image to the side). If the indicator is used to check the presence or absence of a flow in a pipe, it is necessary to rotate the prongs in the direction of the flow (as in the image to the side).

If the indicator is installed in close proximity to the liquid inlet, the fork should be protected to prevent the triggering of false signals, or the delay should be used.

The coupling of the instrument with the container wall can be threaded or flanged; the reference figures on page 3 show general dimensions and standard product couplings.

Always refer to the technical drawings provided by the manufacturer with the manual.

Seal the cable entry with cable glands suitable for the working range indicated on the label.

The red protective cap supplied with the device serves only to protect it during transport; it is not suitable for use during operation of the instrument and is the responsibility of the installer to replace it. The diameter of the power cable must match the clamping range indicated by the cable gland used.

SAFETY WARNINGS

Installation, maintenance, and diagnostics of the device should be carried out only by authorized personnel who are informed of current regulations. Before starting work, trained personnel must have read and understood the instructions.

When using electrically operated equipment, appropriate safety precautions, as required by current regulations, must be taken to reduce the risk of fire, electric shock and injury to persons.
Before installing the device, check its perfect integrity by ensuring that it has not been damaged during transportation.
Removal/replacement/modification of any part of the device, will result in the loss of validity of the product certifications.
Grounding is mandatory and the sole responsibility of the installer.

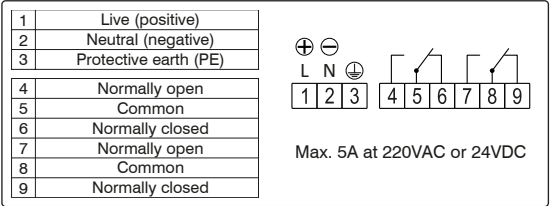
WIRING

The entire connection of the device must take place while the device is de-energised.

The earthing connection, with the supplied M5x8 screw and notched stainless-steel washer, must take place before any other connection is established. One terminal for the protective earth connection is outside the casing, near the cable entry, and another is inside. Both are marked by the relative symbol (IEC 60417-5019).

The cross-sectional area of the protective earth (PE) conductor must be the same as that of the phase conductor (S), with a maximum of 16 mm². Protect the cables with an overload protection element (rated current ≤ 5A).
A disconnect switch must be present near the device, to cut off power supply in the event of a fault, in an easy to reach position and marked as the disconnecting device of the equipment.

The picture shows the wiring diagram, also printed on the mask covering the electronic components, inside the instrument.

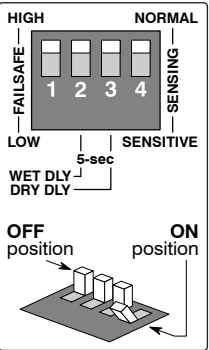


CONFIGURATION

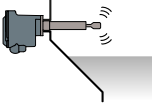
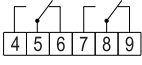
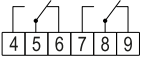
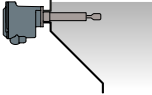
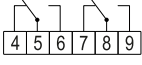
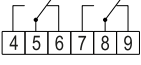
Configuration of the product is done using the switches inside, which as a standard are set to OFF. The picture shows the switches, each of which has an identifying number, as well as an example of the OFF and ON positions.

Each individual switch corresponds to a specific function described below:

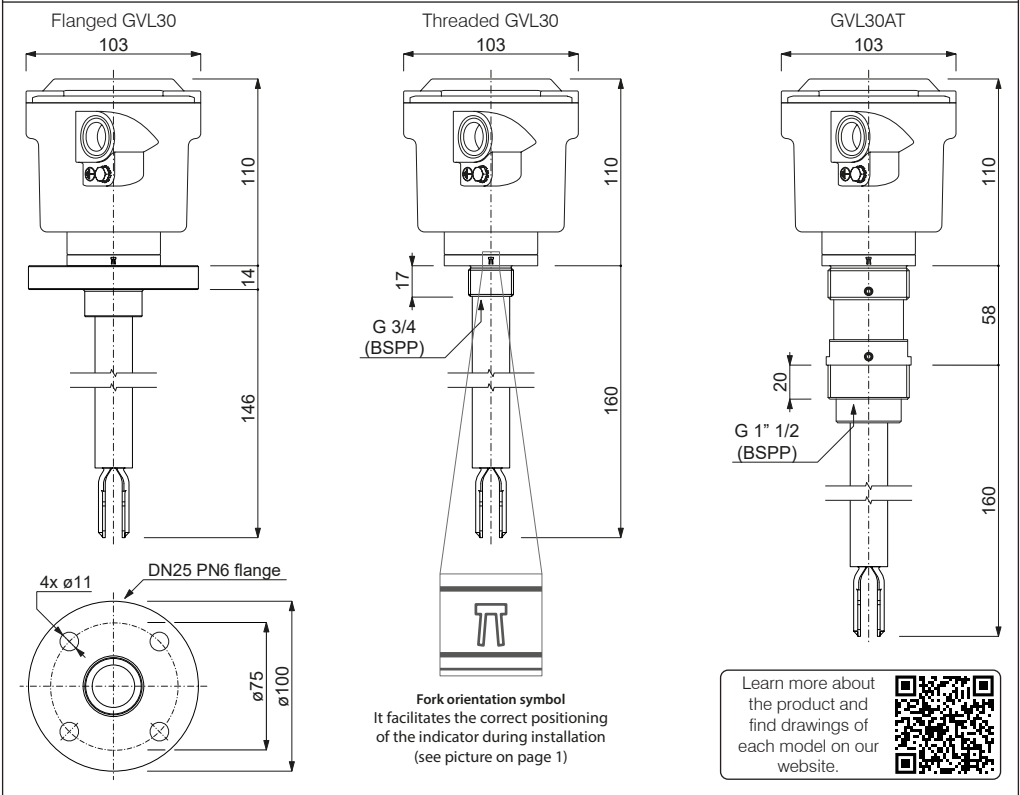
- 1) **Failsafe setting:** for the instrument to operate safely, this switch must be set according to the installation and use of the indicator. If installed to check the maximum level, leave the selector switch to **OFF**. Conversely, for minimum level control, the selector should be set to **ON**. In case of failure or malfunction, it is designed to return to the safest condition, as evidenced by the summary tables below and on the next page.
- 2) **“WET” delay of 5 seconds:** setting the switch to **ON** allows you to set a 5-second delay in the signal, when the fork is covered by the material. No delay, however, with the switch set to **OFF**.
- 3) **“DRY” delay of 5 seconds:** setting the switch to **ON** allows you to set a 5-second delay in the signal, when the fork returns free from the material. No delay, however, with the switch set to **OFF**
- 4) **Sensitivity control:** with the selector switch set to **OFF**, the instrument can detect liquids with a maximum viscosity of 1000 mm²/s (=centiStokes). For higher viscosity fluids, up to 10000 mm²/s (=centiStokes) move the switch to ON.



	Liquid status / LED status	Failsafe	Contacts (power on)	Contacts (power off)
Maximum level (HIGH)	 ABSENCE OF LIQUID ALARM (grey) NORMAL (green) └ STATUS ─┘	 Switch #1 OFF FAILSAFE HIGH	 Relay energized Normal operation	 Relay not energized No power supply
	 PRESENCE OF LIQUID ALARM (red) NORMAL (grey) └ STATUS ─┘	 Switch #1 OFF FAILSAFE HIGH	 Relay not energized Alarm	 Relay not energized No power supply

Minimum level (LOW)	Liquid status / LED status	Failsafe	Contacts (power on)	Contacts (power off)
	 ABSENCE OF LIQUID ALARM  NORMAL  STATUS	 Switch #1 ON FAILSAFE LOW	 Relay not energized Alarm	 Relay not energized No power supply
	 PRESENCE OF LIQUID ALARM  NORMAL  STATUS	 Switch #1 ON FAILSAFE LOW	 Relay energized Normal operation	 Relay not energized No power supply

REFERENCE FIGURES



MAINTENANCE

CAMLogic instruments do not require routine maintenance. It is however recommended to visually check the lid gasket (o-ring) each time the cover is opened or the instrument is removed. If there are signs of damage or excessive tearing of the lid gaskets or other parts of the device, contact the CAMLogic manufacturer for replacement with suitable materials. Only use original spare parts supplied by the camlogic manufacturer.

Cover screws should be fully tightened and cable glands and/or end caps should be tightened securely; ensure that power and ground terminals are connected properly and in good condition. Always turn off the power before opening the instrument cover.

REPAIRS

GVL30 series level indicators can only be repaired by the CAMLogic manufacturer or by following the manufacturer’s instructions. If in doubt about malfunctions or repairs, contact the manufacturer:
CAMLogic S.r.l. - Via dell'Industria 12-12/A - 42025 Cavriago (RE) - Italy (camlogic@camlogic.it - www.camlogic.it).

WARRANTY

CAMLogic, in addition to the terms of the supply contract, guarantees its products for a period of twenty-four (24) months from the date of shipment. This warranty shall be expressed exclusively in the repair or replacement free of charge of parts which, after careful examination by the manufacturer, are found to be defective.
The warranty, excluding any liability for direct or indirect damages, shall be limited to material defects only and shall have no effect if the returned parts are found to have been in any way disassembled, tampered with or repaired by anyone other than the manufacturer.
Also excluded from the warranty is damage resulting from negligence, carelessness, incorrect or improper use of the level indicator, operator mishandling or improper installation. The warranty is also void if non-original spare parts have been used. A returned level indicator, even if under warranty, must be shipped freight prepaid.

Ex MARKING DETAILS

The vibrating level indicator GVL30 can be ATEX certified for dust, Zone 22.

	II	3	D	Ex	tc	IIIB	T*°C	IP65	Dc	ATEX MARKING for dust, Zone 22
										European Community marking for equipment intended for use in areas at risk of explosion.
										Group II equipment intended for use in surface industry.
										Category: 3 suitable for use in areas classified as Zone 22
										Combustible dusts: combustible substance present in the installation area and in the internal volume.
										Ex symbol.
										Protection method Ex t - protection against ignition of combustible dusts.
										tc = augmented level of protection
										Dust types: IIIB (non-conductive dusts)
										Temperature class (max. surface temperature reached by the device): T85°C for standard models and T200°C for AT models
										IP65 (Ingress Protection) - 6 = dust-tight, no dust ingress;
										5 = protected against water jets, limited ingress protection.
										EPL (Equipment Protection Level): level of protection of the equipment.
										Dc = augmented level of protection

Symbol	Reference	Description
	IEC 60417-5031 (2002-10)	Direct current
	IEC 60417-5032 (2002-10)	Alternating current
	IEC 60417-5019 (2006-08)	Protective earth / protective ground
	IEC 60417-6042 (2010-11)	Caution: risk of electric shock
	ISO 7000-0434B (2004-01)	Caution: if the instrument is used in a manner not specified by the manufacturer, the protection offered by the equipment may be impaired.

Please note: the printed version of this manual may not reflect the most recent changes.
Please always refer to the updated digital version available on the official CAMLogic website: www.camlogic.it