



The easy choice when indication is all you need

IndiTop 8-30 VAC/DC

General information

The indication unit **IndiTop** from Alfa Laval is designed as a simple and easy to use, electrical feedback unit for Alfa Laval sanitary valves. It is compatible with all major PLC (Programmable Logic Controller) digital input cards. It is for use in food, dairy and brewery installations and in biopharmaceutical applications.

The unit is mounted on the valve actuator "mushrooms" with two Allen screws and on the valve stem. Once setup either by the quick and easy "5 push setup" or remotely from the PLC, the unit will be able to send feedback about the valve position through a fixed cable.

Sensor System

IndiTop is a unique "No Touch" sensor system without any mechanical adjustments. A magnet (indication pin) is mounted on the valve stem and the magnetic field (axial) is detected by sensor chips inside the sensor unit. The measuring angle from each chip is used to locate the current position of the valve stem with an accuracy of ± 1 mm. Note that the distance to the magnet can be $5 \text{ mm} \pm 3 \text{ mm}$.

Feedback Signals

IndiTop is capable of providing two 2 PNP/NPN digital feedback signals in both DC and AC. For cable version the selection of PNP or NPN is done by wiring and for the plug version the selection is done by Item no.

Visual indication through LEDs are constantly displaying the current valve position and power (ON/OFF)

Key Features

- Works with both DC and AC supply voltage (8-30V DC/AC)
- Two PNP/NPN digital DC/AC feedback signals
- Quick and easy "5 push setup" through pushbuttons
- Able to perform the setup remotely from the PLC
- Keeps the setup during power downs
- Visual indication through LEDs
- 0.5 m with, 5 or 10 m fixed cable
- No mechanical adjustments or wear
- Only one version. No need for additional spare parts
- $\pm 5 \text{ mm}$ tolerance for saved positions
- No maintenance.
- Protection Class IP66 and IP67



IndiTop

Technical Data

Materials

Plastic partsNylon PA 6 and POM
Rubber partsSEBS
Metal parts:Stainless steel DIN 914 A2. Brass

Sensor System

Sensor accuracy: ± 1 mm
Distance to magnet: 5 ± 3 mm
Stroke length:6 - 80 mm

Electrical interface

5 or 10 metres $\varnothing 5$ mm fixed PVC cable with 6 x 0,129 mm² wires.
Plug M12, 5 pin with 0.5 metres, $\varnothing 5$ mm fixed PVC cable with 6 x 0.129 mm² wires.

Protection Class

Cable version IP66/67.
Plug version IP66/67.

Power Supply

IndiTop is designed to be a part of the PLC's Input/Output (I/O) system. It should be supplied from the same protected power supply as the other I/O devices. The unit is reverse polarity and short circuit protected. The power supply must meet the requirements of EN 61131-2.

Supply voltage:8 - 30 V AC/DC
Supply voltage nominal:24 V DC/AC (RMS) (-15% / +20% as per EN 61131-2:2003)
Max. ripple:5% of nominal supply voltage
Supply voltage absolute max:30 V DC/AC
Supply voltage absolute min.:8 V DC/AC
Supply current*):Max. 45 mA

*) The initial current during power-on is higher. The actual shape of the current pulse depends on the power supply used. Typical values are 150mA RMS during 13 ms (regulated PS) to 360 mA RMS during 8 ms (unregulated PS).

The fulfilling of the UL requirements in UL508 requires that the unit is supplied by an isolating source complying with the requirements for class 2 power units (UL1310) or class 2 and 3 transformers (UL1585).

Feedback Signals

Output signals from the sensor unit to the connected digital interface (PLC).

Nominal voltage:Same as supply voltage.
Load current:50 mA typically, 100 mA max.
Voltage drop:Typically 3 V at 100 mA

Selecting PNP/NPN

PNP (sourcing) or NPN (sinking) function is selected through the brown wire in the cable.
PNP (DC/AC) = Brown wire connected to + (DC) / L1 (AC).
NPN (DC/AC) = Brown wire connected to - (DC) / N (AC).

Relief plug

The indication unit **IndiTop** is provided with a relief plug which opens in case of an actuator leakage. If a leakage occurs the plug remains attached to the unit and can be put in its place again.

Spareparts

The magnet (indication pin) holder inclusive of magnet (indication pin) is available as sparepart.

Environment

Cold	Temperature: °C Duration: h	-25 ±3 16	IEC 68-2-1 Test Ab	IEC 68-2-1		Non operating
	Temperature: °C Duration: h	-20 ±3 16	IEC 68-2-1 Test Ab	IEC 68-2-1	A	Operating
Dry Heat	Temperature: °C Duration: h	+90 ±2 96 ±1	IEC 68-2-2 Test Bb	IEC 68-2-2		Non operating
	Temperature: °C Duration: h	+80 ±2 16	IEC 68-2-2 Test Bb	IEC 68-2-2	A	Operating
Change of temperature	Temperature: °C Duration: h Cycles:	-20/+80 1 5	IEC 68-2-14 Test Na	IEC 68-2-14		Operating -20/+80
	Protection	Class	IP66/67	IEC 529	IEC 529	A
Damp heat, cyclic	Temperature: °C Cycles:	+25/+55 12	IEC 68-2-30 Test Db	IEC 68-2-30		Non operating/ Operating
	Temperature: °C Humidity: %RH Duration: day & night	+40 93 21	IEC 68-2-3 Test Ca	IEC 68-2-3		Non operating/ Operating
Free fall	Height: mm Number of falls:	1000 28	IEC 68-2-32 Test Ed	IEC 68-2-32	A	Packed
	Acceleration: g Number: Pulse time: ms	5 2 x 3 x 1000 16	IEC 68-2-29 Test Eb	IEC 68-2-29	A	Non operating/ Operating
Vibration	Freq./Ampl.: Hz / mm Freq./Acc.: Hz / g Duration: minutes	10 - 55 / 0.7 55 - 500 / 10 3 x 30	IEC 68-2-6 Test Fc	IEC 68-2-6	A	Operating
	Shock	Acceleration: g Number:	15 2 x 3 x 3	IEC 68-2-27 Test Ea	IEC 68-2-27	A
Fast transients, immunity	Common mode: kV _{peak} T _r /T _h : ns Rep. frequency: kHz	2 5/50 5	EN 61000-4-4	EN61000-4-4 (direct injection)	B	AC, DC power ports. Operating
	Common mode: kV _{peak} T _r /T _h : ns Rep. frequency: kHz	2 5/50 5				
Surges, immunity	T _r /T _h : μs Common mode: kV _{peak} Differential mode: kV _{peak}	1.2/50 (8/20) 2 1	EN 61000-4-5	EN61000-4-5	B	Operating
	Electrostatic discharge, Immunity	Contact discharge: kV Air discharge: kV Indirect discharge via coupling plane: kV	6 8 6	EN 61000-4-2	EN61000-4-5	B
Electromagnetic field, immunity	Frequency: MHz Test level: V _{rms} /m Modulation: %AM 1kHz	80 - 1000 10 80	ENV 50140	ENV 50140	A	Operating
	Frequency: MHz Test level: V _{rms} /m Duty cycle: % Rep. frequency: Hz	900 ± 5 10 50 200	ENV 50204	ENV 50140		
RF Common mode, immunity	Frequency: MHz Test level: V _{rms} Modulation: %AM 1kHz Source impedance: Ω	0.15 - 80 10 80 150	ENV 50141	ENV 50141	A	Operating
	Power frequency Magnetic field, immunity	Power frequency: Hz Magnetic field: A/m	50 30	EN 61000-4-8	EN61000-4-8	A
Electromagnetic field, emission	Frequency: MHz Field strength: dBμV/m	30 - 230 30 (at 10 m distance)	EN 55022	EN 55022	A	Operating
	Frequency: MHz Field strength: dBμV/m	230 - 1000 37 (at 10 m distance)				

EMC Directive	89/336/EEC	EN 50081-1, EN 50082-2
UL approval	8-30 VAC/VDC, Class 2 input, 45 mA max. output	UL508 - E203255

Electrical connections

The fixed cable consists of 6 wires. For standard 2 feedback not using the remote setup feature only 4 wires need to be connected to external systems (Red/Black/Green/Yellow). Brown is always connected to either Red (PNP) or Black (NPN) depending on whether PNP or NPN is required. The orange wire must be connected to Red if the remote setup feature is not used.

Cable connections:

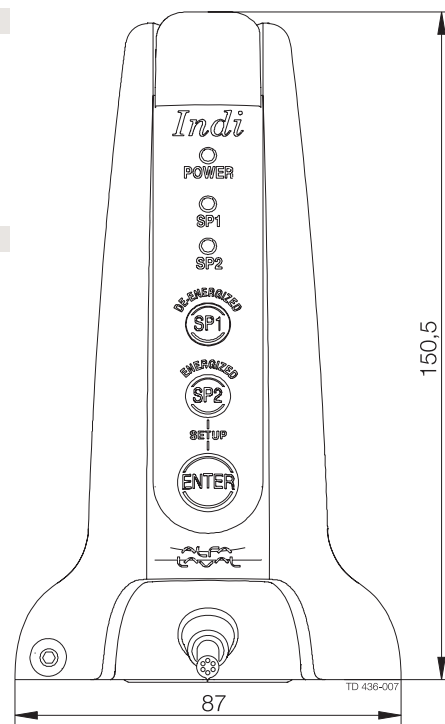
Red	L+/L1, 8-30V AC/DC
Black	L-/N
Green	SP1 (De-energized)
Yellow	SP2 (Energized)
Brown	PNP (L+) / NPN (L-)
Orange	Remote setup bit

If not used - connect to L+/L-)

M12 - PIN connections:

PIN 1	Black	L-/N
PIN 2	Yellow	SP2 (Energized)
PIN 3	Green	SP1 (De-energized)
PIN 4	Red	L+/L1, 8-30V AC/DC
	Brown	PNP (L+) PIN 4 / NPN (L-) PIN 1
		Internal wire connected in male plug
PIN 5	Orange	Remote setup bit

If not used - connect to L+/L-) in female plug



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The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.