

# 1.1 Indication

The valve control & indication are designed to provide easy and fully technical solutions in any process area. The requirements for total product flexibility and reliability. together with superior performance, are key functions for success within processing areas.



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## Alfa Laval IndiTop

The easy choice when indication is all you need

**Concept**

IndiTop is a uniform indication unit that consists of a proven no-touch, set-and-forget sensor system with light-emitting diodes (LEDs) and valve control sensor board for connection to any PLC (Programming Logic Controller) system with digital interface.

IndiTop offers a solution for Alfa Laval butterfly and single-seat valves and is designed for use in the dairy, food and beverage, and biopharm industries; IndiTop provides real-time information about valve operating status 24/7 while helping to improve production performance and secure traceability.

**Working principle**

IndiTop is an automated indication unit which does not use any solenoid valve, it transmit status and condition of the valve position back to the PLC system using one of two electrical feedback signals. IndiTop fits onto all Alfa Laval hygienic actuators equipped with mushrooms. Installation is straightforward; no special expertise, adapters or tools are required. To initiate manual setup, simply press the push-button.

**TECHNICAL DATA****Communication**

Interface . . . . . Digital PNP/NPN  
Supply voltage . . . . . 8-30 VDC/VAC

**Sensor board**

Max current consumption . . . . . 45mA  
Feedback signal #1 . . . . . De-energized valve  
Feedback signal #2 . . . . . Energized valve  
Valve tolerance band options . . . . . 1  
Default tolerance band . . . . .  $\pm 5$  mm  
Sensor accuracy . . . . .  $\pm 1$  mm  
Stroke length . . . . . 0.1 - 80 mm

**PHYSICAL DATA****Materials**

Steel parts . . . . . Stainless steel and Brass  
Plastic parts . . . . . Black Nylon PA 6, SEBS and POM

**Environment**

Working temperature . . . . . -20 °C to +85 °C  
Protection class . . . . . IP66 and IP67

**Cable connection**

5 m option . . . . . 6 wire,  $\varnothing 5$  mm (AWG26)  
10 m option . . . . . 6 wire,  $\varnothing 5$  mm (AWG26)  
0,5 m with plug option . . . . . M12 plug, incl. M12 socket



The IndiTop has Patented Sensor System, Registered Design and Registered Trademark owned by Alfa Laval

**Options**

- Cable configuration

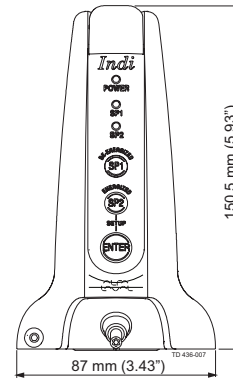
**Accessories**

- Threaded plate for indication pin on SRC, SMP-BC and i-SSV valves
- Adaptor for Unique SSSV valves

**Compatible actuators**

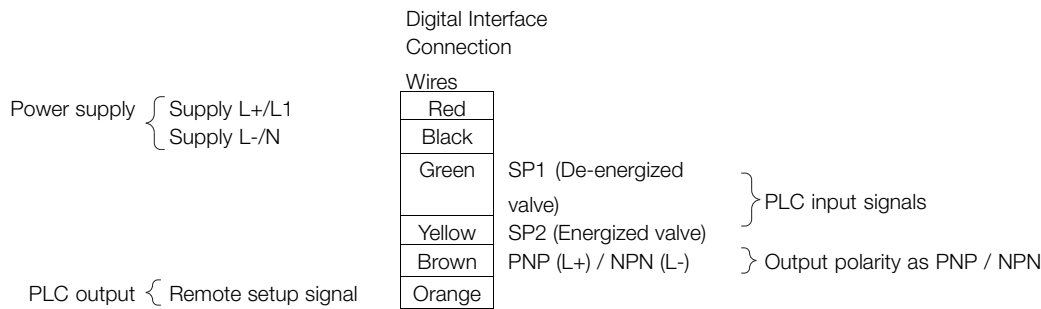
SBV	Yes	Unique SSV	Yes
Kolttek	Yes	Unique SSV aseptic	Yes
LKLA-T	Yes	Unique SSV long stroke	No
ARC	Yes	SMP valves	Yes
SRC	Yes	Unique Mixproof (U/L seat lift)	No
SRC long stroke	No		

**Dimensions**

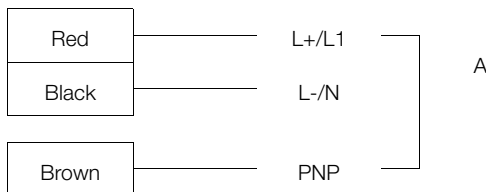


**Electrical connection**

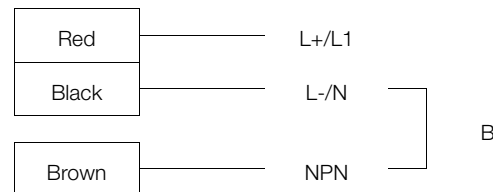
The fixed cable consists of 6 wires. For standard 2 feedbacks not using the remote setup features only 4 wires need to be connected to external systems (Red/Black/Green/Yellow). Brown is always connected to either Red (PNP) or Black (NPN) depending on whether PNP or NPN is required. The orange wire must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



**Connecting as PNP**



**Connecting as NPN**

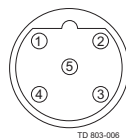


- A. Brown connected with Red wire on external screw terminals if PNP polarity
- B. Brown connected with Black wire on external screw terminals if NPN polarity

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 wire connections**

Red	L+/L1
Black	L-/N
Green	SP1 (De-energized valve)
Yellow	SP2 (Energized valve)
Brown	PNP (L+) / NPN (L-)
Orange	Remote setup signal
	If not used - connect to L+/L1



**M12 plug - PIN connections**

PIN 1	Black	L-/N
PIN 2	Yellow	SP2 (Energized valve)
PIN 3	Green	SP1 (De-energized valve)
PIN 4	Red	L+/L1, 8-30V AC/DC
M12 Plug		PNP (L+) PIN 4
Internal wire connections	Brown	NPN (L-) PIN 1
PIN 5	Orange	Remote setup signal
		If not used - connect to L+/L1

## Alfa Laval 8697 Control and Indication unit

### Automation

The pneumatic control and indication unit Type 8697 is optimized for integrated mounting on the DV-ST valve series. Inductive or NAMUR limit switches register the position of the valve. The integrated pilot valve control single acting actuators.

The design of the control and indication unit is compact and suitable for tight fit installations. Besides the electrical position feedback signals the LED status of the unit is shown directly on top of the unit itself.

The housing is easy to clean and features proven IP protection and chemically resistant materials for use in hygienic processing, in food, beverage and pharmaceutical industries.



#### TECHNICAL DATA

##### Position feedback

2x initiator . . . . . 3 Wire PNP Inductive limit switch

2x initiator . . . . . 2 Wire NAMUR limit switch

Stroke range valve spindle . . . . . 2 to 36 mm

##### Operating voltage

Solenoid valve . . . . . 24 VDC  $\pm$ 10%, 1W, residual ripple 10%

Inductive limit sensor . . . . . 10 to 30 VDC, max. 100mA per initiator

NAMUR limit switch . . . . . 8,2 VDC, max. 2,1 mA

##### Installation

As required, preferably with actuator in upright position

##### Protection type

IP65 and IP67 according to EN 60529, Type 4X

##### Protection class

3 acc. to DIN EN 61140

##### Conformity

EMC directive 2014/30/EU

##### Ignition protection

II 2G Ex ia IIC T4 Gb

##### Approval

cULus certificate no. E238179

Ignition protection . . . . . II 2G Ex ia IIC T4

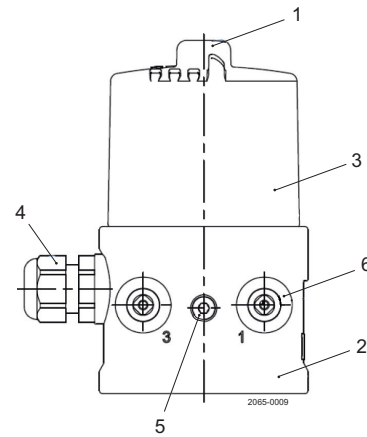
##### Electrical connection

Cable gland . . . . M16 x 1,5 - Clamping area 4...8 mm

**PHYSICAL DATA**

**Material**

- 1. Transparent cap ..... PC
- 2. Basic body ..... PPS
- 3. Sealing ..... EPDM
- 4. Cable gland ..... PA
- 5. Screws ..... Stainless steel
- 6. Push-in connector ..... POM / stainless steel
- Threaded ports G1/8 ... Stainless steel



**Air connectors**

Push-in fitting for air hose  $\varnothing 6$  mm and  $\frac{1}{4}$ "

**Control medium**

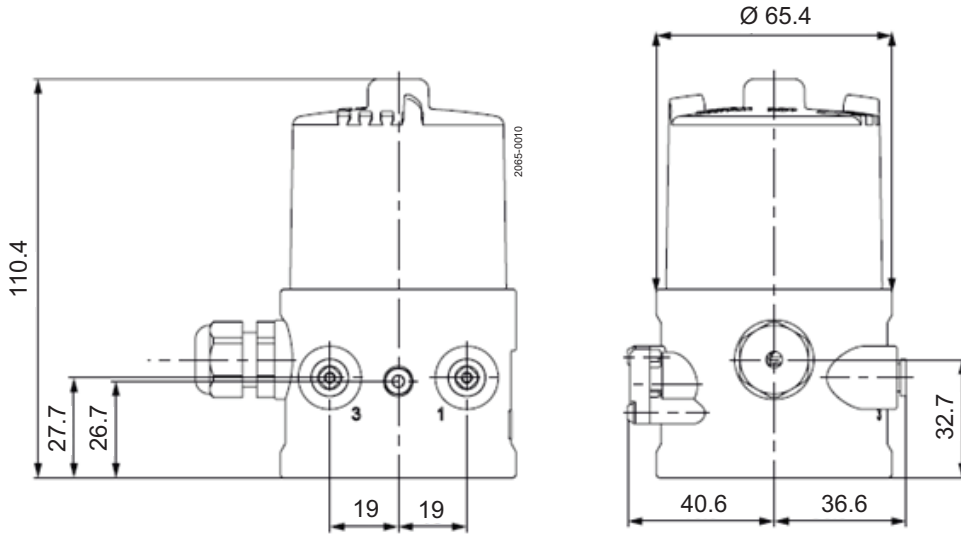
neutral gases, air, quality classes acc. to ISO 8573-1

- Dust concentration ..... Class 7: max. particle size 40  $\mu\text{m}$
- Particle density ..... Class 5: max. particle density 10  $\text{mg}/\text{m}^3$
- Pressure condensation point ..... Class 3: max. -20  $^{\circ}\text{C}$
- Oil concentration ..... Class X: max. 25  $\text{mg}/\text{m}^3$
- Supply pressure ..... 3 to 7 bar

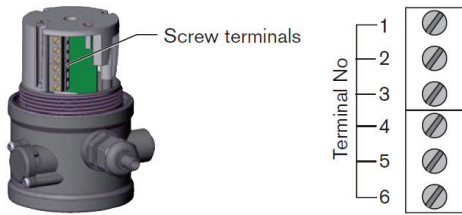
**Ambient temperature**

- ATEX version ..... -0 to +55  $^{\circ}\text{C}$
- With pilot valve ..... -10 to +55  $^{\circ}\text{C}$
- Without pilot valve ..... -20 to +60  $^{\circ}\text{C}$

Dimensions

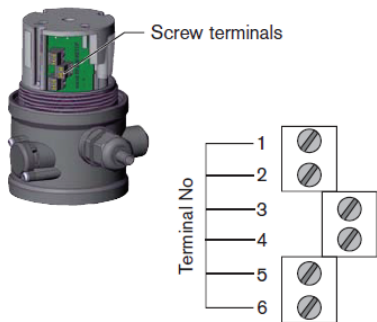


Electrical wire connection



Terminal	Configuration	External circuit
1	INI + (24 V DC) Supply	
2	INI GND Supply	
3	INI Top OUT Output 1	
4	INI Bottom OUT Output 2	
5	Valve control 0/24 V DC	
6	Valve control GND	

Residual ripple 10%



Terminal	Configuration	External circuit
1	INI Top +	
2	INI Top -	
3	INI Bottom +	
4	INI Bottom -	
5	Valve control +	
6	Valve control GND	

Alfa Laval Indication Units for LKB/LKLA - Micro switch

When Indication is all you Need

**Concept**

The indication units from Alfa Laval are designed as a simple and easy to use, electrical feedback unit for Laval butterfly valves. The units are compatible with all major PLC (Programmable Logic Controller with PNP/NPN interface) and used in food, dairy and brewery installations and in biopharmaceutical applications.

**Working principle**

A micro switch is a so called sub-miniature switch. It is activated mechanically by a roller leaf. Standard function is normally open (NO), normally closed (NC) and is always a digital signal (on/off).



**TECHNICAL DATA**

**Communication**

- Interface . . . . . Digital, NO switch
- Supply voltage . . . . . 24-55 (110) VDC/VAC
- Minimum load . . . . . 100 mA
- Maximum load . . . . . 1 A
- Electrical connection . . . . . M12 plug, (incl counterpart)

"Note! As the unit is not earthed it should not be used for voltage exceeding 55 V"



**PHYSICAL DATA**

**Materials**

- Steel parts . . . . . Stainless steel and Brass
- Plastic parts . . . . . PA6 and PPO/PS
- Seals . . . . . Nitrile (NBR) rubber
- Contact pins . . . . . Gold-plated

**Environment**

- Working temperature . . . . . -25°C to +80°C
- Protection rating . . . . . IP 67

**Cable connection**

- Counterpart . . . . . M12 socket
- Termination . . . . . Screw
- Max wire size . . . . . 0.129 mm<sup>2</sup> (AWG26)
- Cable gland entry . . . . . PG7 (3 - 6.5 mm)

**Note!**

Compatible brackets are available for the actuators and handles for LKB butterfly valves.

For further information: See also ESE001257.

**Options**

- Valve compatibility

**Accessories**

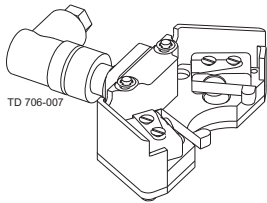
- Various cable options

**Compatible actuators**

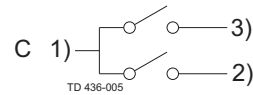
LKLA $\varnothing$ 85	Yes
LKLA $\varnothing$ 133	Yes

**Compatible Valves**

LKB	Yes
LKB-2	Yes

**Electrical connection**

- 3.  $\varnothing$ 3 closed valve
- 2.  $\varnothing$ 2 open valve





## Alfa Laval Indication Units for LKB/LKLA - Inductive

When Indication is all you Need

### Concept

The indication units from Alfa Laval are designed as a simple and easy to use, electrical feedback unit for Laval butterfly valves. The units are compatible with all major PLC (Programmable Logic Controller with PNP/NPN interface) and used in food, dairy and brewery installations and in biopharmaceutical applications.

### Working principle

The inductive prox. switches are non-contact electronic switching elements. The output signal is always a digital signal (on/off).

These indication units are easily mounted without any further mechanical adjustments and have to be installed between the air operated actuator and the valve.



### TECHNICAL DATA

#### Communication

Electrical design	DC PNP
Operating voltage	10...36 V DC
Output function	2 x NO
Current consumption	< 15 mA
Current rating	250 mA
Electrical connection	M12 plug



### PHYSICAL DATA

#### Materials

Steel parts	Stainless steel
Plastic parts	PBT; PC (polycarbonate)
Contact pins	Gold-plated

#### Environment

Working temperature	-25 °C to +80 °C
Protection rating	IP 67

#### Note!

Compatible brackets are available for the actuators and handles for LKB butterfly valves.

The M12 counterpart (Socket) connector are not a part of the indication unit package. The wiring and pinout on the M12 plug has changed, compared to the previous side indication units for LKB/LKLA.

For further information: See also ESE001257

**Options**

- Valve compatibility

**Accessories**

- Various cable options

**Compatible actuators**

LKLA ø85	Yes
LKLA ø133	Yes

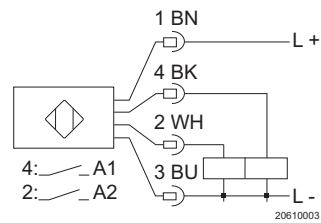
**Compatible Valves**

LKB	Yes
LKB-2	Yes

**Electrical connection**

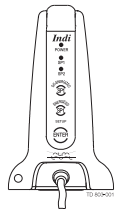
Standard M12 Connection

Pin	Setup
1	Supply +
4	Closed: OUT + 1 (A1)
2	Open: OUT + 2 (A2)
3	Supply -

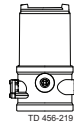
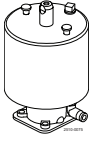


Top Unit  
 Product code: 5409

Valves: DV-ST (from size DN15), SRC, Unique SSV (Except SRC-LS and Unique SSV- LS, Except: Unique Mixproof U/L seat lift), Unique SSV Aseptic, Unique Mixproof, SMP-BC, SMP-SC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	PPL EUR	Specification	Size		IndiTop
			DN/OD	DN	
9613418101	257	8 - 30 VDC/AC, 5 metres cable Load: Max.: 50 mA 2 Position Feedback Type: PNP/NPN	25-101.6	25-150	
9613418102	277	8 - 30 VDC/AC, 10 metres cable Load: Max.: 50 mA 2 Position Feedback Type: PNP/NPN	25-101.6	25-150	
9613418103	328	8 - 30 VDC/AC, 0.5 metres w/M12 plug, incl. plug counterpart Load: Max.: 50 mA 2 Position Feedback Type NPN	25-101.6	25-150	
9613418104	328	8 - 30 VDC/AC, 0.5 metres w/M12 plug, incl. plug counterpart Load: Max.: 50 mA 2 Position Feedback Type PNP	25-101.6	25-150	

Product code: 5417

Diaphragm Actuator Stainless Steel/Stainless Steel						Indication unit 8697			
Item No.	RCPL	Function	Valve	Group	Pilot valve	H87xW66	Position feedback	Interface	SS/SS
9615364101	304	NC NO AA	DN 8	1	0		Open and Close	24 VDC Inductive sensor	
9615364103	304		DN 15						
9615364105	304		DN 20	2					
			DN 25						
9615364106	304		DN 40	3					
			DN 50						
9615364107	304		DN 65	4					
9615364201	320		DN 8	1	0	Single Double Acting	Open and Close	Zone 1 NAMUR sensor	
9615364203	320		DN 15						
9615364205	320		DN 20	2					
			DN 25						
9615364206	320		DN 40	3					
		DN 50							
9615364207	320	DN 65	4						
9615364207	320	DN 80	4						