



Leave Surveillance to the Top

Alfa Laval ThinkTop® Basic Intrinsically Safe

Concept

The ThinkTop® Basic is a uniform modular control unit that consists of a proven no-touch, set-and-forget sensor system with light-emitting diodes (LEDs), solenoid valves and valve control sensor board for connection to any PLC (Programming Logic Controller) system with one of the three interfaces; Digital and AS-Interface.

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

Working principle

ThinkTop is an automated control unit that can be fitted with up to three solenoid valves and who convert the electrical PLC and sensor signals into mechanical energy to open or close the air-operated valve, using the physical stimulus of an indication pin mounted on the valve stem. ThinkTop Basic fits onto all Alfa Laval sanitary actuators equipped with mushrooms. Installation is straightforward; no special expertise, adapters or tools are required.



TECHNICAL DATA

Communication

Interface Intrinsic Intrinsic

Sensor board

Feedback signal #1 De-energized valve

Feedback signal #2 Energized valve

Inductive sensor

Switching element function NAMUR NC

Nominal voltage 8 V

Indication of the state LED, yellow

EMC in accordance with IEC / EN 60947-5-2:2004; NE 21

Standards DIN EN 60947-5-6 (NAMUR)

Certificate of conformity PTB 00 ATEX 2032 X

Solenoid valve

Air supply 150-700 kPa (1.5-7 bar)

Type of solenoids 3/2-ways

Numbers of solenoids 0-2

Manual hold override Yes

Push-in fittings \varnothing 6 mm or 1/4"

Certificate of conformity KEMA 08 ATEX 0093 X

PHYSICAL DATA

Materials

Steel parts Stainless steel and Brass

Plastic parts Black Nylon PA 6 with SS fibers

Seals Nitrile (NBR) rubber

Environment

Working temperature -10 °C to +45 °C

Protection class IP66 and IP67

Protection class equivalent NEMA 4.4x and 6P

Ex classification code II 2G/D EEx ia IIC T6

Cable connection

Main cable gland PG11 (4 - 10 mm)

Max wire size 0.75 mm² (AWG 19)

Note!

For further information: See also ESE00810










Options

- Solenoid valve configuration
- Pneumatic tubing interface

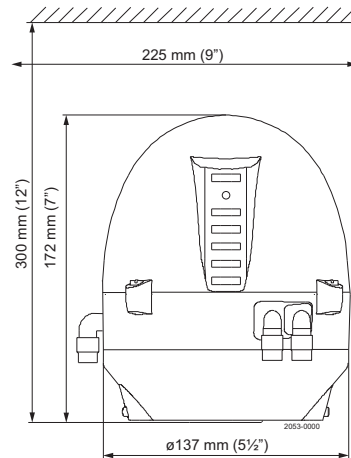
Accessories

- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC and i-SSV valves
- Special indication pin for Unique SSV-LS, Unique SSV High Pressure valves
- Adaptor for Unique SSSV valves


Electrical connection

	1	1. Sensor 1 [De-energized] (blue) 8 VDC (-)
	2	2. Sensor 1 [De-energized] (brown) (+)
	3	3. Sensor 2 [Energized] (blue) 8 VDC (-)
	4	4. Sensor 2 [Energized] (brown) (+)
	5	5. Common; solenoids (black) 12 VDC (-)
	6	6. Input; solenoid #1 (red) (+)
	7	7. Input; solenoid #3 (red) (+)

Dimensions



The following table list show the ATEX evaluated Alfa Laval valves which the ThinkTop Basic Intrinsicly Safe can be installed on to be accordance with Atex Directive 94/9/EC.

Valve / Actuator type	ATEX evaluation notes
Unique SSV ATEX	 !! 2 G D c T4
Unique Mixpeoof	Non electric equipment with no own ignition source which can be used within the equipment-group II 2 G/D or II 3 G/D if removing the blue plastic cover from the bottom of the Mixproof valve.
SRC (except SRC-LS)	
SMP-SC, TO, BC	
LKLA-T	Non electric equipment with no own ignition source which can be used within the equipment-group II 2 G/D or II 3 G/D
Koltek MH	
SBV	

Electrical interface

To comply with the ATEX protective system all individual electrical signals from the control unit must be connected to an electrical barrier in the safe area to obtain the intrinsic safe circuit. The electrical barrier must comply with the standard EN 60079-14 and shall always be specified in accordance with the following maximum values as shown in the table below for sensor and solenoid valve (I/O signals).

Sensor

The two inductive NAMUR sensors must be connected to a certified intrinsically safe circuit (e.g. Zener barrier) for apparatus group IIC with the following maximum values:

Max allowed Voltage (U)	15	V
Max allowed Current (Ii)	50	mA
Max allowed Power (Pi)	1	W
Max Inductance (Li)	110	mH
Max Capacitance (Ci)	0.08	µF

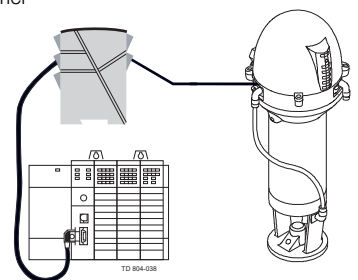
Solenoid valve

The intrinsic safe solenoid valves must also be connected to a certified intrinsically safe circuit (e.g. Zener barrier) for apparatus group IIC with the following maximum values:

Max allowed Voltage (Ui)	28	V
Max allowed Current (Ii)	225	mA
Max allowed Power (Pi)	1	W
Max Inductance (Li)	0.03	mH
Max Capacitance (Ci)	0.006	µF

Safe Area
Electrical barrier

Hazardous Area - Zone 1



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