Alfa Laval ThinkTop® Basic Digital

Sensing and control

Introduction

The Alfa Laval ThinkTop® Basic Digital is a modular valve control unit that offers reliable, cost-effective operation and standard functionality for automated sensing and control of hygienic valves. ThinkTop Basic Digital provides real-time information about valve operating status 24/7 while boosting productivity.

Application

The ThinkTop Basic Digital is designed to control the fluid handling process in hygienic applications across the dairy, food, beverage, biotechnology, pharmaceutical and many other industries.

Benefits

- Reliable and accurate valve sensing and control
- Proven and inherently safe design
- Low total cost of ownership
- Watertight design
- Easy to operate

Standard design

The ThinkTop Basic Digital valve sensing and control unit 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 programmable logic controller (PLC) system with a digital interface. It fits on all Alfa Laval hygienic valves; no adapter is required. Installation is straightforward. No special expertise or tools are required. To initiate manual setup, simply press a push-button startup sequence.

Working principle

The sensor system accurately detects valve stem movement, the position of the valve at any given time, with an accuracy of ± 0.1mm through the use of microchip sensors. To locate the current valve position, sensor chips inside the sensor board calculate the angle between the axial magnetic field produced by an indication pin mounted on the valve stem.

The solenoid valves receive signals from the PLC system to activate or deactivate the air-operated valve. It then transmits feedback signals indicating the main valve position and condition back to the PLC system.

In the control unit, up to three electric solenoid valves can physically convert compressed air into mechanical energy to activate or deactivate the pneumatic valve actuator.

Each control unit fits any Alfa Laval hygienics valve and has a valve tolerance band with a default tolerance. This eliminates the need to re-adjust the sensors and boosts productivity. LEDs conveniently display the main valve position, solenoid activation, setup and local fault indication on the control unit.

Certificates

CE

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TECHNICAL DATA

Communication	
Interface:	Digital PNP/NPN
Supply voltage:	24 ± 10% VDC

Sensor board	
Max current consumption:	45mA
Feedback signal #1:	De-energized valve
Feedback signal #2:	Energized valve
Feedback signal #5:	Status
Valve tolerance band options:	1
Default tolerance band:	± 5 mm
Sensor accuracy:	± 0.1 mm
Stroke length:	0.1 - 80 mm

Solenoid valve	
Max current consumption:	45mA
Air supply:	300-900 kPa (3-9 bar)
Type of solenoids:	3/2-ways or 5/2-ways
Numbers of solenoids:	0-3
Manual hold override:	Yes
Throttle, Air in/out 1A, 1B:	0 - 100%
Push-in fittings:	ø6 mm or 1/4”

PHYSICAL DATA

Materials	
Steel parts:	Stainless steel and Brass
Plastic parts:	Black Nylon PA 6
Seals:	Nitrile (NBR) rubber

Environment	
Working temperature:	-20 °C to +85 °C
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection	
Main cable gland:	PG11 (4 - 10 mm)
Max wire size:	0.75 mm^2 (AWG 19)

Note!
For further information: See also ESE00225
The ThinkTop has Patented Sensor System, Registered Design and Registered Trademark owned by Alfa Laval

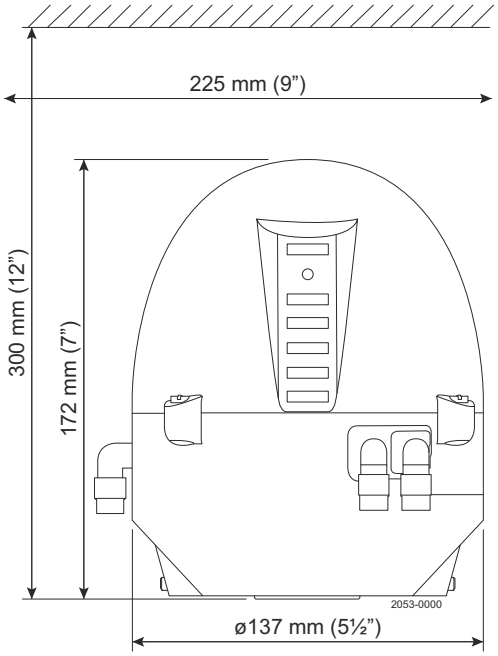
Options

- Communication interface
- Solenoid valve configuration
- Pneumatic tubing interface

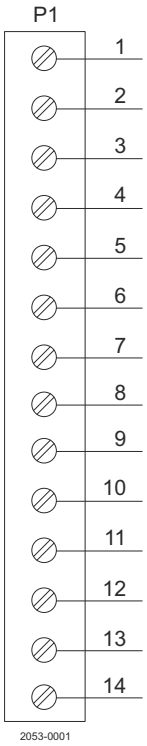
Accessories

- 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 7000 Small Single Seat valves

Dimensions (mm)



Electrical connection



1	De-energized (PLC input)
2	Energized (PLC input)
3	Activation of solenoid # 1 (PLC output)
4	Activation of solenoid # 2 (PLC output)
5	Activation of solenoid # 3 (PLC output)
6	Supply votlage sensor (+) 10-30 VDC
7	Supply votlage sensor (+) 0 VDC
8	Common supply solenoids
9	PNP/NPN jumper
10	PNP/NPN jumper
11	Solenoid com.blue
12	Solenoid # 1, internal connection (Grey)
13	Solenoid # 2, internal connection (Grey)
14	Solenoid # 3, internal connection (Grey)

ALFA ENGENHARIA
Authorized Distributor

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