Leave Surveillance to the Top

Alfa Laval ThinkTop® DeviceNet™ 11-25 VDC

Concept

The ThinkTop ® is designed to ensure optimum valve control in conjunction with Alfa Laval butterfly, single-seat and Mixproof valves and it is compatible with all major PLC systems (Programmable Logic Controller with PNP/NPN interface). It is for use in food, dairy and brewery installations and in biopharmaceutical applications.

Working principle

The ThinkTop® is a control head including indication units and solenoid valves to control all kinds of processing valves. It is used to control and supervise pneumatic valves and it is mounted on the top of the valve. It receives signals from a PLC to control the valve and it sends feedback signals to the PLC to indicate when the valve is in a certain position. To adapt the sensor board to the specific valve and to the application, the user sets up the ThinkTop either by the local keys or by using the key pad (which is ordered separately). When using the key pad it is not necessary to dismantle the top unit.

TECHNICAL DATA

Communication

Interface	DeviceNet
Supply voltage	11 - 25 VDC
Class 4 messaging	2 byte Polling
Baud rates	125K, 250K, 500K
Default slave address	63

Sensor board

Power supply	24 VDC, 1 W
Feedback signal #1	Closed valve
Feedback signal #2	Open valve
Feedback signal #3	Seat-lift 1 or 1 External signal
Feedback signal #4	Seat-lift 2 or 1 External signal
Feedback signal #5	Status
Valve tolerance band	1-5
Default tolerance band	± 0.2 in.
Sensor accuracy	± 0.0039 in.
Stroke length	0.0039 - 3.15 in.

Solenoid valve

Supply voltage	8 VDC ± 5%, 0.75 W
Air supply	43.5 - 130.5 PSI(3-9 bar)
Type of solenoids	3/2-ways or 5/2-ways
Numbers of solenoids	0-3
Manual hold override	Yes
Throttle function air inlet/outlet	0100 %
Push-in fittings	ø6 mm or 1/4”

PHYSICAL DATA

Materials

Plastic parts	Blue Nylon PA 12 Reinforced
Steel parts	1.4301 (304) and 1.4404 (316)
Seals	Nitrile (NBR) rubber

Environment

Working temperature	-4 °F to +185 °F
Protection class	IP66 and IP67

Cable connection

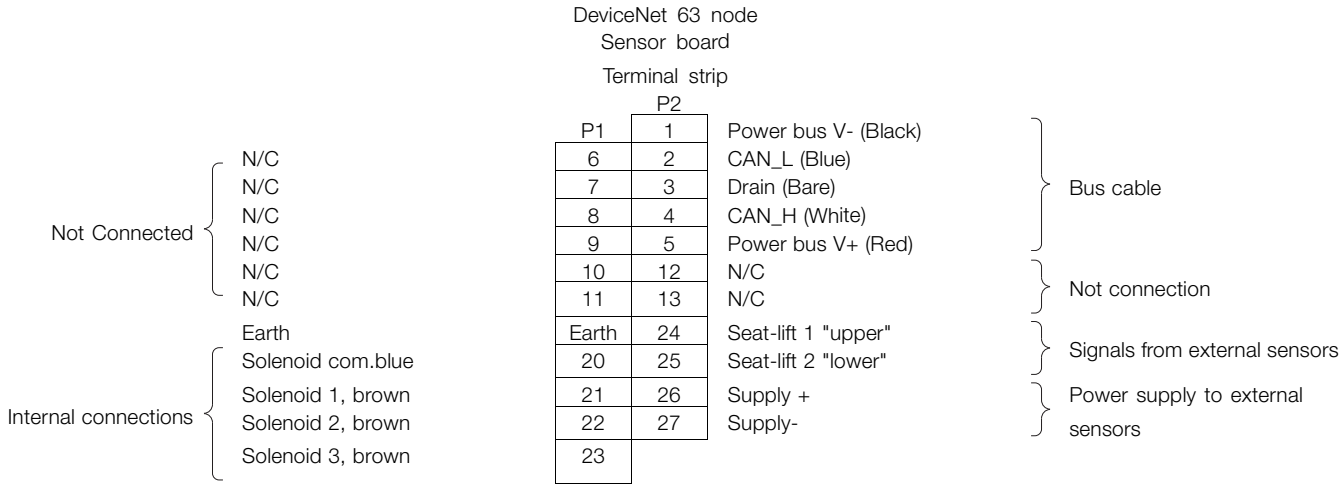
Main cable gland	PG11 (ø0.16 - ø0.39 in.)
Cable gland for external sensor	PG7 (ø0.12 - ø0.26 in.)
Max wire diameter	0.03 in2 (AWG 20)

DeviceNet features			
Generic		Master/scanner	
		I/O Slave messaging supported by ThinkTop® DeviceNet	
Explicit peer to peer messaging	No	• Bit strobe No	No
I/O peer to peer messaging	No	• Polling	Yes
Configuration consistency value	No	• Cyclic	No
Faulted node recovery	No	• Change of state (COS)	No
Configuration method	EDS fil, Top46-7j	ThinkTop before 2012	
	EDS fil, T-Top RTA	ThinkTop after 2012	

Typical Power Consumption ThinkTop

Test conditions = One ThinkTop connected with 1 feedback active (on) and		
No solenoid valve on	Supply voltage 24 VDC	34 mA
1 solenoid valve active	Supply voltage 24 VDC	58 mA
2 solenoid valves active	Supply voltage 24 VDC	82 mA
3 solenoid valves active	Supply voltage 24 VDC	106 mA

Electrical connection

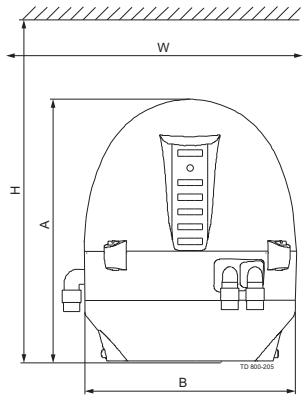


DeviceNet bits assignment

For DeviceNet the following bit assignment can be used

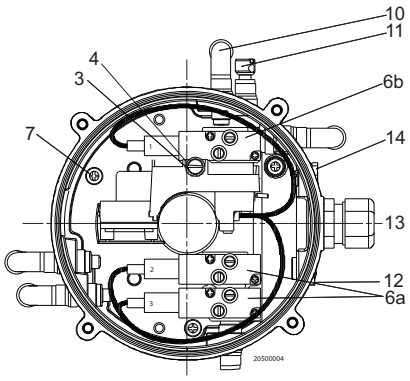
Valve value		Valve command	
DI0	Feedback #1 Closed valve	DO0	Out #1 Not Connected
DI1	Feedback #2 Open valve	DO1	Out #2 Solenoid valve 1
DI2	Feedback #3 Seatlift 1	DO2	Out #3 Solenoid valve 2
DI3	Feedback #4 Seatlift 2	DO3	Out #4 Solenoid valve 3
DI4	Feedback #5 Status	DO4	Out #5 Not Connected
DI5	Feedback #6 Not Connected	DO5	Out #6 Not Connected
DI6	Feedback #7 Not Connected	DO6	Out #7 Not Connected
DI7	Feedback #8 Not Connected	DO7	Out #8 Not Connected

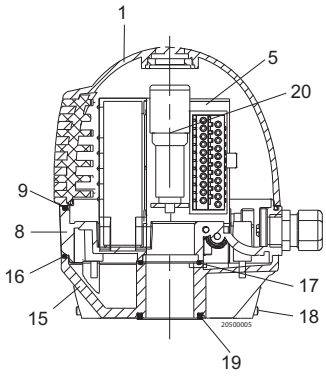
Dimensions



Note! This is the basic design. Recommended clearance around the ThinkTop				
Valve Type	**W**	**H**	**A**	**B**
Unique SSV NC	8.86	9.84	6.76	ø5.39
SMP-SC/-BC/-TO	8.86	9.84	6.76	ø5.39
Unique Mixproof	8.86	9.84	6.76	ø5.39
MH	8.86	9.84	6.76	ø5.39
SBV	8.86	9.84	6.76	ø5.39
Unique SSV NO	8.86	12.59	6.76	ø5.39
LKLA-T	8.86	11.81	6.76	ø5.39

Basic design





1. Shell
2. N/A
3. Screw
4. Washer
5. Sensor board
6. Solenoid valve*
7. PT screw
8. Base
9. Special X-ring, grey
10. Air fittings
11. Blow-off valve
12. Thread plug, PG7
13. Cable gland, PG11
14. Gore Vent. membrane
15. Adapter
16. Special X-ring, black
17. O-ring
18. Allen screw
19. Special X-ring
20. Indication pin

* 6a: Solenoid valve (3/2)
* 6b: Solenoid valve (3/2 or 5/2).

Options

- Gore Vent. w/adapter (Fig. 1 Basic Design pos. 14) for ThinkTop before November 2006; 9613431501

Accessories

- IR keypad
- External PNP sensors
- Main cable gland PG11
- Cable gland PG7 for external sensor
- External sensor bracket for Unique Mixproof

Ordering

When ordering please purchase the following:

- ThinkTop DeviceNet 63 node .
- Number of solenoid valves (0-3).
- Type of solenoid valves (3/2 or 5/2).
- Push-in fittings ø6 mm or 1/4"
- Please state if for series 700 valves.
- Special indication pin; 9613158101 For Unique SSV-LS valves
- Special indication pin; 9612637001 For SRC-LS Stop valve size 2½"-4"/DN 65 - 100
- Special indication pin; 9613158101 For Unique SSV High Pressure valve size 3"-4"/DN 80100

Note!

For further information: See also ESE000355

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

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How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.us to
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