Alfa Laval ThinkTop® V40

Sensing and control

Introduction

Get process reliability with the Alfa Laval ThinkTop V40. This user-friendly, resource-smart control top for butterfly and single seat valves enhances product safety and uptime. Advanced communication protocols provide valve status in real time, streamlining operations and ensuring efficiency across the dairy, food, beverage, and home and personal care industries.

Benefits

- Safe, reliable production due to enhanced control
- User-friendly design for fast installation, automatic valve detection and low maintenance
- Resource-efficient operation with low energy use and long service life
- Precise control for quick response with digital and ASi communication protocols
- Safe production due to durable, IP69K-rated construction

Enhance process reliability and product safety with the Alfa Laval ThinkTop V40 control unit. Gain real-time monitoring and control with 24/7 valve status updates. An integrated solenoid valve enables precise actuation, while accurate sensors provide real-time valve position feedback, reducing human error and maximizing uptime.

Durable and easy to clean, the control top meets strict industry standards for hygiene. A plug-and-play setup ensures fast installation, while 360° LED status indication improves visibility.

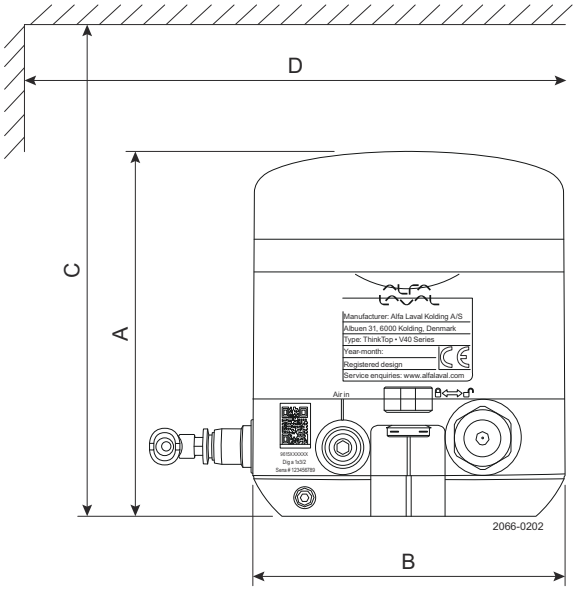
When laying the groundwork for basic automation, the ThinkTop V40 is a durable, scalable, and cost-effective choice for efficient valve control.

Think automation. ThinkTop V40.

Certificates

A selection of the essential certificates available on ThinkTop:

Dimensions



	mm	inch
A	123	4.84
B	105	4.13
C	200	7.87
D	150	5.91

Technical Data

Material	
Plastic parts:	Nylon PA 12
Steel parts:	1.4301 / 304
Gaskets:	Nitril / NBR
Air fittings:	Nickel plated brass / Nylon PA6
M12 chassis connector:	Stainless steel / Gold plated pins

Environment	
Working temperature:	-10 °C to +60 °C / +14 °F to +140 °F
Protection class (IP):	IP69K
Protection class (NEMA):	4, 4X and 6

Control board	
Communication:	ASi 3.0, DIO 24 VDC
Sensor accuracy:	±1 mm / ±0.4"
Mean Time To Failure (MTTF):	224 years
Approvals:	UL/CSA Certificate: E174191

Solenoid valve	
Supply voltage:	24 VDC ± 10%
Nominal power:	0.3 W
Air supply:	300-700 kPa / 3-7 bar / 43.5-101.5 psi
Air quality:	ISO 8573-1:2010 [3:3:3]
Type of solenoids:	3/2-ways
Number of solenoids:	1
Manual hold override:	Yes
B10 data:	5 million cycles
Recommendation:	Operate once a month to prevent dry-out

Throughout this document, SV is used as an abbreviation for a solenoid valve.

Air fitting	
Threaded air fitting G⅛:	Ø6 mm (Rim blue) or ¼" (Rim Grey)
Elbow push-in fittings:	Ø6 mm (Rim blue) or ¼" (Rim Grey)

Cable connection	
Main cable gland entry Digital:	M16 (Ø4-10 mm / 0.16-0.39")
Main cable gland entry AS-Interface:	M16 (Ø2-7 mm / 0.08-0.28")
Max. wire diameter:	0.75 mm² (AWG20)

M12 chassis connector	
AS-Interface V40:	2 wire, 4-pin series
Digital interface V40:	6 wire, 8-pin series

Vibration	
Vibration:	18 Hz-1kHz @ 7.54 g RMS
Shock:	100 g

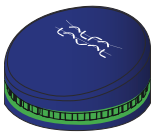
Humidity	
Constant humidity:	+40 °C / +140 °F, 21 days, 93% RH
Cyclic humidity:	-25 °C, +55 °C / -13 °F, +131 °F, 93% RH, 12 cycles

Accessories by functionality	
Valve “opening” speed reduction:	0-100%. Outlet air fitting on ThinkTop
Valve “closing” speed reduction:	0-100%. Inlet air fitting on actuator
Valve “closing” speed increase:	Quick air exhaust, Ø6 mm or ¼"

Operational Data

ThinkTop LED indication

ThinkTop features a 360° light guide. When the sensor target is within the respective setup position band, the corresponding colour lights up.



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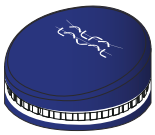

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Valve position			
ThinkTop Mode	Actuator	De-energized	Energized
	Factory setting	Green flashing	N/A
	Operation	Green	White

Valve compatibility chart

Use Anytime configurator for correct selection of ThinkTop V40 on different valve size and types.

Common applications	Incompatible valves
• Single Seat valves	• Valves without actuator stem and mushrooms
• Butterfly valves	• Unique SSV Long Stroke
• Ball valves	• Unique SSV Pressure Relief Valve
• Shutter valves	• Diaphragm valves
• Double seat valves	• Koltek Type 633 three position actuator, valve size 1-3"
• Double seal valve	• Regulating valves
• Small Single Seat valve (adaptor required)	• Safety valves
	• Sample valves
	• SMP-EC
	• Other valve brands

Digital interface

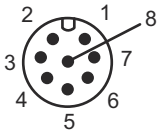
Device name	ThinkTop V40 24V Digital - PNP
Voltage supply	24VDC ± 10%; according to EN 61131-2
Protection	• Reverse polarity (24VDC ± 10%); EN 61131-2 • Voltage interruption and brown-out; EN 61131 • Short circuit; EN 61131
Current consumption	Nominal 30 mA (Idle)
Outputs to PLC	Max. 100 mA (solenoid valve and seat lift sensor active)
PLC input card	Max. rated 24V / 100 mA
UL supply	Class 2 according to cULus
Voltage-drop	Typical 3V at 50 mA
Terminal type	• Spring force push-in technology • Supports nominal wire cross-section between 1.0 mm² [17AWG] and 0.30 mm² [22AWG] • Supports wire and ferrules for wire cross-section of 0.75 mm² [18AWG] with pin length 12 mm

Electrical connections

Terminals V40 Digital-IO 24V			
1	Power supply	24V	(brown) (M12, pin 1)
2 [1]	Power supply	GND	(blue) (M12, pin 3[1])
3 [1]	out (PLC in)	Valve de-energised (DE-EN)	(white) (M12, pin 2[1])
4	out (PLC in)	Main valve energised (EN)	(black) (M12, pin 4)
5		Not connected	(grey) (M12, pin 5)
6	in (PLC in)	Solenoid valve 1 for main valve (SV1)	(pink) (M12, pin 6)

[1] Please be mindful of the difference between the number sequence of the control board terminal and the M12 plug pins.

Plug type



M12 option (8-pin A-coded plug).
Pin numbers and terminal numbers are aligned.

Note!
Suitable cables are available as accessories.

AS-iInterface

Device name	ThinkTop V40 ASi 3.0
Voltage supply	AS-Interface 29.5-31.6 VDC
Protection	• Reverse polarity (24 VDC ± 10%); EN 61131-2 • Voltage interruption and brown-out; EN 61131 • Short circuit; EN 61131
Current consumption	• Nominal: 30 mA (idle) • Max. 100 mA (solenoid valve and seat lift sensor active)
Terminal type	• Spring force push-in technology • Supports nominal wire cross-section between 1.0 mm² [17AWG] and 0.30 mm² [22AWG] • Supports wire and ferrules for wire cross-section of 0.75 mm² [18AWG] with pin length 12 mm
ASi specification v3.0	• Supports extended A/B addressing and is compatible with M4 ASi master profile, allows up to 62 nodes on an ASi network • **Slave profile = 7A77**
ASi addressing	• Default slave address (Node) is = **0** • Address (Node) changes with a standard handheld ASi addressing device or via ASi Master Gateway

Bit table

For the AS-Interface versions, the following bit assignment will be used.

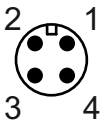
PLC system / Gateway Output table	
SV1. Main valve	O1

PLC system / Gateway Input table	
DE-EN	I0
EN. Main valve	I1

Electrical connections

Terminals V40 AS-Interface			
1	ASi supply	ASi +	(brown) (M12, pin 1)
2	ASi supply	ASi –	(blue) (M12, pin 3)

Plug type



M12 option (4-pin A-coded plug)
Pin numbers and terminal numbers are aligned