

# Alfa Laval ThinkTop<sup>®</sup> 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.

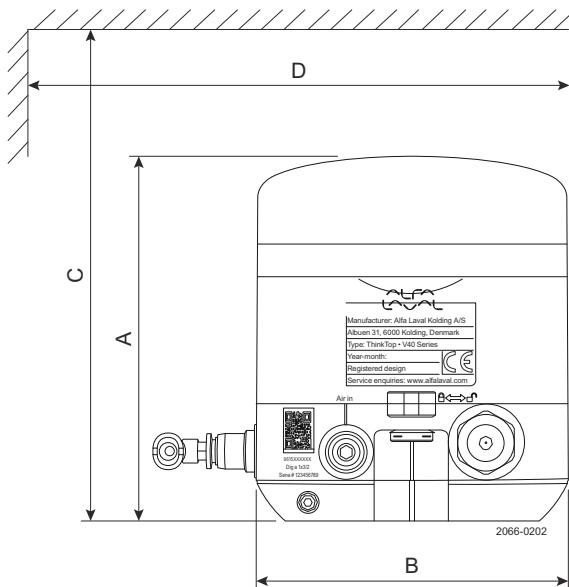
Think automation. ThinkTop V40.

### 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:	Nitrit / 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 G1/8:	Ø6 mm (Rim blue) or 1/4" (Rim Grey)
Elbow push-in fittings:	Ø6 mm (Rim blue) or 1/4" (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 mm <sup>2</sup> (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 1/4"

## 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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**Valve position**

Actuator	<input checked="" type="checkbox"/> De-energized	<input type="checkbox"/> Energized
ThinkTop Mode	Green flashing	N/A
Factory setting	Green	White
Operation		

**Valve compatibility chart**

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

**Common applications**

- Single Seat valves
- Butterfly valves
- Ball valves
- Shutter valves
- Double seat valves
- Double seal valve
- Small Single Seat valve (adaptor required)
- Diaphragm valves SS/HP

**Incompatible valves**

- Valves without actuator stem and mushrooms
- Unique SSV Long Stroke
- Unique SSV Pressure Relief Valve
- Diaphragm valves with SS/HP actuator of DN65 and above
- Koltek Type 633 three position actuator, valve size 1-3"
- Regulating valves
- 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 <ul style="list-style-type: none"> <li>• Reverse polarity (24VDC ± 10%); EN 61131-2</li> </ul>
Protection	<ul style="list-style-type: none"> <li>• Voltage interruption and brown-out; EN 61131</li> <li>• Short circuit; EN 61131</li> </ul>
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 <ul style="list-style-type: none"> <li>• Spring force push-in technology</li> <li>• Supports nominal wire cross-section between 1.0 mm<sup>2</sup> [17AWG] and 0.30 mm<sup>2</sup> [22AWG]</li> <li>• Supports wire and ferrules for wire cross-section of 0.75 mm<sup>2</sup> [18AWG] with pin length 12 mm</li> </ul>
Terminal type	



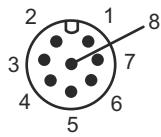
## Electrical connections

### V40 Digital-IO 24V

Terminal	Control Board		Colour code	M12 plug pin
1	24V	Power supply	BN (brown)	Pin: 1
2 <sup>1</sup>	GND	Power supply	BU (blue)	Pin: 3 <sup>1</sup>
3 <sup>1</sup>	Valve de-energised (DE-EN)	out (PLC in)	WH (white)	Pin: 2 <sup>1</sup>
4	Main valve energised (EN)	out (PLC in)	BK (black)	Pin: 4
5	Not connected		GY (grey)	Pin: 5
6	Solenoid valve 1 for main valve (SV1)	in (PLC out)	PK (pink)	Pin: 6

<sup>1</sup>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).



### 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	<ul style="list-style-type: none"> <li>• Reverse polarity (24 VDC <math>\pm</math> 10%); EN 61131-2</li> <li>• Voltage interruption and brown-out; EN 61131</li> <li>• Short circuit; EN 61131</li> </ul>
Current consumption	<ul style="list-style-type: none"> <li>• Nominal: 30 mA (idle)</li> <li>• Max. 100 mA (solenoid valve and seat lift sensor active)</li> </ul>
Terminal type	<ul style="list-style-type: none"> <li>• Spring force push-in technology</li> <li>• Supports nominal wire cross-section between 1.0 mm<sup>2</sup> [17AWG] and 0.30 mm<sup>2</sup> [22AWG]</li> <li>• Supports wire and ferrules for wire cross-section of 0.75 mm<sup>2</sup> [18AWG] with pin length 12 mm</li> </ul>
ASi specification v3.0	<ul style="list-style-type: none"> <li>• Supports extended A/B addressing and is compatible with M4 ASi master profile, allows up to 62 nodes on an ASi network</li> <li>• <b>Slave profile = 7A77</b></li> </ul>
ASi addressing	<ul style="list-style-type: none"> <li>• Default slave address (Node) is = 0</li> <li>• Address (Node) changes with a standard handheld ASi addressing device or via ASi Master Gateway</li> </ul>



## Bit table

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

### PLC system / Gateway Output table

SV1. Main valve	O1
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### PLC system / Gateway Input table

DE-EN	I0
EN. Main valve	I1

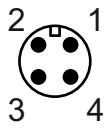
## Electrical connections

### V40 AS-iInterface

Terminal	Control Board	Colour code	M12 plug pin
1	ASi +	ASi supply	BN (brown)
2 <sup>1</sup>	ASi -	ASi supply	BU (blue)

<sup>1</sup>Please be mindful of the difference between the number sequence of the control board terminal and the M12 plug pins.

## Plug type



M12 option (4-pin A-coded plug)

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200017170-5-EN-US

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