



Alfa Laval ThinkTop® Digital

Sensing and control

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Introduction

The Alfa Laval ThinkTop® 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 Digital provides real-time information about valve operating status 24/7 while boosting productivity and securing traceability.

Application

The ThinkTop 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 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. Or set up without dismantling the control unit using the optional infrared (IR) keypad for remote control.

Working principle

The sensor system accurately detects valve stem movement, the position of the valve at any given time, with an accuracy of $\pm 0.1\text{mm}$ 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 hygienic valve and provides a tolerance band for valves to prevent product contamination and failure. This eliminates the need to readjust the sensors and boosts productivity.

LEDs conveniently display all the valve positions, solenoid activation, setup and local fault indication on the control unit.

Certificates



TECHNICAL DATA

Communication

Interface:	Digital PNP/NPN
Supply voltage:	8-30VDC

Sensor board

Max current consumption:	45mA
Feedback signal #1:	Closed valve
Feedback signal #2:	Open valve
Feedback signal #3:	Seat-lift 1
Feedback signal #4:	Seat-lift 2
Feedback signal #5:	Status
Valve tolerance band options:	5
Default tolerance band:	± 0.2"
Sensor accuracy:	± 0.004"
Stroke length:	0.004" - 3.15"

Solenoid valve

Max current consumption:	45mA
Air supply:	(40 - 130 PSI)
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:	Blue Nylon PA 12
Seals:	Nitrile (NBR) rubber

Environment

Working temperature	(-4°F to +185°F)
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Main cable gland:	PG11 (0.16" - 0.39")
Max wire size:	AWG 19
Optional cable gland:	PG7 (0.16" - 0.27")



Note!

For further information: See also ESE00353

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

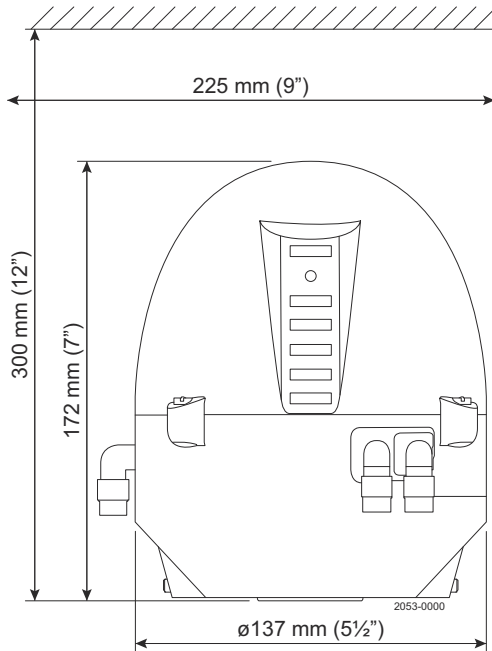
Options

- Solenoid valve configuration
- Pneumatic tubing interface

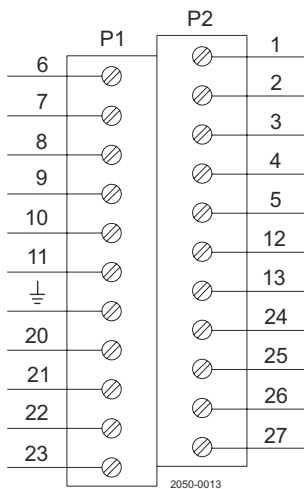
Accessories

- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC valves
- Special indication pin for Unique 7000-LS, Unique 7000 High Pressure valves
- Adaptor for Unique 7000 small single seat valves

Dimensions (inch)



Electrical connection



6	Solenoid 1	1	Closed valve
7	Solenoid 2	2	Open valve
8	Solenoid 3	3	Seat-lift 1
9	Supply +	4	Seat-lift 2
10	Supply -	5	Status
11	Solenoid com	12	NPN/PNP Jumper
Earth	Earth	13	NPN/PNP Jumper
20	Solenoid common grey	24	Seat-lift 1 "upper"
21	Solenoid 1, grey	25	Seat-lift 2 "lower"
22	Solenoid 2, grey	26	Supply +
23	Solenoid 3, grey	27	Supply -

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Alfa Laval ThinkTop® AS-Interface

Sensing and control

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Introduction

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

Application

The ThinkTop AS-Interface is designed for use on Alfa Laval butterfly, single seat, and mixproof valves 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 AS-Interface 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 an AS-Interface v2.1, 31 node, or v3.0, 62 node. 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. Or set up without dismantling the control unit using the optional infrared (IR) keypad for remote control.

Working principle

The sensor system accurately detects valve stem movement, the position of the valve at any given time, with an accuracy of $\pm 0.1\text{mm}$ 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 de-activate 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 hygienic valve and provides a tolerance band for valves to prevent product contamination and failure. This eliminates the need to readjust the sensors and boosts productivity.

LEDs conveniently display the main valve position, solenoid activation, setup and local fault indication on the control unit.

Certificates



TECHNICAL DATA

Communication

Interface option 1:	AS-Interface v2.1, 31 node
Supply voltage:	29.5V - 31.6 VDC
Slave profile:	7.F.F.F
Default slave address:	0
Interface option 2:	AS-Interface v3.0, 62 node
Supply voltage:	29.5V - 31.6 VDC
Slave profile:	7.A.7.7
Default slave address:	0

Sensor board

Max current consumption:	45mA
Feedback signal #1:	Closed valve
Feedback signal #2:	Open valve
Feedback signal #3:	Seat-lift 1
Feedback signal #4:	Seat-lift 2
Feedback signal #5:	Status
Valve tolerance band options:	5
Default tolerance band:	± 0.02"
Sensor accuracy:	±0.004"
Stroke length:	0.004" - 3.15"

Solenoid valve

Max current consumption:	45mA
Air supply:	40 - 130 PSI
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:	Blue Nylon PA 12
Seals:	Nitrile (NBR) rubber

Environment

Working temperature:	-4 °F to + 185 °F
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Main cable gland:	PG11 (0.16" - 0.39")
Optional main M12 plug:	2 wire (A coded)
Max wire size:	AWG 19
Optional cable gland:	PG7 (0.16" - 0.27")



Note!

For further information: See also ESE00356

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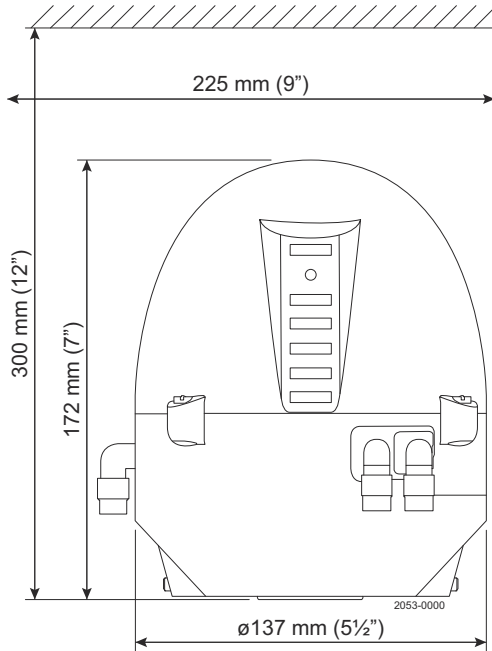
Options

- Communication interface
- Solenoid valve configurator
- Pneumatic tubing interface
- Main cable connection

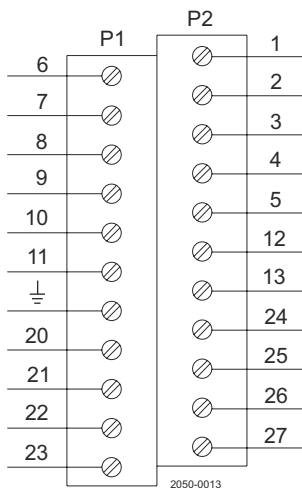
Accessories

- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC valves
- Special indication pin for Unique 7000-LS, Unique 7000 High Pressure valves
- Adaptor for Unique 7000 Small Single Seat valves

Dimensions (inch)

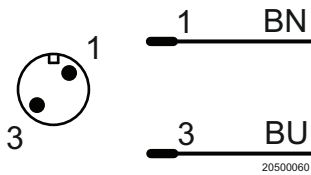


Electrical connection



6	ASI + (BN, Brown)	1	N/C
7	ASI - (BU, blue)	2	N/C
8	N/C	3	N/C
9	N/C	4	N/C
10	N/C	5	N/C
11	N/C	12	PWM Jumper
Earth	Earth	13	PWM Jumper
20	Solenoid common grey	24	Seat-lift 1 "upper"
21	Solenoid 1, grey	25	Seat-lift 2 "lower"
22	Solenoid 2, grey	26	Supply +
23	Solenoid 3, grey	27	Supply -

M12 Plug option



AS-Interface bits assignment

For AS-interface version with 31 and 62 node, the following bit assignment can be used.

DI0	Feedback #1 Closed valve
DI1	Feedback #2 Open valve
DI2	Feedback #3-4 Seat lift 1 or Seat lift 2
DI3	Feedback #5 Status
DO0	Out #1 Not connected
DO1	Out #2 Solenoid valve 1
DO2	Out #3 Solenoid valve 2
DO3	Out #4 Solenoid valve 3

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Alfa Laval ThinkTop® DeviceNet

Sensing and control

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Introduction

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

Application

The ThinkTop DeviceNet 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 DeviceNet 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 DeviceNet 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. Or set up without dismantling the control unit using the optional infrared (IR) keypad for remote control.

Working principle

The sensor system accurately detects valve stem movement, the position of the valve at any given time, with an accuracy of $\pm 0.1\text{mm}$ 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 up to four valve positions and conditions 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 hygienic valve and provides a tolerance band for valves to prevent product contamination and failure. This eliminates the need to re-adjust the sensors and boosts productivity.

LEDs conveniently display all the valve positions, solenoid activation, setup and local fault indication on the control unit.

Certificates



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

Max current consumption:	45mA
Feedback signal #1:	Closed valve
Feedback signal #2:	Open valve
Feedback signal #3:	Seat-lift 1
Feedback signal #4:	Seat-lift 2
Feedback signal #5:	Status
Valve tolerance band options:	5
Default tolerance band:	± 0.2"
Sensor accuracy:	±0.004"
Stroke length:	0.004" - 3.15"

Solenoid valve

Max current consumption:	45mA
Air supply:	40 - 130 PSI
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:	Blue Nylon PA 12
Seals:	Nitrile (NBR) rubber

Environment

Working temperature:	-4 °F to +185 °F
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Main cable gland:	PG11 (0.16" - 0.39")
Max wire size:	AWG 1
Optional cable gland:	PG7 (0.16" - 0.27")



Note!

For further information: See also ESE00355

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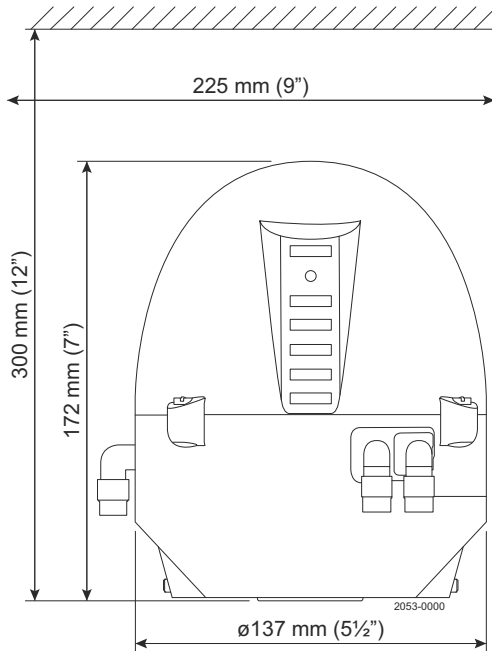
Options

- Solenoid valve configuration
- Pneumatic tubing interface
- When ordering please state if with pigtail

Accessories

- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC valves
- Special indication pin for Unique 7000-LS, Unique 7000 High Pressure valve
- Adaptor for Unique 7000 Small Single Seat valves

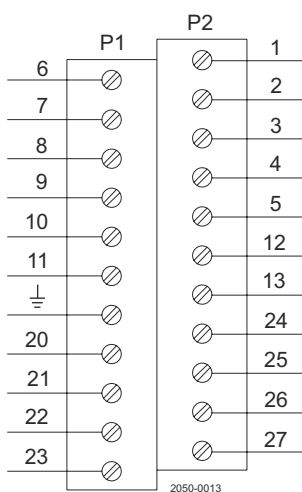
Dimensions (inch)



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	

Electrical connection



6	N/C	1	Power bus V- (Black)
7	N/C	2	CAN_L (Blue)
8	N/C	3	Drain (Bare)
9	N/C	4	CAN_H (White)
10	N/C	5	Power bus V+ (Red)
11	N/C	12	N/C
Earth	Earth	13	N/C
20	Solenoid com (Grey)	24	Seat-lift 1 "upper"
21	Solenoid 1 (Grey)	25	Seat-lift 2 "lower"
22	Solenoid 2 (Grey)	26	Supply +
23	Solenoid 3 (Grey)	27	Supply-

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

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Alfa Laval ThinkTop® Basic Digital

Sensing and control

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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 $\pm 0.1\text{mm}$ 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



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:	± 0.2"
Sensor accuracy:	± 0.004"
Stroke length:	0.004" - 3.15"

Solenoid valve

Max current consumption:	45mA
Air supply:	40 - 130 PSI
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:	-4 °F to + 185 °F
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Main cable gland:	PG11 (0.16" - 0.39")
Max wire size:	AWG 19
Optional cable gland:	PG7 (0.16" - 0.27")

Note!



For further information: See also ESE00225
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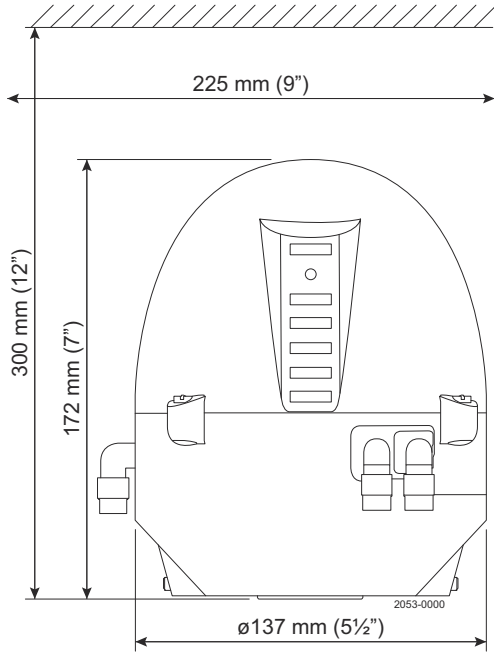
Options

- 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 7000-LS, Unique 7000 High Pressure valves
- Adaptor for Unique SSSV 7000 Small Single Seat valves

Dimensions (inch)



Electrical connection

P1	
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 voltage sensor (+) 10-30 VDC
7	Supply voltage 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)

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Introduction

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Application

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Benefits

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

Standard design

The ThinkTop Basic AS-Interface 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 an AS-Interface v3.0, 62 node. 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 $\pm 0.1\text{mm}$ 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 hygienic valve and has a valve tolerance band with a default tolerance. This eliminates the need to readjust the sensors and boosts productivity.

LEDs conveniently display the main valve position, solenoid activation, setup and local fault indication on the control unit.

Certificates



TECHNICAL DATA

Communication

Interface:	AS-Interface v3.0, 62 node
Supply voltage:	29.5V - 31.6 VDC
Slave profile v3.0:	7.A.7.7
Default slave address:	0

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:	± 0.2"
Sensor accuracy:	± 0.004"
Stroke length:	0.004" - 3.15"

Solenoid valve

Max current consumption:	45mA
Air supply:	40 - 130 PSI
Type of solenoids:	3/2-ways or 5/2-ways
Numbers of solenoids:	0-3
Manual hold override:	Yes
Push-in fittings:	ø6 mm or 1/4"

PHYSICAL DATA

Materials

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

Environment

Working temperature:	-4 °F to + 185 °F
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Main cable gland:	PG11 (0.16" - 0.39")
Max wire size:	AWG 19
Optional main M12 plug:	2 wire (A coded)
Optional cable gland:	PG7 (0.16" - 0.27")

Note!



For further information: See also ESE00356
The ThinkTop has Patented Sensor System, Registered Design
and Registered Trademark owned by Alfa Laval

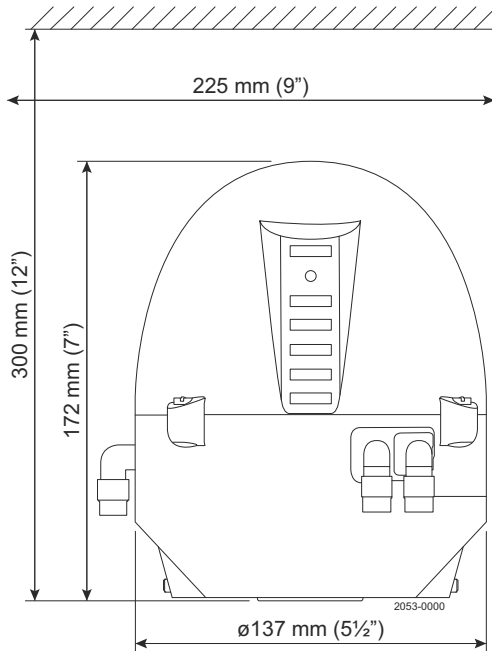
Options

- Communication interface
- Solenoid valve configuration
- Pneumatic tubing interface
- Main cable connection

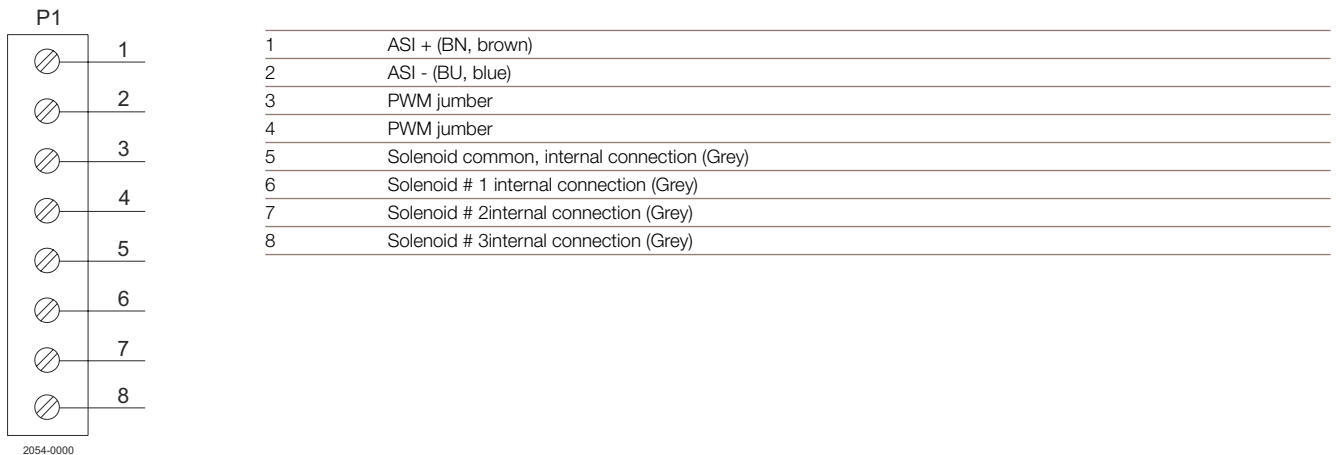
Accessories

- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC and i-SSV valves
- Special indication pin for Unique 7000-LS, Unique 7000 High Pressure valves
- Adaptor for Unique 7000 Small Single Seat valves

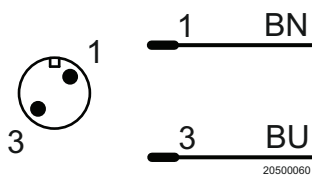
Dimensions (inch)



Electrical connection



M12 plug option



AS-Interface bits assignment

For AS-Interface version with 62 node, the following bit assignment can be used

DI0	Feedback #1 De-Energized valve
DI1	Feedback #2 Energized valve
DI2	Feedback #3 Not connected

DI3	Feedback #4 Status
DO0	Out #1 Not Connected
DO1	Out #2 Solenoid valve 1
DO2	Out #3 Solenoid valve 2
DO3	Out #4 Solenoid valve 3

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Alfa Laval ThinkTop® Basic Intrinsicly Safe

Sensing and control

Introduction

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

Application

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

Benefits

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

Standard design

The ThinkTop Basic Intrinsicly Safe valve sensing and control unit consists of a proven NAMUR feedback sensor system with light-emitting diodes (LEDs), low voltage solenoid valves, ready for connection to a electrical barriers and to any programmable logic controller (PLC) system with a digital interface. It fits on all Alfa Laval hygienic valves; no adaptor is required.

Working principle

By an indication pin mounted on the valve stem, the NAMUR feedback sensors detects valve stem movement, the position of the valve at any given time, with the adjusted accuracy of the feedback sensors.

The Alfa Laval ThinkTop Basic Intrinsicly Safe is fitted with up to two solenoid valves that can convert compressed air and the electrical PLC signal into mechanical energy to activate or deactivate the pneumatic valve actuator.



Each control unit fits most any Alfa Laval hygienic valve and provides an adjustable tolerance band for the main valve to prevent product contamination and failure.

Installation is straightforward. No special expertise or tools are required. To initiate manual setup, simply elevate the NAMUR sensors mechanically by turning the screws located on the sensor bracket.

Certificates



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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 (Internally)
EMC in accordance with:	IEC / EN 60947-5-2:2004; NE 21
Standards:	DINEN60947-5-6 (NAMUR)
Certificate of conformity:	PTB 00 ATEX 2032 X

Solenoid valve

Air supply:	22 - 100 PSI
Type of solenoids:	3/2-ways
Numbers of solenoids:	0-2
Manual hold override:	Yes
Push-in fittings:	ø6 mm or 1/4"
Certificate of conformity:	KEMA 08 ATEX 0093 X

PHYSICAL DATA

Materials

Steel part:	Stainless steel and Brass
Plastic parts:	Black Nylon PA 6 with SS fibers
Seals:	Nitrile (NBR) rubber

Environment

Working temperature:	14 °F to 113 °F
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 (0.16" - ø0.39")
Max wire size:	AWG 19
Optional cable gland:	PG7 (0.16" - 0.27")



Note!

For further information: See also ESE00810

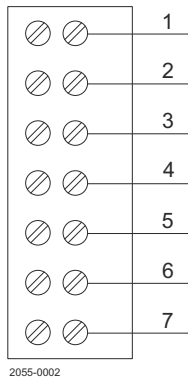
Options

- Solenoid valve configuration
- Pneumatic tubing interface

Accessories

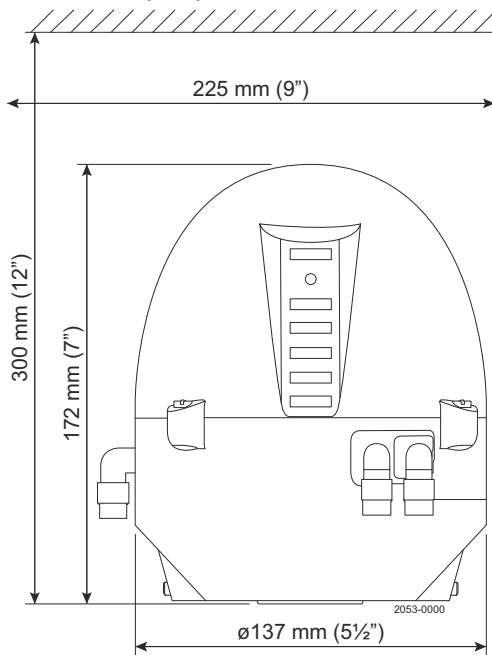
- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC valves
- Adaptor for Unique 7000 Small Single Seat valves

Electrical connection




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

Dimensions (inch)



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

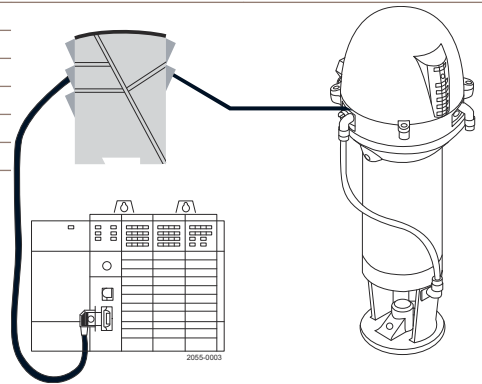
Valve / Actuator type	ATEX evaluation notes
Unique 7000 ATEX	 II 2 G D c T4
Unique Mixproof	Non electric equipment with no own ignition source which can be used within the equipment-group II 2 G/D or II 3 G/D if removing the blue plastic cover from the bottom of the Mixproof valve.
SRC (except SRC-LS) SMP-SC, TO, BC LKLA-T Shutter valve SBV	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

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			Solenoid valve			Safe Area	Hazardous — Zone 1
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:			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:			Electrical barrier	
Max allowed Voltage (U _I)	15	V	Max allowed Voltage (U _I)	28	V		
Max allowed Current (I _I)	50	mA	Max allowed Current (I _I)	225	mA		
Max allowed Power (P _I)	1	W	Max allowed Power (P _I)	1	W		
Max Inductance (L _I)	100	μH	Max Inductance (L _I)	0	μH		
Max Capacitance (C _I)	100	nF	Max Capacitance (C _I)	0	nF		



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