



Close at hand

Automation for Hygienic Fluid Handling Equipment, January 2021



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Everything at your fingertips

Alfa Laval's solutions for hygienic applications are the result of continuous innovation, and our dedicated efforts to meet the challenges faced by industries. With the Alfa Laval online catalogue, detail of our comprehensive product range can now be conveniently at your fingertips at all times.

Whatever you need, and wherever you are, Alfa Laval's components and expertise are always readily available through our network of over 1500 channel partners, supported by our own sales companies around the world.

Alfa Laval has a wide range of tools and resources to make life easier. Our online catalogue is easily accessible and updated regularly. We also offer the possibility to download 2D and 3D drawings. Go to www.alfalaval.com/high.

At www.alfalaval.com/biopharm you can download the comprehensive Q-doc documentation for our UltraPure portfolio.

Our channel partners also have access to a growing pool of resources at the Alfa Laval eBusiness portal, including full documentation, real-time stock availability and the opportunity to order and track shipments online. As well as being kept up to date on the latest developments through the InSight newsletter.

Discover a world of hygienic solutions at our dedicated portals:

www.alfalaval.com/biopharm

www.alfalaval.com/food

Technical Information

Stainless Steel and Rubber Materials

Stainless Steel

Our stainless steel material have the following demands to the contents of the most essential alloys:

Descriptions	Standard	Chrome Cr%	Nickel Ni%	Molybdenum	
				Mo%	Carbon C%
AISI 304	ASTM A270	18.0-20.0	8.0-10.5	0.0	≤ 0.08
AISI 304L	ASTM A270	18.0-20.0	8.0-12.0	0.0	≤ 0.03
AISI 316L	ASTM A270	16.0-18.0	10.0-14.0	2.0-3.0	≤ 0.03
1.4301 (304)	EN 10088-1 (X 5CrNi18-10)	17.0-19.5	8.0-10.5	0.0	≤ 0.07
1.4307 (304L)	EN 10088-1 (X 2CrNi18-9)	17.5-19.5	8.0-10.0	0.0	≤ 0.03
1.4401 (316)	EN 10088-1 (X 5CrNiMo17-12-2)	16.5-18.5	10.0-13.0	2.0-2.5	≤ 0.07
1.4404 (316L)	EN 10088-1 (X 2CrNiMo17-12-2)	16.5-18.5	10.0-13.0	2.0-2.5	≤ 0.03
1.4435 (316L)	EN 10088-1 (X 2CrNiMo18-14-3)	17.0-19.0	12.5-15.0	2.5-3.0	≤ 0.03
1.4571 (316TI)	EN 10088-1 (X6CrNiMoTi17-12-2)	16.5-18.5	10.5-13.5	2.0-2.5	≤ 0.08

Rubber Materials

In order to obtain the longest possible lifetime for rubber seals it is essential to choose the right quality for the actual duty. Consequently when choosing rubber quality, the characteristics of the different rubber types should be considered. All product wetted rubber material are in conformity of FDA.

EPDM Rubber (Ethylene Propylene)

EPDM rubber is widely used within the food industry as it is resistant to most products used in this sector. Another advantage is that it may be used to a recommend max. temperatures of 140°C (244°F). However, there is one essential limitation, EPDM is not resistant to organic and non-organic oils and fats. The resistance to ozone is excellent.

Acrylonitrile Butadiene Rubber, NBR

NBR is the rubber type most frequently used for technical purposes. It is quite resistant to most hydrocarbons, e.g oil, grease and fat. It is sufficiently resistant to diluted lye and nitric acid and may be used to a recommend max. 95°C (203°F). As NBR is attacked by ozone it may not be exposed to ultraviolet rays and should thus consequently be stored so that this is avoided.

Silicone Rubber, Q

The most significant quality of silicone rubber is that it can be applied from temperatures below -50°C (-58°F) to approx. + 180°C (356°F) and still keep its elasticity. The chemical resistance is satisfactory to most products. However, undiluted lye and acids as well as hot water and steam may destroy silicone rubber. The resistance to ozone is good.

Fluorine Rubber, FPM

FPM is often used when other rubber types are unsuited, especially at high temperatures up to approx. 180°C (356°F). The chemical resistance is good to most products, however hot water, steam, lye, acid and alcohol should be avoided. The resistance to ozone is good.

Hydrogenated acrylonitrileButadiene Rubber, HNBR

Mechanically strong and normally resistant to ozone and strong oxidizers, animal and vegetable fats, nonpolar solvents, oils and lubricants, water and aqueous solutions. The recommend max. temperature is 130°C (266°F).

Perfluoroalkoxy polymer, PFA

PFA is very similar to PTFE, but opposite to those PFA is thermo plastic and has minimal porosity. PFA has a very high mechanical strength which makes it a perfect choice when dealing with abrasive products. The PFA seal offers longer service intervals. The recommend max. temperature for the PFA seal is 90°C (194°F).

Product and chemical resistance of flexible rubber materials

The information below is intended as an aid in selecting the best rubber quality for an actual application. It is not possible to state any general lifetime of rubber seals as many factors influence it: chemical attack, temperature, mechanical wear etc. Extreme temperatures, even within the generally accepted limits, may worsen other kinds of attack and thus reduce the lifetime.

Ratings

1 = Unsuitable.

2 = Limited suitability.

3 = Normal suitability.

4 = High suitability.

- = Not recommended for other reasons.

The table contains data which have been compiled from the results of our own tests and the recommendations of our raw material suppliers. The data should be considered as recommendations only and will be brought up-to-date from time to time. They are based on constant contact with the specified product.

In case of doubt or lack of information it would be advisable to consult us directly, which will enable us to investigate specific applications.

Product or process	NBR ¹⁾	HNBR ²⁾	EPDM ³⁾	Q ⁴⁾	FPM ⁵⁾	PTFE ⁶⁾
Dairy products (milk, cream)	3	3-4	3-4	3-4	-	3-4
Dairy products (sour milk products)	3	3-4	3-4	3-4	-	3-4
Brewery products (beer, hops etc.)	3	3-4	3-4	1-2	2-3	3-4
Wine and yeast	3	3-4	4	4	2-3	3-4
Animal and vegetable fats	100°C	3	4	1-2	3	4
Water and water solutions	< 70°C	3	4	4	3	2-4
Hot water and steam	< 130°C	1	4	4	2	-
Concentrated fruit juices and etheral oils	< 100°C	1	-	1	1	3
Non-oxydising acids	< 80°C	1-2	2	3	1-2	2
Oxydising acids	< 80°C	-	2	3	1	2
Weak concentrate of lye	< 100°C	2	3-4	4	2	2
Strong concentrate of lye	< 100°C	1	2-3	3	1	1
Mineral oils	< 110°C	3	4	-	-	4
Aliphatic carburetted hydrogen (hexane)	3	3	1	1	4	3-4
Aromatic carburetted hydrogen (benzole)	1	2	1	1	3	3-4
Alcohols	1-3	2-3	2-3	3-4	3-4	3-4
Ester and ketones	1-2	1-2	1-2	1-2	3-4	3-4
Ether	1	2	1	1-3	3-4	3-4
Methylene chloride	1	2	1	2-3	3-4	3-4
Ozyne and atmospheric conditions	1-2	3	4	4	3-4	3-4

International designation of flexible rubber materials according to ISO R 1629.

ISO = International standard.

Notes

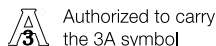
	Designation of flexible rubber materials	Abbreviation symbol
1)	Nitrile rubber	N
2)	Hydrogenated actylonitrile rubber	H
3)	Ethylene propylene rubber	E
4)	Silicone rubber	Q
5)	Fluorinated rubber	F
6)	Polytetraflour ethylene	

Technical Information

Compliance and certification

We can provide documented and certified compliance with a broad spectrum of relevant international and local hygiene standards, worldwide. This helps you Significantly reduce the engineering costs of setting up and operating standards-compliant processing plants around the world.

For special requests please contact your local Alfa Laval organisation



The mission of 3-A SSI is to enhance product safety for consumers of food, beverages, and pharmaceutical products through the development and use of 3-A Sanitary Standards and 3-A Accepted Practices. The 3-A Symbol is a registered mark used to identify equipment that meets 3-A Sanitary Standards for design and fabrication.



ATEX is based on the requirement of the European Directive 94/9/EC (also known as ATEX 95 (100a)), the Equipment Directive. The name ATEX (ATmospheres EXplosible) is commonly given to the framework for controlling explosive atmospheres and the standards of equipment and protective systems used in them



The European Hygienic Engineering & Design Group (EHEDG) is a consortium of equipment manufacturers, food industries, research institutes as well as public health authorities and was founded in 1989 with the aim to promote hygiene during the processing and packing of food products.

EHEDG has authorised the use of the EHEDG Certification logo for Alfa Laval equipment complying with the EHEDG hygienic design criteria. The Certification include cleanability testing of equipment according to the methodology described in EHEDG guidelines.



All valves are delivered with Alfa Laval Q-doc including:

- 3.1 certificate in accordance to EN 10204
- FDA compliance and USP Class VI declaration
- TSE statement
- Surface finish declaration (Ra)
- Manufacturing and quality



CE marking is a mandatory conformity mark for products placed on the market in the European Economic Area (EEA). With the CE marking on a product the manufacturer ensures that the product conforms with the essential requirements of the applicable EC directives. The letters "CE" stand for "Conformité Européenne" ("European Conformity").

1. Automation

The valve sensing and control are designed to provide easy and fully technical solutions in any process area. The requirements for total product flexibility and reliability, together with superior performance, are key functions for success within processing areas.



Sensing and control	1.0
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Hygienic product animations

Get a look inside our products and see how it works. Mouseover the image and click to see animations. - See more at:

<http://www.alfalaval.com/products/fluid-handling/hygienic-product-animations>



- Automation

Alfa Laval ThinkTop® Rethought.

Alfa Laval ThinkTop® Rethought.
Smart and adaptable.

Alfa Laval ThinkTop® Rethought.
Intuitive and fast.

Alfa Laval ThinkTop® Rethought.
Durable and reliable.

ThinkTop® Rethought. Burst Seat
Clean: Less Water, Less Waste

Intuitive, intelligent hygienic valve
control - Alfa Laval ThinkTop® opera-
ting principles

Installation of the ThinkTop D30

Unique Control for LKB Butterfly val-
ves

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1.1 Sensing and control

The valve sensing and control are designed to provide easy and fully technical solutions in any process area. The requirements for total product flexibility and reliability, together with superior performance, are key functions for success within processing areas.

Product presentation

Sensing - product leaflets

IndiTop Digital	1.0.12
Side indication LKB/LKLA	1.0.15

Sensing - ordering leaflets

IndiTop	1.0.17
Side indication LKB/LKLA	1.0.18
Brackets and sensors	1.0.19

Control - product leaflets

ThinkTop V50 and V70	1.0.23
ThinkTop® Digital	1.0.37
ThinkTop® AS-Interface	1.0.40
ThinkTop® DeviceNet	1.0.43
ThinkTop® Basic Digital	1.0.46
ThinkTop® Basic AS-Interface	1.0.49
ThinkTop® Basic Intrinsically Safe	1.0.52
ThinkTop® D30 Digital	1.0.55
8697 Control and Indication unit	1.0.58

Control - ordering leaflets

ThinkTop® V50	1.0.62
ThinkTop® V70	1.0.64
ThinkTop® Digital	1.0.67
ThinkTop® AS-Interface	1.0.68
ThinkTop® DeviceNet™	1.0.70
ThinkTop® Basic Digital	1.0.71
ThinkTop® Basic AS-Interface	1.0.72
ThinkTop® Basic Intrinsically Safe	1.0.74
ThinkTop D30 Digital	1.0.75
Unique DV-ST UltraPure 8697	1.0.76
Accessories	1.0.77

Positioner - ordering leaflets

Unique RV-ST 8692 and 8694	1.0.83
Unique DV-ST UltraPure 8692 and 8694	1.0.84

Alfa Laval IndiTop Digital

Visual indication of main valve position and valve sensing for fluid handling in hygienic applications

Introduction

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

Application

The IndiTop is designed to sense and indicate the fluid handling process in hygienic applications across the dairy, food, beverage, biotechnology, pharmaceutical and many other industries.

Benefits

- Reliable and accurate valve sensing
- Proven and inherently safe design
- Streamlined and compact design
- Watertight design
- Easy to operate

Standard design

The IndiTop valve sensing unit consists of a proven no-touch, set-and-forget sensor system with light-emitting diodes (LEDs) and an encapsulated cable 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 the keypad pushbuttons to startup sequence. Or set up the indication unit without the keypad using the optional remote-control wire function in combination with the PLC system.

Working principle

The Alfa Laval IndiTop is an automated indication unit that does not require the use of any solenoid valve. It transmits the status and condition of the valve position to any PLC system using one of two electrical feedback signals—either DC/AC or PNP/NPN. LEDs display the current main valve position and on/off power status at all times.

The sensor system accurately detects valve stem movement, the position of the valve at any given time, with an accuracy of ± 1 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.



Each indication unit fits all Alfa Laval hygienic valves and provides a tolerance band for valves to prevent product failure.

This indication unit also eliminates the need to readjust the sensors and boosts productivity.

LEDs conveniently display the main valve positions, setup and local fault indication on the indication unit.

Certificates



TECHNICAL DATA

Communication	
Interface:	Digital PNP/NPN
Supply voltage:	8-30 VDC/VAC
Sensor board	
Max current consumption:	45mA
Feedback signal #1:	De-energized valve
Feedback signal #2:	Energized valve
Valve tolerance band options:	1
Default tolerance band:	± 0.2"
Sensor accuracy:	± 0.004"
Stroke length	0.004" - 3.15"

PHYSICAL DATA

Materials	
Steel parts:	Stainless steel and Brass
Plastic parts:	Black Nylon PA 6, SEBS and POM
Environment	
Working temperature:	-4 °F to +185 °F
Protection class:	IP66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P
Cable connection	
16 ft option:	6 wire, dia. 0.2" (AWG26)
33 ft option:	6 wire, dia. 0.2" (AWG26)
1.6 ft with plug option:	M12 plug, incl. M12 socket

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

Options

- Cable configuration

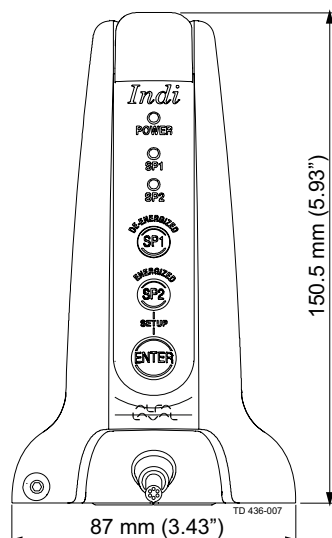
Accessories

- Threaded plate for indication pin on SRC, SMP-BC and i-SSV valves
- Adaptor for Unique SSSV valves

Compatible actuators

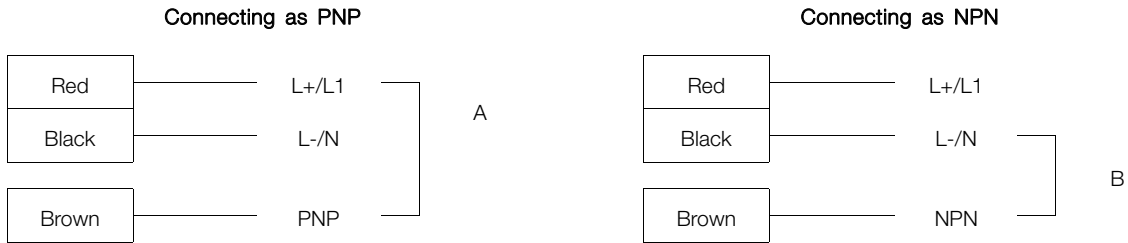
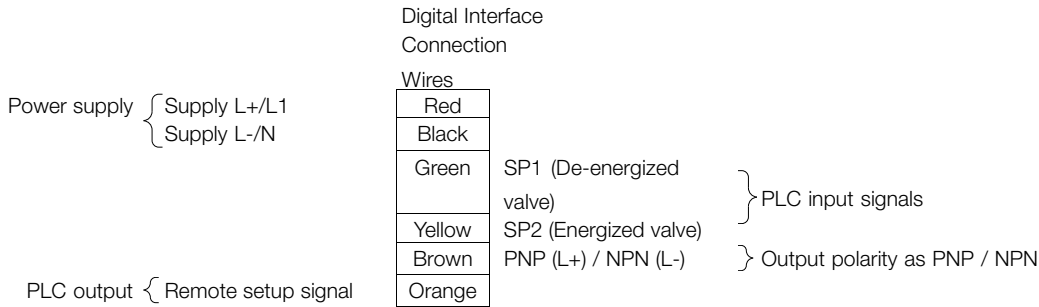
SBV	Yes	Unique 7000	Yes
Koltek	Yes	Unique 7000 aseptic	Yes
LKLA-T	Yes	Unique 7000 long stroke	No
ARC	Yes	SMP valves	Yes
SRC	Yes	Unique Mixproof (U/L seat lift)	No
SRC long stroke	No		

Dimensions (inch)



Electrical connection

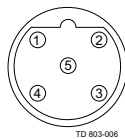
The fixed cable consists of 6 wires. For standard 2 feedbacks not using the remote setup features only 4 wires need to be connected to external systems (Red/Black/Green/Yellow). Brown is always connected to either Red (PNP) or Black (NPN) depending on whether PNP or NPN is required. The orange wire must be connected to Red if the remote setup feature is not used.



- A. Brown connected with Red wire on external screw terminals if PNP polarity
- B. Brown connected with Black wire on external screw terminals if NPN polarity

The fixed cable consists of 6 wires. For standard 2 feedback not using the remote setup feature only 4 wires need to be connected to external systems (Red/Black/Green/Yellow). Brown is always connected to either Red (PNP) or Black (NPN) depending on whether PNP or NPN is required. The orange wire must be connected to Red if the remote setup feature is not used.

Cable wire connections	
Red	L+/L1
Black	L-/N
Green	SP1 (De-energized valve)
Yellow	SP2 (Energized valve)
Brown	PNP (L+) / NPN (L-)
Orange	Remote setup signal
	If not used - connect to L+/L1



M12 plug - PIN connections			
PIN 1	Black	L-/N	
PIN 2	Yellow	SP2 (Energized valve)	
PIN 3	Green	SP1 (De-energized valve)	
PIN 4	Red	L+/L1, 8-30V AC/DC	
M12 Plug		PNP (L+) PIN 4	
Internal wire connections	Brown	NPN (L-) PIN 1	
PIN 5	Orange	Remote setup signal	
		If not used - connect to L+/L1	

Alfa Laval Side indication LKB/LKLA

Inductive-side indication for Alfa Laval butterfly valves used in hygienic applications

Introduction

The Alfa Laval Indication Unit for LKB/LKLA - Inductive is an electrical feedback unit that offers cost-effective operation and standard functionality for automated indication on the inductive side of Alfa Laval butterfly valves. Straightforward and easy to use, this side indication unit provides information about valve operating status 24/7 while boosting productivity.

This inductive-side indication unit is compatible with any programmable logic controller (PLC) with a PNP/NPN interface.

Application

The electrical side indication is designed with inductive sensors for use with Alfa Laval butterfly valves in hygienic applications across the dairy, food, beverage, biotechnology, pharmaceutical and many other industries.

Benefits

- Durable and cost-effective
- Precision operation
- Long service life
- Easy to operate

Standard design

The Indication Unit for LKB/LKLA – Inductive consists of steel and plastic components, seals, contact pins, and cable connection with socket, screw and cable gland. Easy to mount, this side indication unit does not require any mechanical adjustments and must be installed between the air-operated actuator and the valve.

Working principle

The Alfa Laval Indication Unit for LKB/LKLA – Inductive sensor is an inductive proximity switch that has non-contact electronic switching elements. It is activated by an electromagnet device known as a roller leaf. The standard output signal is always a digital signal (on/off) indicating the position of the valve. .

Certificates



TECHNICAL DATA

Communication

Electrical design:	DC PNP
Operating voltage:	10...36 V DC
Output function:	2 x NO
Current consumption:	<15 mA
Current rating:	250 mA
Electrical connection:	M12 plug

PHYSICAL DATA

Materials

Steel parts:	Stainless steel
Plastic parts:	PBT; PC (polycarbonate)
Contact pins:	Gold-plated

Environment

Working temperature:	-13 °F to +176 °F
Protection rating	IP 67

Note!

Compatible brackets are available for the actuators and handles for LKB butterfly valves.

The M12 counterpart (Socket) connector are not a part of the indication unit package. The wiring and pinout on the M12 plug has changed, compared to the previous side indication units for LKB/LKLA.

For further information: See also ESE001257

Options

- Valve compatibility

Accessories

- Various cable options

Compatible actuators

LKLA ø85	Yes
LKLA ø133	Yes

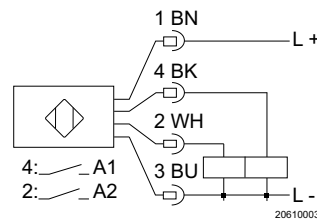
Compatible Valves

LKB	Yes
LKB-2	Yes

Electrical connection

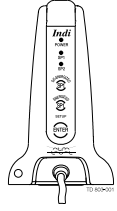
Standard M12 Connection

Pin	Setup
1	Supply +
4	Closed: OUT + 1 (A1)
2	Open: OUT + 2 (A2)
3	Supply -





Top Unit
Product code: 5409

Valves: Unique 7000 Series (Except Unique 7000 LS, Except: Unique Mixproof U/L seat lift), Unique 7000 Aseptic, Unique Mixproof, SMP-SC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Specification	Size		IndiTop
			DN/OD	DN	
9613418101		8 - 30 VDC/AC, 16.40 ft. cable Load: Max.: 50 mA 2 Position Feedback Type: PNP/NPN	1-4"	25-150	
9613418102		8 - 30 VDC/AC, 32.80 ft. cable Load: Max.: 50 mA 2 Position Feedback Type: PNP/NPN	1-4"	25-150	
9613418103		8 - 30 VDC/AC, 1.64 ft. w/M12 plug, incl. plug counterpart Load: Max.: 50 mA 2 Position Feedback Type NPN	1-4"	25-150	
9613418104		8 - 30 VDC/AC, 1.64 ft. w/M12 plug, incl. plug counterpart Load: Max.: 50 mA 2 Position Feedback Type PNP	1-4"	25-150	

Side indication LKB/LKLA

Indication units for LKB/LKLA \varnothing 3.35 in./Handle 1.1
 Indication units for LKB/LKLA \varnothing 5.24 in.
 Product code: 5415

Item No.	LLP USD	Specification	Size		
		Inductive Side indication	LKB for DN/OD	LKB-2 for DN	
					24 VDC Digital interface
9611995750		Indication unit w/M12 plug for LKB/LKLA \varnothing 85	1"-4"	25 - 100 125 - 150	
					24 VDC Digital interface
9611995748		Indication unit w/M12 plug for LKB/LKLA \varnothing 133	4"	100 - 150	

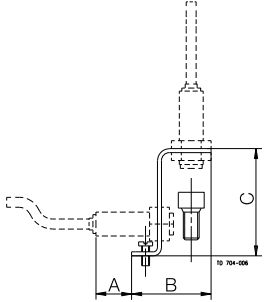
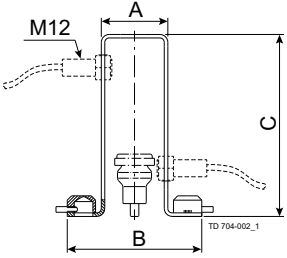
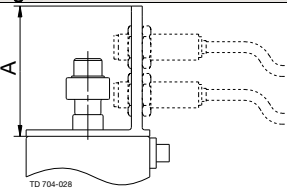
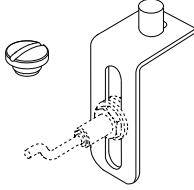
Note!

The M12 counterpart (socket) connector are not a part of the indication unit package

The wiring and pinout on the M12 plug has changed, compared to the previous inductive side indication units for LKB/LKLA.

The indication unit for LKB/LKLA \varnothing 85 used for mounting brackets with handle 1.1 for indication unit 25-101.6/DN25-100

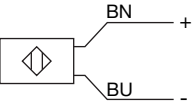
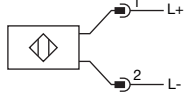
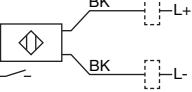
Indication Units
Product code: 5414

Item No.	LLP USD	Specification	Valve type/size	Dimension (in)			
9612498901		Without M12 sensor		0.59	0.98	2.13	
9612411202 9612411203		Without M12 sensor Without M12 sensor	7000-LS 3"-4"/DN80-DN100 7000-Y 3"-4" 7000 with high pressure actuator 3"-4"/DN80-100	1.85 1.85	3.74 3.74	5.06 6.4	
Bracket system for Unique 7000 Small Single Seat Valve size 0.5-0.75 in							
9612947703		Without M12 sensor		2.36			
Bracket system for external sensor on Unique Mixproof							
9613095503		Without M12 sensor	Unique Mixproof 1½"-4" DN 40-150 Sch. 5 2"-6" Replacement screw 9615331901 for spindle coupling				

Suitable sensors are found in the ordering leaflets - Inductive sensors

Indication Units

For: Unique 7000, Unique 7000-LS, Unique 7000 Aseptic,
SMP-BC, SMP-BCA, LKLA-T (LKB), Shutter valve, SBV,
Unique and 7000 Small Single Seat Valve
Product code: 5414

Item No	LLP USD	Supply	Interface	Connection	Operation	Type	Bracket systems	Wiring
Inductive sensor (M12)								
9611995195		8 VDC NAMUR	NC, Connection to safe circuit (Zener barrier)	78.74 in cable	2 wire	NF5003 ATEX, Ex protection II 1G/1D Ex ia IIC T6	See Note 1	
Inductive sensor (M12)								
9611995196		8 VDC NAMUR	NC, Connection to safe circuit (Zener barrier)	M12 plug	2 wire	NF501A ATEX, Ex protection II 2G/1D Ex ia IIC T6	See Note 1	
Inductive sensor (M12)								
9611992900		10-36 VDC	NO, PNP/NPN	78.74 in cable	2 wire	IF5718	See Note 1	

Suitable brackets are found in the ordering leaflets - Brackets

Connections cable with M8 and M12 socket are found in the ordering leaflets - Accessories

Indication Units

For: Unique 7000, Unique 7000-LS, Unique 7000 Aseptic, SMP-BC, SMP-BCA, LKLA-T (LKB), Shutter valve, SBV, Unique and 7000 Small Single Seat Valve
Product code: 5414

Item No	LLP USD	Supply	Interface	Connection	Operation	Type	Bracket systems	Wiring
Inductive sensor M12 (Mixproof valve - Upper seat-lift)								
9611995199		10-30 VDC	NO, PNP	M12 plug	3 wire	IFT216 For all Mixproof valves Balanced or Unbalanced valves Bracket or Yoke mounted	See Note 3	
Inductive sensor M12								
9611995200		10-36VDC	NO, PNP	M12 plug	3 wire	IFT203	See Note 1	
Inductive sensor (M18)								
9611995201		10-36 VDC	NO, PNP	M12 plug	3 wire	IGT203	See Note 2	
Inductive sensor (M12)								
9611995202		AS-Interface	AS-I 2.1, 62 node	M12 plug	2 wire	IFC247	See Note 1	
Inductive sensor M5								
9611995650		10-36VDC	NO, PNP	M8 plug	3 wire	IY5036	See Note 4	
Inductive sensor M5								
9611995651		10-36VDC	NO, PNP	78.74 in cable	3 wire	IY5046	See Note 4	

Suitable brackets are found in the ordering leaflets - Brackets

Connections cable with M8 and M12 socket are found in the ordering leaflets - Accessories

Inductive sensor which is compatible with the following bracket systems:

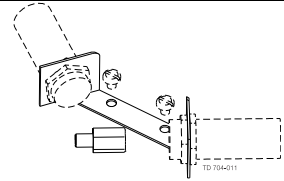
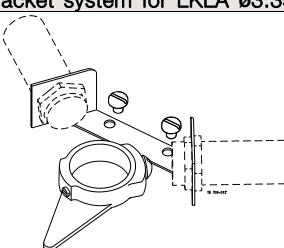
Note 1: 9612552901 LKLA ø5.24
 9611417764 LKLA ø85
 9611417767 LKLA ø85
 9612498901 LKAP
 9612411202 Unique 7000, SRC, ARC, SMP-SC, SMP-BC, SMP-BCA, LKLA-T(LKB), Koltek, SBV, Unique Mixproof
 9612947703 Unique 7000 Small Single Seat Valve

Note 2: 9612552902 LKLA ø5.24
 9611417765 LKLA ø85
 9611417768 LKLA ø85

Note 3: **Applies for Unique Mixproof valves:**
 9613095503 9613-0955-03 M12 seat lift sensor bracket (except CP3 and 3-Body)
 9611996064 Cable gland M12 for seat lift sensor cable on ThinkTop V70
 9615397501 Grey seat lift sensor cable, 1 meter for all Unique Mixproof valves
 9614257508 Sensor (bushing) adapter - Needed when yoke mount of seat lift sensor
 9615331901 Replacement screw for spindle coupling (except CP3)

Note 4: **Applies for Unique Sample valve**
 Jumper cable M8 socket to M12 plug are applied on M5 sensor IY5036
 9614017401 Adapter for M5 sensor IY5036 and IY5046 (Open valve position only) - Size 4 and 10
 9614257901 Adapter for M5 sensor IY5036 and IY5046 (Open valve position only) - Size 25

Indication Units
 For LKLA (LKB) $\varnothing 3.35/\varnothing 5.24$
 Product code: 5414

Item No.	LLP USD	Size		Specification	
		LKB for DN/OD	LKB-2 for DN		
Bracket system for LKLA $\varnothing 5.24$					
9612552901		4"	100-150	$\varnothing 0.47$ in	
9612552902		4"	100-150	$\varnothing 0.71$ in	
** NOTE! Sold before 890601 - LKB 4": $\square = 0.39$ in.					
Bracket system for LKLA $\varnothing 3.35$					
9611417764		1-4"	25-100	$\varnothing 0.47$ in	
9611417767		1-4"	125-150	$\varnothing 0.47$ in	
9611417765			25-100	$\varnothing 0.71$ in	
9611417768			125-150	$\varnothing 0.71$ in	

Suitable sensors are found in the ordering leaflets - Inductive sensors
 Please see mounting brackets for actuators, handles and LKB valves.
 Please see mounting brackets for other valves.

Alfa Laval ThinkTop V50 and V70

Control

Introduction

ThinkTop V50 and V70 takes valve control to a new level and all these new features are available on any Alfa Laval diaphragm, butterfly, single-seat and mixproof valves. While helping to increase production performance and secure traceability, ThinkTop V50 and V70 provide real-time information on the valve's operating status 24/7.

Both ThinkTop V50 and V70 are interchangeable with prior ThinkTop versions, and the appropriate variant is selected based on the number of solenoid valves. With only one sensor target and included adapter, ThinkTop V50 and V70 are easily retrofittable to existing Alfa Laval valves.

ThinkTop V50 and V70 come fitted with features such as Auto Setup, Live Setup and Flex Setup that streamline the setup process, making it quick and easy. Auto Setup and Live Setup recognise the valve based on its DNA profile and can complete the valve setup without any manual interaction.

The burst seat clean function is available on ThinkTop V70. This function controls the optimum seat pulse sequence of the valve, making it possible to achieve up to 90% CIP liquid savings for each seat lift.

Application

ThinkTop V50 and V70 are designed for use in the dairy, food, beverage, and biopharma industries.

Benefits

- Auto setup
- Automatic valve recognition
- Automatic selection of tolerance band
- Fast, Live and Flex Setup
- 360-degree LED indication
- Burst seat clean
- Exchangeable (threaded) air-fittings
- Interchangeable with ThinkTop classics

Working principles

The control unit offers a single sensor solution for diaphragm, butterfly, single-seat and mixproof valves and it can be fitted with up to three solenoid valves. ThinkTop converts the electrical PLC output signals into mechanical energy to energise, or de-energise, the air-operated valve, using the physical sensor target mounted on the valve stem.



Installation with Auto Setup or Live Setup is intuitive and fast. To initiate Auto Setup, simply press the "SELECT" button and then the "ENTER" button to begin the setup sequence. The ThinkTop automatically recognizes the type of valve and completes the programming sequence fast and efficiently. Alternatively, the ThinkTop can be set up, without dismantling the control head, using the built-in Live Setup feature for remote-configuration.

Certificates



Dimensions (mm)

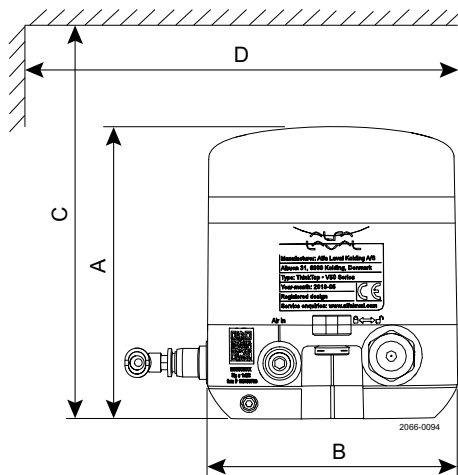


Figure1. ThinkTop V 50

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

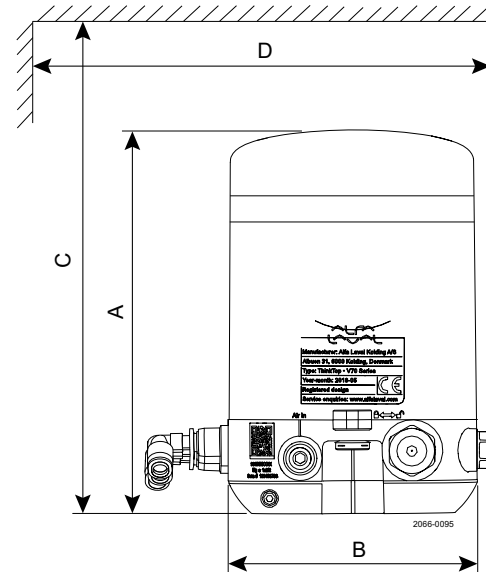


Figure2. ThinkTop V 70

	mm	Inch
A	164	6.45
B	105	4.13
C	250	9.84
D	170	6.69

TECHNICAL DATA

Material	
Plastic parts	Nylon PA 12
Steel parts	1.4301 / 304
Air fittings	Nickel plated / Nylon PA6
Gaskets	Nitril / NBR
Environment	
Working temperature	-10°C to +60°C
Protection class (IP)	IP66, IP67 and IP69K
Protection class (NEMA)	4, 4X and 6P
Hazardous area	ATEX and IECEx in preparation
Control board	
Communication	See interfaces section
Sensor accuracy	± 0,1 mm
V50 – Valve stem length	Below < 65 mm
V70 – Valve stem length	Above > 65 mm
Mean Time To Failure (MTTF)	224 years
Approvals	UL/CSA Certificate: E174191

Solenoid valve

Supply voltage	24 VDC \pm 10%
Nominal power	0,3 W
Air supply	300-800 kPa (3-8 bar)
Type of solenoids	3/2-ways or 5/2-way
Number of solenoids	0-3
Manual hold override	Yes
Air quality	Class 3,3,3 acc. DIN ISO 8573-1
B10 data	5 Million cycles
Recommendation	Operate once a month to prevent dry-out

Note: Throughout this leaflet, SV is used as an abbreviation for a solenoid valve

Air fitting

Throttle function air inlet/outlet	0-100%
Threaded air fitting G1/8	6 mm (Rim blue) or 1/4" (Rim Grey)
Elbow push-in fittings	6 mm (Rim blue) or 1/4" (Rim Grey)

Cable connection

Main cable gland entry Digital	M16 (\varnothing 4 - \varnothing 10 mm) (0,16" - 0,39")
Main cable gland entry AS-I	M16 (\varnothing 2 - \varnothing 7 mm) (0,08" - 0,28")
Seat lift sensor cable gland entry	M12 (\varnothing 3,5 - \varnothing 7 mm) (0,14" - 0,28")
Max wire diameter	0.75 mm2 (AWG20)

Vibration

Vibration	18 Hz-1kHz @ 7,54g RMS
Shock	100g

Humidity

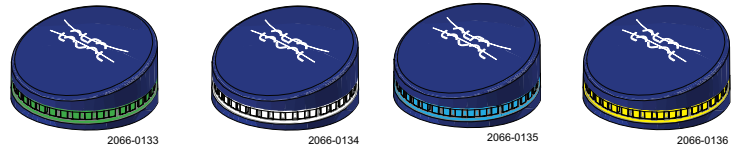
Constant humidity	+40°C, 21 days, 93% R.H.
Cyclic humidity (working)	-25°C/+55°C, 12 cycles 93% R.H.

Accessories by functionality

Upper seat lift surveillance	Kit
Valve speed reduction	0-100%
Valve closing speed increase	Quick air exhaust, \varnothing 6 mm
Solenoid valve protection	Supply air filter 1/8", avoid clogging of solenoid valves

OPERATIONAL DATA**LED indication**

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

**Valve position**

Actuator	All	Main valve open	Upper seat lift	Lower seat push	Between	
	De-energised	Energised	Energised	Energised		
ThinkTop Mode	Factory setting	Green flashing	White flashing	Blue flashing	Yellow flashing	Off
	Operation	Green	White	Blue	Yellow	Off
	Not OK	Green/red flashing	White/red flashing	Blue/red flashing	Yellow/red flashing	Red flashing

Auto setup

Auto Setup is a rule-based function. If one of these rules are not present, Flex Setup must be used.

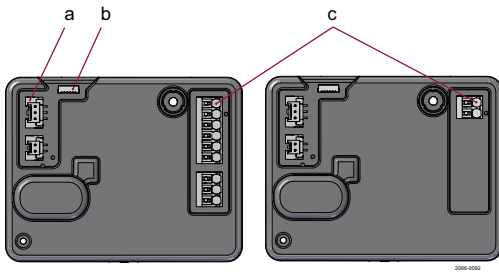
By default, ThinkTop V50 and V70 uses the de-Energised/Energised paradigm for valve positions feedback.

Parameter	Auto Setup/Live Setup	Flex Setup (retrofit mode)
Status feedback (OK or error)	Valve state (Fail safe signal)	Status error
Seat cleaning function	Enabled	Disabled
Valve operation monitor	Enabled	Disabled
Ext. sensor operation monitor	Enabled	Disabled
Interlock	Enabled	Disabled
Output (AS-i master input)	Special	Special
External sensor masking	Enabled	Disabled

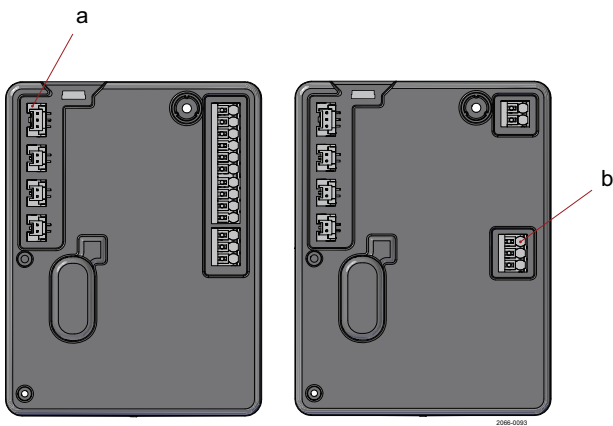
Valve compatibility chart

	Common applications (Auto / Live Setup)	Special applications (Flex Setup)	Incompatible valves
ThinkTop V50	Single Seat valves Small Single Seat valve Butterfly valves Diaphragm valves Ball valves Shutter valves Double seat valves Double seal valve	<ul style="list-style-type: none"> ThinkTop classic retrofit mode or alternative setup with no restrictions Feedback structure such as the open/closed valve feedback All SSV (1/2" - 4") NO, shut off, maintainable, need to be setup as a rotary valve Application with no solenoid valve, feedback indication only One control unit to control multiple valves SMP-BC where using 2 solenoid valve to operate main valve and pilot leak-detect valves independently 	<ul style="list-style-type: none"> Valves without raising stem and mushrooms Regulating valves Safety valves Sample valves SMP-EC 700 series Other valve brands
	In addition to the ThinkTop V50 valves Double seat valves Double seal valve Long stroke single seat valves DV-ST DN65, 2½", DN80, 3", DN100, 4" Air/Air valves		

3.9.3 Overview of connectors and ports



- a: Solenoid valve connector
- b: Indication lamp
- c: Main terminals



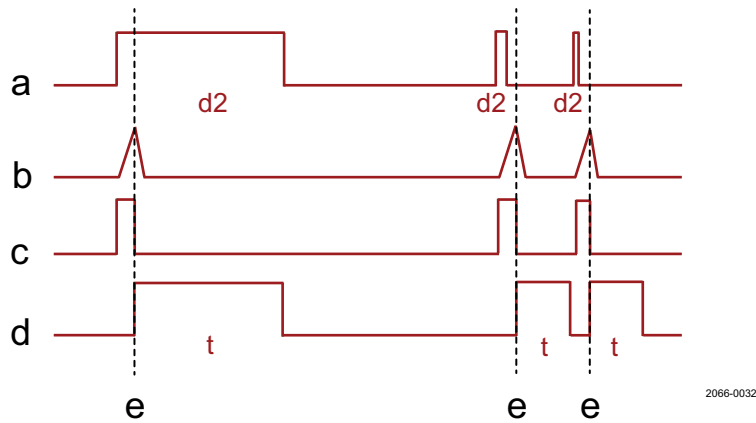
- a: Diagnostic Port
- b: Seat lift sensor terminal

Burst clean mode

Burst seat clean mode is available for ThinkTop V70 and can be enabled when a ThinkTop V70 with 2 or 3 solenoid valves is setup successfully using Auto Setup.

The burst seat clean mode is enabled or disabled via the ThinkTop V70 control board. Press "SELECT" (4 times) until LED no 4 flashes, and then press 'ENTER" to enable or disable. This option is also available as an adjustable IO-Link parameter.

The burst seat clean option is from factory disabled by default. However, if it is enabled and there is a manual reset to factory default, the burst seat clean option is disabled.



a: Input (from PLC)

b: Position

c: Solenoid valve output

d: Output minimum 2 sec. (both visual and electrical)

e: Position reached

When the PLC input signal for either upper or lower seat push (Usl, Lsp) goes high, the respective solenoid valve is Energised.

As soon as the sensor target reaches the predefined energised valve position, the solenoid valve is automatically de-energised by the ThinkTop V70.

A two-second electrical and visual feedback (t) is provided as a handshake for successful completion of a burst seat pulse. The PLC input duration must be at least 500 ms (d).

If ThinkTop V70 is set up using Auto Setup without the upper seat lift sensor, the function uses the stored setup stroke time for "Lower seat push" plus some extra time for when the solenoid valve is deactivated.

Water consumption graph

ThinkTop V70 CIP liquid consumption during Burst seat clean on different Mixproof valves, provided with 6 bar air pressure:

Figure 3. Unique Mixproof valve / Unique CP-3 Mixproof valve 1.5" DN 40 and 2" DN50

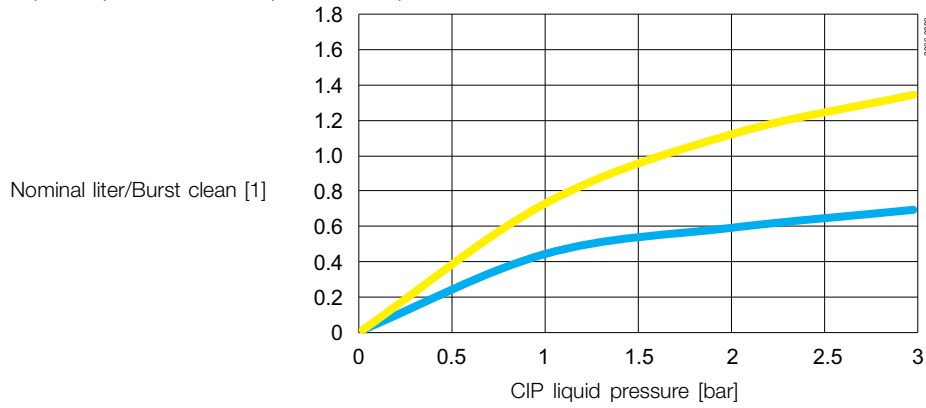


Figure 4. Unique Mixproof valve / Unique CP-3 Mixproof valve 2.5" DN65 and 3" DN80

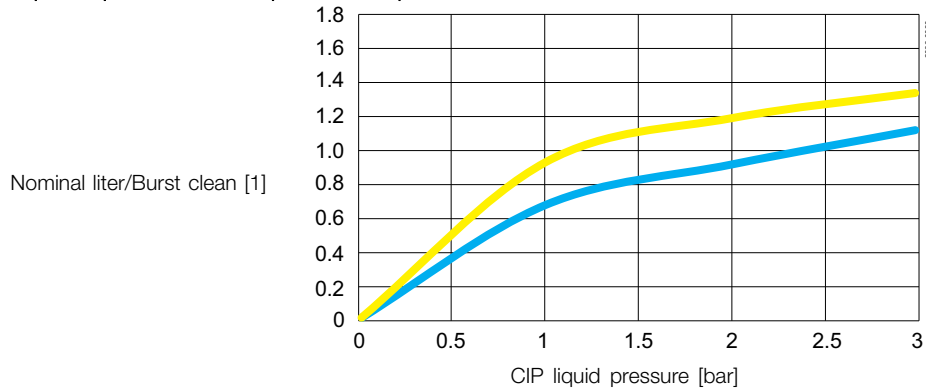
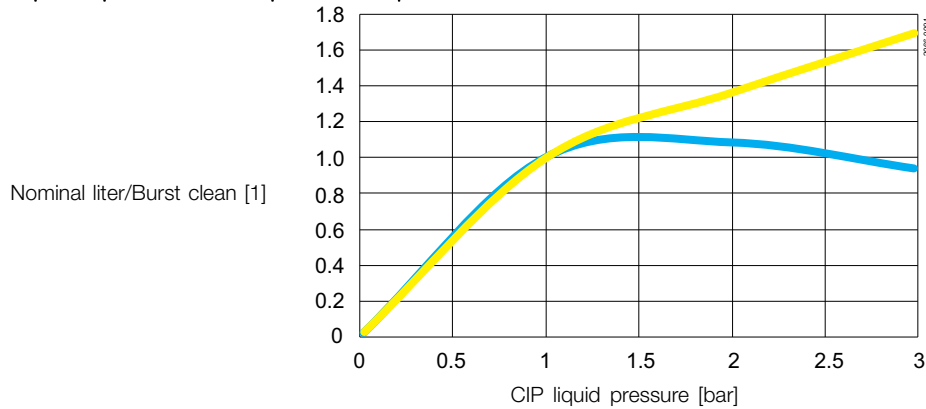


Figure 5. Unique Mixproof valve / Unique CP-3 Mixproof valve 4" DN100



— Lower Seat Push
— Upper Seat Lift

Valve state – Fail safe signal

The following table gives an overview of behaviour per Error condition where the valve state signal goes low. Further description of the various Error conditions can be found in the ThinkTop Instruction Manual, section 5,2.

Valve state is a decentralized functionality, available for all ThinkTop variants and a feature that can be used for monitoring process issues or to ease and simplify the PLC programming of a valve surveillance.

Error Code #	Error description	ThinkTop Digital	ThinkTop AS-Interface	ThinkTop IO-Link
		Valve state FAIL SAFE SIGNAL behaviour	Not Available DE-ENERGIZED SIGNAL behaviour	Valve state FAIL SAFE SIGNAL behaviour
15	Key lock active	na	na	na
16	Sensor target missing	Drops low	Drops low	Drops low
17	Setup missing peripherals	na	na	na
18	Pneumatic part issue	na	na	na
19	Seat lift sensor issue	Drops low	Drops low	Drops low
20	Position not reached	Drops low	Drops low	Drops low
21	Unexpected valve movement	Drops low	Drops low	Drops low
22	Seat-lift sensor missing	Drops low	Drops low	Drops low
23	Solenoid valve 1 missing	Drops low	No effect	Drops low
24	Solenoid valve 2 missing	Drops low	No effect	Drops low
25	Solenoid valve 3 missing	Drops low	No effect	Drops low
26	Interlock warning	Drops low	No effect	Drops low
27	Hardware fault	Drops low	No effect	Drops low
28	Setup aborted	na	na	na
29	Blocked button	Drops low	No effect	Drops low
30	Voltage Low	Drops low	No effect	Drops low
31	Safety stop	Drops low	Drops low	Drops low

Default bitmapping

The default settings apply to both Digital, AS-Interface and IO-Link

ThinkTop V50 truth signal table: default factory setting

	DE-EN (I0) close	MAIN (I1) open	Valve state (Fail safe signal)
DE-EN (No active SV)	1	0	1
MAIN SV1 active (O1)	0	1	1

ThinkTop V70 truth signal table: default factory setting

	DE-EN (I0) all closed	MAIN (I1) open	USL (I2) open	LSP (I3) open	Valve state (Fail safe signal)
DE-EN (No active SV)					
Both seats closed					
Lower seat in closed position	1	0	0	0	1
Upper seat in closed position					
MAIN SV1 active (O1)					
Lower seat in open valve position	0	1	0	0	1
Upper seat not closed					
USL SV2 active (O2)					
Upper seat not close	0	0	1	0	1
Lower seat in closed position					
LSP SV3 active (O3)					
Lower seat in seat push position	0	0	0	1	1
Upper seat in closed position					

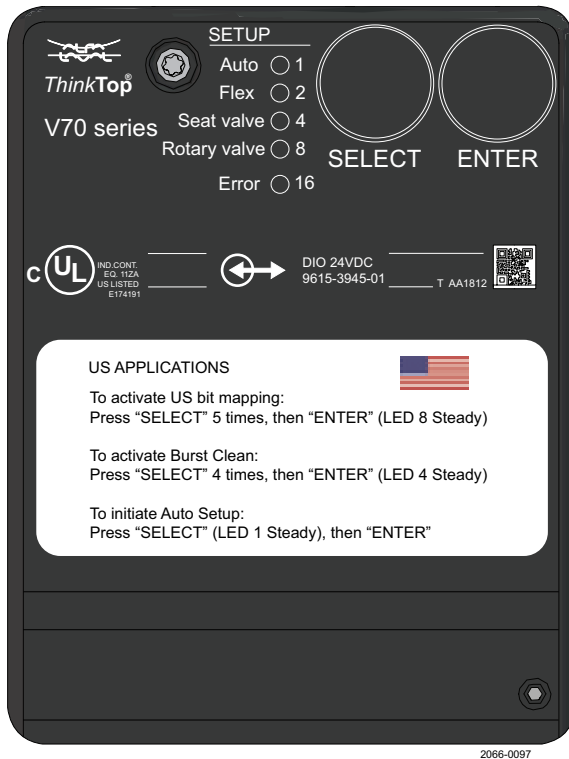
U.S.A. compliance option

Applies to both Digital Interface and AS-Interface, and ThinkTop V70 variants only. The U.S.A. compliance option refers to a bitmapping interface used in the USA on Mixproof valves, fitted with 3 solenoid valves. This U.S.A. bitmapping can be enabled after or before auto setup.

U.S. regulations require independent closed position feedback signals for upper seat lift and lower seat push in a Mixproof valve application.

The U.S.A. bitmapping are enabled or disabled on the ThinkTop V70 control board. Press "SELECT" (5 times) until LED no 8 flashes, and then press "ENTER" to enable or disable. This option is also available as an adjustable IO-Link parameter.

The U.S.A. compliance option is from factory disabled by default. However, if it is enabled and there is a manual reset to factory default, the U.S.A. compliance option remains enabled.

**U.S.A. bitmapping**

The information in the table is based on the following setup:

- ThinkTop V70 with 3 solenoid valves
- IFT series seat lift sensor of the type NO or NC
- Mixproof valve with both seats installed (balanced or unbalanced upper plug)
- Any combination of above valve type and sensor type

	DE-EN (I0)	MAIN (I1)	USL (I2)	LSP (I3)	Valve state (Fail safe signal)
	Both closed	open	closed	closed	
DE-EN (No active SV)					
Both seats closed	1	0	1	1	1
Lower seat in closed position					
Upper seat in closed position					
MAIN SV1 active (O1)					
Lower seat in open valve position	0	1	0	0	1
Upper seat not closed					
USL SV2 active (O2)					
Upper seat not closed	0	0	0	1	1
Lower seat in closed position					
LSP SV3 active (O3)					
Lower seat in seat push position	0	0	1	0	1
Upper seat in closed position					

Digital interface

ThinkTop Digital 24V DC

Device name	ThinkTop V50 24V Digital ThinkTop V70 24V Digital
Voltage supply	<ul style="list-style-type: none"> 24 VDC \pm 10%; according to EN 61131-2
Protection	<ul style="list-style-type: none"> Reverse polarity (24 VDC \pm 10%); EN 61131-2 Voltage interruption and brown-out; EN61131 Short circuit; EN 61131
Current consumption	<ul style="list-style-type: none"> Nominal 30mA (Idle)
Outputs to PLC	<ul style="list-style-type: none"> Max 100mA (solenoid valve and seat lift sensor active)
PLC input card	<ul style="list-style-type: none"> Max rated 24V/100A
UL supply	<ul style="list-style-type: none"> Class 2 according to cULus
Voltage drop	<ul style="list-style-type: none"> Typical 3V at 50 mA
Terminal type	<ul style="list-style-type: none"> 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

ThinkTop V50

Terminals	Control board	Colour code wires
1	24V	BN (brown)
2	GND	BU (blue)
3	out: Valve state	WH (white)
4	out: DE-EN	BK (black)
5	out: EN. Main valve	GY (grey)
6	in: SV1. Main valve	PK (pink)


ThinkTop V70

Terminals	Control board	Colour code wires
1	24V	BN (brown)
2	GND	BU (blue)
3	out: Valve state	WH (white)
4	out: DE-EN	BK (black)
5	out: EN. Main valve	GY (grey)
6	out: USL. Upper seat lift	PK (pink)
7	out: LSP. Lower seat push	VT (violet)
8	in SV1. Main valve	YE (yellow)
9	in SV2. Upper seat lift	GN (green)
10	in SV3. Lower seat push	RD (red)
Seat lift sensor		
E1	L+	BN (brown)
E2	GND	BU (blue)
E3	Signal	BK and WH (black and white)

ThinkTop V50

M12 option (8-pin A-coded plug)


Pin numbers and terminal numbers are aligned

M12 Chassis plug connector	Control board Terminal numbers	M12 pin numbers wire colors
	1: 24V	Pin 1: BN (brown)
	2: GND	Pin 3: BU (blue)
	3: out: Valve state	Pin 2: WH (white)
	4: out: DE-EN	Pin 4: BK (black)
	5: out: EN. Main valve	Pin 5: GY (grey)
	6: in SV1. Main valve	Pin 6: PK (pink)
	7: nc	-
	8: nc	-

ThinkTop V70

M12 option (12-pin A-coded plug)

Pin numbers and terminal numbers are aligned

M12 Chassis plug connector	Control board Terminal numbers	M12 pin numbers wire colors
	1: 24V	Pin 1: BN (brown)
	2: GND	Pin 3: BU (blue)
	3: out: Valve state	Pin 2: WH (white)
	4: out: DE-EN	Pin 4: BK (black)
	5: out: EN. Main valve	Pin 5: GY (grey)
	6: out: USL Upper seat lift	Pin 6: PK (pink)
	7: out: LSP Lower seat push	Pin 7: VT (violet)
	8: in SV1. Main valve	Pin 8: YE (yellow)
	9: in SV2. Upper seat lift	Pin 9: GN (green)
	10: in SV3. Lower seat push	Pin 10: RD (red)
	11: nc	-
	12: nc	-

AS-Interface

ThinkTop AS-Interface

Device name	ThinkTop V50 ASI2 & ThinkTop V50 ASI3 ThinkTop V70 ASI2 & ThinkTop V70 ASI3
Supply voltage	<ul style="list-style-type: none"> AS-Interface 29.5 – 31.6 VDC
Protection	<ul style="list-style-type: none"> Reverse polarity (24 VDC \pm 10%); EN 61131-2 Voltage interruption and brown-out; EN 61131 Short circuit; EN 61131
Current consumption	<ul style="list-style-type: none"> Nominal: 30 mA (idle) Max 100 mA (solenoid valve and seat lift sensor active)
Terminal type	<ul style="list-style-type: none"> 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
AS-I specification v2.11	<ul style="list-style-type: none"> Supports standard addressing and are compatible with M0-M4 AS-I master profiles, allows up to 31 nodes on an AS-I network Slave profile = 7FFF
AS-I specification v3.0	<ul style="list-style-type: none"> Supports extended A/B addressing and is compatible with M4 AS-I master profile, allows up to 62 nodes on an AS-I network Slave profile = 7A77
AS-I addressing	<ul style="list-style-type: none"> Default slave address (Node) is = 0 Address (Node) changes with a standard handheld AS-I addressing device or via AS-I Master Gateway



AS-Interface bit table

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

PLC system / Gateway Output table	ThinkTop V50	ThinkTop V70
Toggle Burst clean	nc	O0
SV1. Main valve	O1	O1
SV2. Upper seat lift	nc	O2
SV3. Lower seat push	nc	O3

PLC system / Gateway Input table	ThinkTop V50	ThinkTop V70
DE-EN	I0	I0
EN. Main valve	I1	I1
Upper seat lift	nc	I2
Lower seat push	nc	I3

Electrical connections

ThinkTop V50

Terminal	Control board	Colour code wires
1	AS-i +	BN (brown)
2	AS-i -	BU (blue)


ThinkTop V70

Terminal	Control board	Colour code wires
1	AS-i +	BN (brown)
2	AS-i -	BU (blue)
Seat lift sensor		
E1	L+	BN (brown)
E2	GND	BU (blue)
E3	Signal	BK (black) and WH (white)

ThinkTop V50 and ThinkTop V70

M12 option (4-pin A-coded plug)

Pin numbers and terminal numbers are aligned

M12 Chassis plug connector	Control board Terminal numbers Functions	M12 pin assignments wire colours
	1: AS-i +	Pin 1: BN (brown)
	2: nc	-
	3: AS-i -	Pin 3: BU (blue)
	4: nc	-

IO-Link interface**ThinkTop IO-Link**

In addition to process indication and control, the IO-Link variant enables diagnostic information and features additional functionality that is unique to ThinkTop

Device name	ThinkTop V50 IOL ThinkTop V70 IOL
IO-Link supply voltage	<ul style="list-style-type: none"> 24 VDC \pm 10%; according to EN 61131-2
Protection	<ul style="list-style-type: none"> Reverse polarity (24 VDC \pm 10%); EN 61131-2 Voltage interruption and brown-out; EN61131 Short circuit; EN 61131
Current consumption	<ul style="list-style-type: none"> Nominal: 30 mA (idle) Max 100 mA (solenoid valve and seat lift sensor active)
Terminal type	<ul style="list-style-type: none"> 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
Download of IO-Link files	<ul style="list-style-type: none"> Alfa Laval Anytime and ThinkTop configurator Go to www.alfalaval.com ThinkTop and documentation Go to www.io-link.com Click IODDfinder and key ThinkTop
IO-Link interface tool	<ul style="list-style-type: none"> IFM E30390 IO-Link Interface / USB IO-Link master IFM LR Device – Line recorder
ThinkTop V50 IO-Link Interface Description	<ul style="list-style-type: none"> alfalaval-000001....pdf
ThinkTop V70 IO-Link Interface Description	<ul style="list-style-type: none"> alfalaval-000002....pdf
Cable length to IO-Link master	<ul style="list-style-type: none"> Max 20 meters
Transmission rate	<ul style="list-style-type: none"> COM 2 (38.4 kBaud)
Minimum cycle time	<ul style="list-style-type: none"> 5 ms
Data storage	<ul style="list-style-type: none"> yes
Profiles	<ul style="list-style-type: none"> na
SIO mode	<ul style="list-style-type: none"> no
Port class	<ul style="list-style-type: none"> A



IO-Link data table

For the IO-Link version, the bit assignment and diagnostic data can be found in the manual "IO-Link Interface Description" for ThinkTop V50 and ThinkTop V70 respectively go to www.alfalaval.com ThinkTop V and documentation.

On ThinkTop V50 and ThinkTop V70 control board, using the IO-Link interface tool from IFM, all parameter settings and visualisation data are available through the M12 plug or terminals on the sensor board.

From the "IO-Link Interface Description" the table below shows an overview of the data storage (not all parameters included). When replacing a ThinkTop V on a process plant, some data are re-stored, included in the new ThinkTop V, and other data must be reassigned again, excluded in the new ThinkTop V.

Included	Excluded
Customization <ul style="list-style-type: none"> • Application Specific Tag • Function Tag • Location Tag • Power Save • Burst Clean • USA bitmapping • RGB colour 	Control board ID <ul style="list-style-type: none"> • Vendor Name • Vendor Text • Product Name • Product ID • Product Text • Serial Number • Hardware Version • Firmware Version • Prod Date
	Setup data <ul style="list-style-type: none"> • Setup positions • Setup state
	Diagnostics <ul style="list-style-type: none"> • SV-activations • SV-ON_time • PV-SetupStrokeEn • PV-SetupStrokeDeEn • PressureShockCnt • Temp • Log

Electrical connections**ThinkTop V50**

Terminal	Control board	Colour code wires
1	L +24V	BN (brown)
2	L -GND	BU (blue)
3	IO-Link signal	BK (black)


ThinkTop V70

Terminal	Control board	Colour code wires
1	L +24V	BN (brown)
2	L -GND	BU (blue)
3	IO-Link signal	BK (black)
	Seat lift sensor	
E1	L+	BN (brown)
E2	GND	BU (blue)
E3	Signal	BK (black) and WH (white)

ThinkTop V50 and V70

M12 option (4-pin A-coded plug)

Pin numbers and terminal numbers are aligned

M12 Chassis plug connector	Control board Terminal numbers	M12 pin assignments wire colours
	1: L +	Pin 1: BN (brown)
	2: nc	-
	3: L -	Pin 3: BU (blue)
	4: Out1	Pin 4: BK (black)

Alfa Laval ThinkTop® Digital

Match any level of valve control for fluid handling in hygienic applications

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 ± 0.1 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

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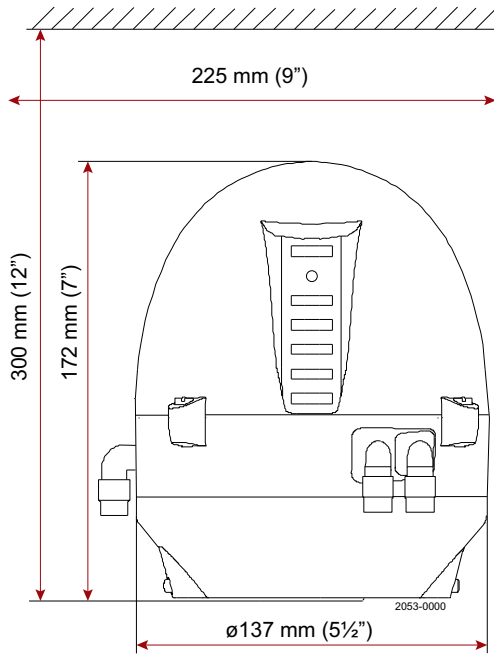
Options

- 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



Alfa Laval ThinkTop® AS-Interface

Match any level of valve control for fluid handling in hygienic applications

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 ± 0.1 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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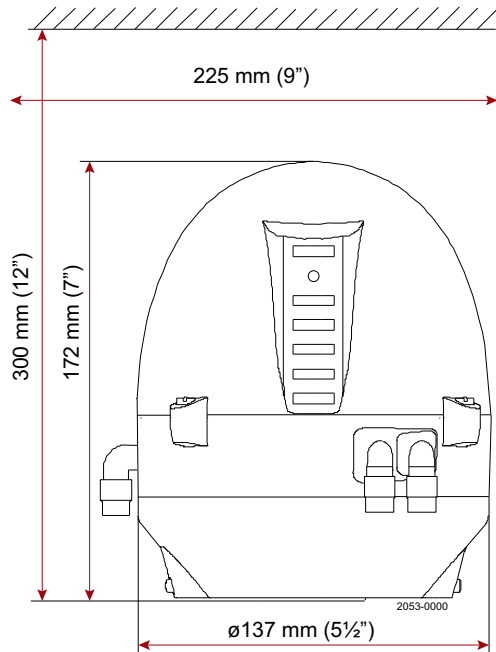
Options

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

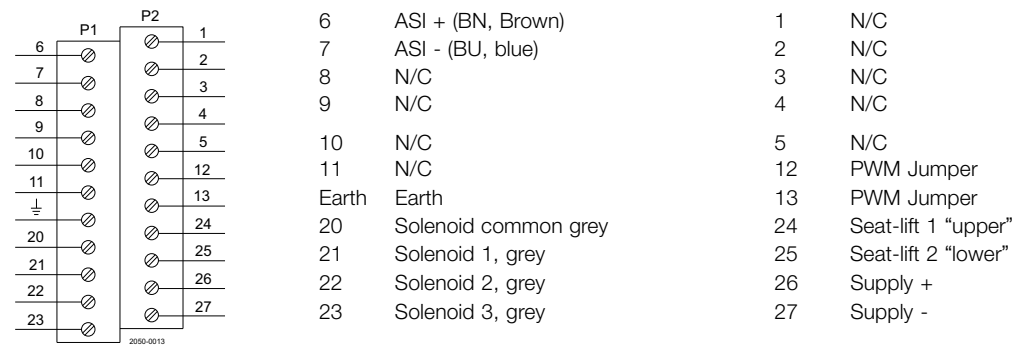
Accessories

- 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

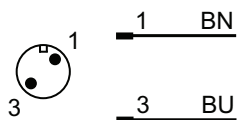
Dimensions (inch)



Electrical connection



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

Alfa Laval ThinkTop® DeviceNet

Match any level of valve control for fluid handling in hygienic applications

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:	$\varnothing 6$ 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

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

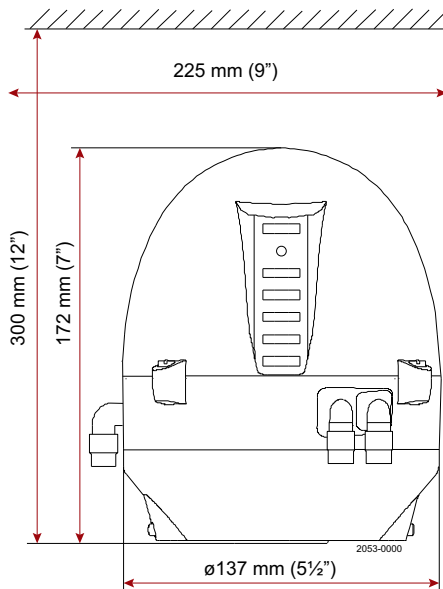
Options

- 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



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

Alfa Laval ThinkTop® Basic Digital

Ensures optimum valve control for fluid handling in hygienic applications

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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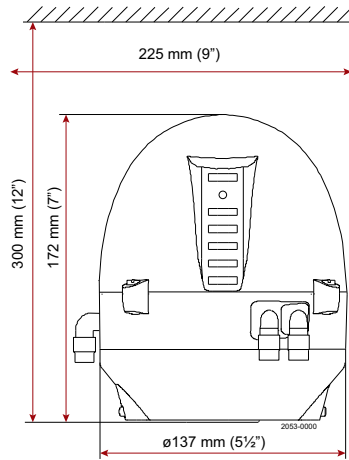
Options

- Communication interface
- Solenoid valve configuration
- Pneumatic tubing interface

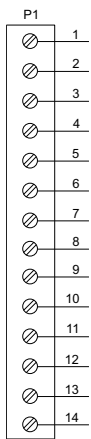
Accessories

- 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 SSSV7000 Small Single Seat valves

Dimensions (inch)



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 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) |

Alfa Laval ThinkTop® Basic AS-Interface

Ensures optimum valve control for fluid handling in hygienic applications

Introduction

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

Application

The ThinkTop Basic AS-Interface 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 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

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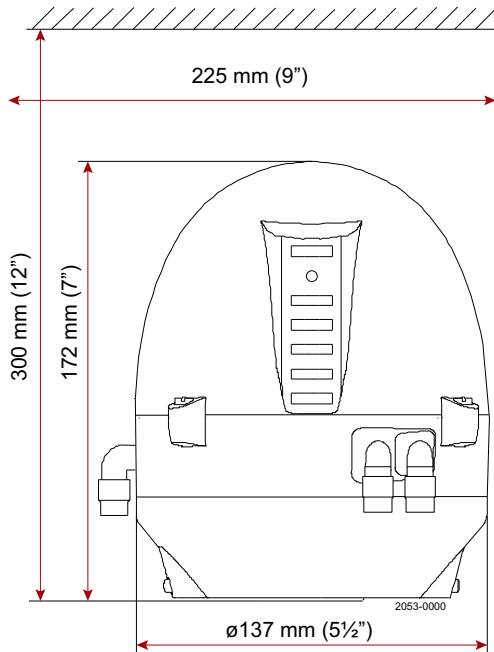
Options

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

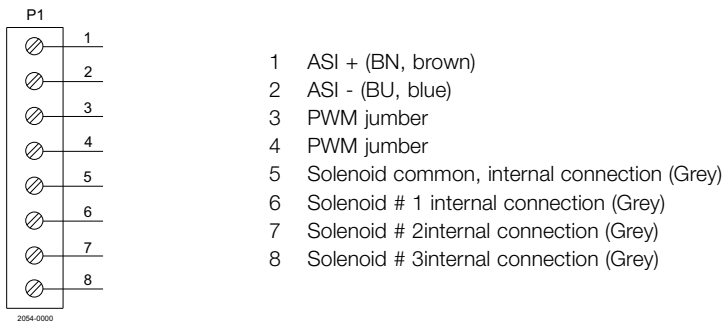
Accessories

- 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

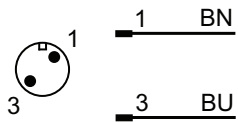
Dimensions (inch)



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

Alfa Laval ThinkTop® Basic Intrinsically Safe

Ensures optimum valve control in Ex environments for fluid handling in hygienic applications

Introduction

The Alfa Laval ThinkTop® Basic Intrinsically 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 Intrinsically Safe is designed to control the fluid handling 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 Intrinsically 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.

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.

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 Intrinsically 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.

Certificates



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: DIN EN 60947-5-6 (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: $\varnothing 6$ 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 connectionMain cable gland: PG11 (0.16" - $\varnothing 0.39$ ")

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

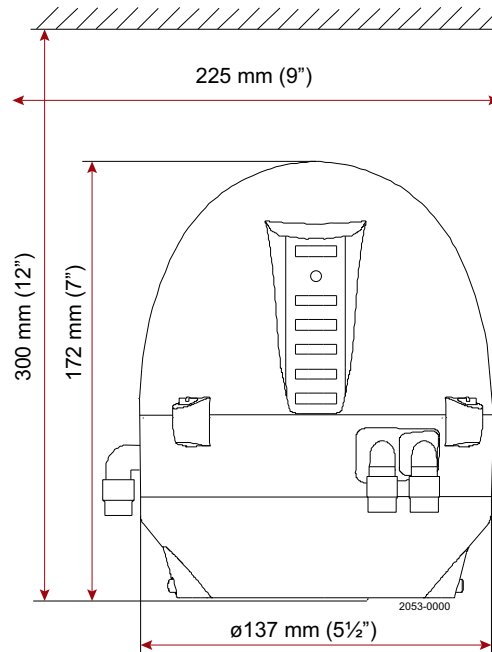
- Various cable options
- Threaded plate for indication pin on SRC, SMP-BC valves
- Adaptor for Unique 7000 Small Single Seat valves

Electrical connection

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

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Dimensions (inch)



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

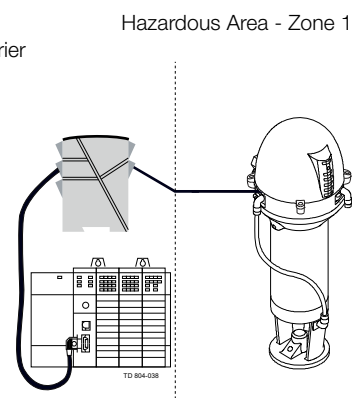
Valve / Actuator type	ATEX evaluation notes
Unique 7000 ATEX	⊕ Ex !! 2 G D c T4
Unique Mixproof	Non electric equipment with no own ignition source which can be used within the equipment-group II 2 G/D or II 3 G/D if removing the blue plastic cover from the bottom of the Mixproof valve.
SRC (except SRC-LS)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

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 Area - 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	mH
Max Capacitance (C _i)	100	nF	Max Capacitance (C _i)	0	nF



Alfa Laval ThinkTop® D30 Digital

Ensures basic valve control for fluid handling in hygienic applications

Introduction

The Alfa Laval ThinkTop® D30 Digital is a basic, easy-to-install valve control unit for fluid handling in hygienic applications. A compact, cost-effective alternative to external solenoid valves, it is ideal for use where space is limited, and operational simplicity and reliability is important. ThinkTop D30 Digital offers a simplified solution for Alfa Laval butterfly and single-seat valves.

Application

The Alfa Laval ThinkTop D30 Digital is designed for use in hygienic applications across the dairy, food, beverage, biotechnology, pharmaceutical and many other industries.

Benefits

- No-hassle intuitive control unit
- Easy-to-install, plug-and-play
- 360° LED indication and compact design to fit wherever space is limited
- Cost-effective alternative to using external solenoid valves
- Reliable, optimized hygienic design and easy to operate

Standard design

The ThinkTop D30 Digital valve control unit consists of a proven, air pressure sensor system with 360-degree LED visual status indicator, an integrated 3/2-way solenoid valve for a spring-loaded actuator, and a valve control board for connection to all major programmable logic controller (PLC) systems with a digital PNP interface. It fits on all Alfa Laval hygienic valves; no adapter is required.

Installation onto the top of the valve is straightforward. No special expertise or tools are required. No manual push-button setup. Simply plug and play the ThinkTop D30 Digital.

Working principle

The Alfa Laval ThinkTop D30 Digital valve control unit is fitted with one solenoid valve that can convert compressed air and the electrical PLC signal into mechanical energy to activate or deactivate the spring-loaded pneumatic valve actuator. The air pressure sensor system sends signals to the PLC system to activate or deactivate the pneumatic valve actuator.



Each control unit and its air pressure sensor fit most any Alfa Laval hygienic valve. This eliminates the need to re-adjust the sensors and boosts productivity.

360° LEDs conveniently display the main valve position, solenoid activation and local fault indication on the control unit.

Certificates



TECHNICAL DATA

Communication

Interface:	Digital PNP
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Sensor board

Max current consumption:	45mA
Feedback signal #1:	De-energized valve
Feedback signal #2:	Energized valve
Feedback signal #3:	Alarm

Solenoid valve

Max current consumption:	45mA
Air supply:	60 - 100 psi
Type of solenoid:	3/2-ways
Number of solenoids:	1
Manual hold override:	Yes
Push-in fittings:	ø6 mm

PHYSICAL DATA

Materials

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

Environment

Working temperature:	14 °F to +122 °F
Protection class:	P66 and IP67
Protection class equivalent:	NEMA 4.4x and 6P

Cable connection

Max wire size:	AWG 20
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Note!

For further information: See also ESE02248

Options

- Pneumatic tubing interface

Accessories

- Various cable options
- Elbow pneumatic fittings for adapting various tubing
- Threaded plate for indication pin on SRC, SMP-BC and i-SSV valves
- Adaptor for Unique SSSV valves

Compatible valves

ARC	Yes	SBV	Yes
SRC	Yes	Koltek	Yes
Unique 7000	Yes	SMP valves	Yes
i-7000	Yes	DV-ST	Yes
LKLA-T	Yes	Unique Mixproof	No
LKLA	No	Unique 7000 Long stroke	No
Air/Air actuator	No	Unique 7000 High pressure DN80 - DN100	No
		SRC Long stroke	No
		Unique 7000 DN125 - DN150	No

Electrical connection

Connection of power supply { GND
24 VDC

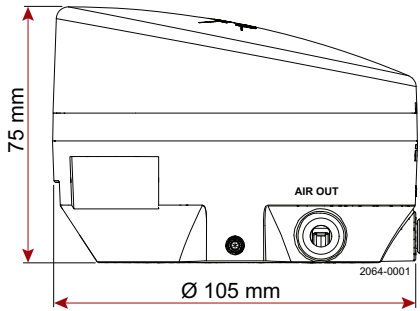
PLC output signal { Trigger solenoid

PLC input signals { Alarm
De-Energized
Energized

Digital Interface
Sensor board
Terminal strip

-
+
T
A
D
E

Dimensions (inch)



Alfa Laval 8697 Control and Indication unit

Pneumatic control and indication unit for use with the Alfa Laval Unique DV-ST valve

Introduction

The Alfa Laval 8697 Control and Indication unit is a pneumatic control and indication unit optimized for use with the Alfa Laval Unique DV-ST valve. Compact, durable and easy to clean, it is ideal for safe, reliable operation where space is limited. This automated control and indication unit provides real-time information about valve operating status 24/7 while boosting productivity and securing traceability.

Application

The 8697 Control and Indication unit is widely used with the Alfa Laval Unique DV-ST valve in hygienic applications across the dairy, food, beverage, biotechnology, pharmaceutical and many other industries.

Benefits

- Cost-effective digital device
- Safe, reliable operation
- Compact design
- Long service life
- Easy to clean

Standard design

The Alfa Laval 8697 Control and Indication unit consists of a transparent polycarbonate cap, a proven sensor system with light-emitting diodes (LEDs), solenoid valves, and sensor board for connection to any programmable logic controller (PLC) system with a digital interface.

Working principle

The indication pin mounted on the valve stem is used to locate the current valve position. The solenoid valves receive signals from the PLC system to activate or de-activate the air-operated valve. It then transmits feedback signals indicating up to two valve positions and valve condition back to the PLC system.



TECHNICAL DATA

Position feedback

2x initiator:	3 Wire PNP Inductive limit switch
2x initiator:	2 Wire NAMUR limit switch
Stroke range valve spindle	0.08 to 1.42 inch

Operating voltage

Solenoid valve:	24 VDC \pm 10%, 1W, residual ripple 10%
Inductive limit sensor:	10 to 30 VDC, max. 100mA per initiator
NAMUR limit switch:	8,2 VDC, max. 2,1 mA

Installation

As required, preferably with actuator in upright position

Protection type

IP65 and IP67 according to EN 60529, Type 4X

Protection class

3 acc. to DIN EN 61140

Conformity

EMC directive 2014/30/EU

Ignition protection

II 2G Ex ia IIC T4 Gb

Approval

cULus certifi cate no. E238179

Ignition protection	II 2G Ex ia IIC T4
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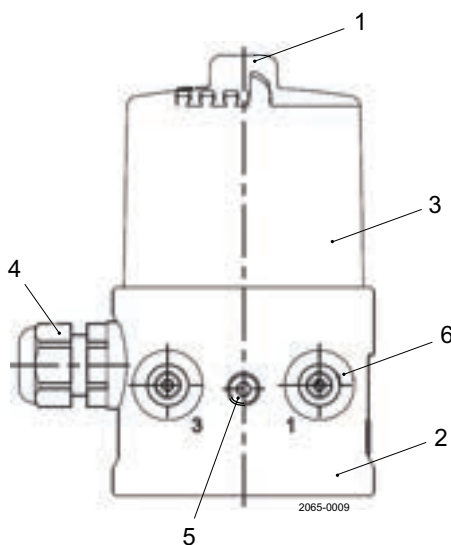
Electrical connection

Cable gland	M16 x 1,5 - Clamping area 0.16...0.31 inch
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PHYSICAL DATA

Material

1. Transparent cap	PC
2. Basic body	PPS
3. Sealing	EPDM
4. Cable gland	PA
5. Screws	Stainless steel
6. Push-in connector	POM / stainless steel
Threaded ports G1/8	Stainless steel

**Air connectors**

Push-in fitting for air hose \varnothing 6 mm and $\frac{1}{4}$ "

Control medium

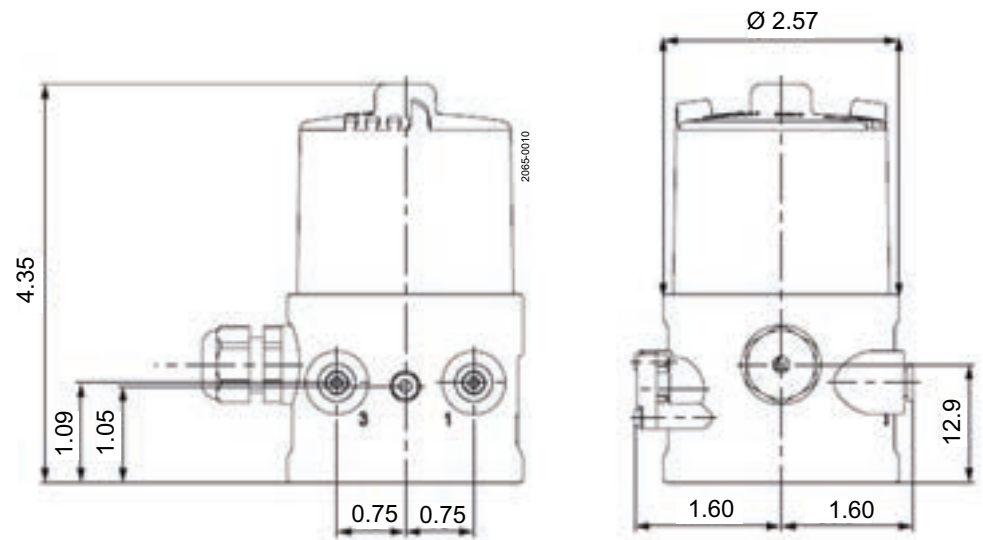
neutral gases, air, quality classes acc. to ISO 8573-1

Dust concentration	Class 7: max. particle size 1575 µm
Particle density	Class 5: max. particle density 6.24 pound/foot³
Pressure condensation point	Class 3: max. -4 °F
Oil concentration	Class X: max. 1.56 pound/foot³
Supply pressure	43.5 to 101.5 psi

Ambient temperature

ATEX version	-0 to +798 °F
With pilot valve	-145 to +798 °F
Without pilot valve	-290 to +870 °F

Dimensions (inch)



Electrical wire connection

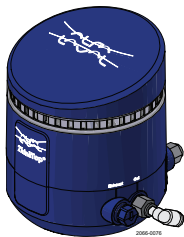


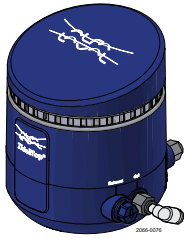
Terminal	Configuration	External circuit	
1	INI + (24 V DC) Supply		
2	INI GND Supply		+24 V DC
3	INI Top OUT Output 1		GND
4	INI Bottom OUT Output 2		Output 1
5	Valve control 0/24 V DC		
6	Valve control GND		0/24 V DC ±10% Residual ripple 10%

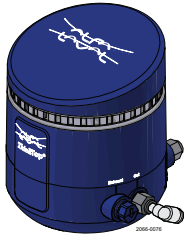


Terminal	Configuration	External circuit
1	INI Top +	
2	INI Top -	
3	INI Bottom +	
4	INI Bottom -	
5	Valve control +	
6	Valve control GND	

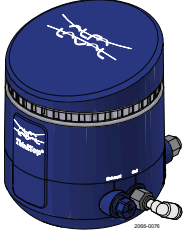
Valves: Unique SSV, i-SSV, SSSV, LKLA-T, SMP-BC, DV-ST, Shutter, SBV, Unique Mixproof
 Except special valves: Long Stroke valves, LKLA, Air/Air, DV-ST
 DN65, 2½", DN80, 3", DN100, 4" and 2-Step actuators

Item No.	LLP	Supply Control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5422							ThinkTop V50 Digital PNP	
9615400401		24 VDC	Cable gland	0				
9615400403		24 VDC	Cable gland	1	ø6 mm	3/2		
9615400405		24 VDC	Cable gland	1	1/4"	3/2		
Product code: 5423								
9615400402		24 VDC	M12 plug	0				
9615400404		24 VDC	M12 plug	1	ø6 mm	3/2		
9615400406		24 VDC	M12 plug	1	1/4"	3/2		

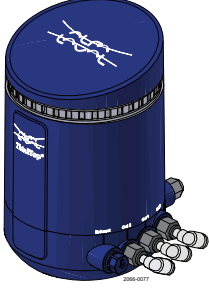
Item No.	LLP	Supply Control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5424							ThinkTop V50 AS-Interface v2.1, 31 node	
9615400407		29.5 - 31.6 VDC	Cable gland	0				
9615400409		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	3/2		
9615400411		29.5 - 31.6 VDC	Cable gland	1	1/4"	3/2		
Product code: 5425								
9615400408		29.5 - 31.6 VDC	M12 plug	0				
9615400410		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	3/2		
9615400412		29.5 - 31.6 VDC	M12 plug	1	1/4"	3/2		

Item No.	LLP	Supply Control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5426							ThinkTop V50 AS-Interface v3.0, 62 node	
9615400413		29.5 - 31.6 VDC	Cable gland	0				
9615400415		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	3/2		
9615400417		29.5 - 31.6 VDC	Cable gland	1	1/4"	3/2		
Product code: 5427								
9615400414		29.5 - 31.6 VDC	M12 plug	0				
9615400416		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	3/2		
9615400418		29.5 - 31.6 VDC	M12 plug	1	1/4"	3/2		

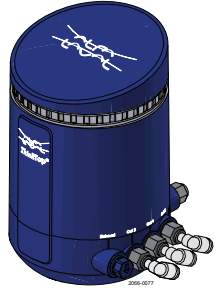
Valves: Unique SSV, i-SSV, SSSV, LKLA-T, SMP-BC, DV-ST, Shutter, SBV, Unique Mixproof
 Except special valves: Long Stroke valves, LKLA, Air/Air, DV-ST DN65, 2½",
 DN80, 3", DN100, 4" and 2-Step actuators

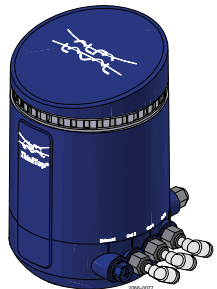
Item No.	LLP	Supply Control board	Main entry	Solenoid valve	Air hose connection	Solenoid type	
Product code: 5434							ThinkTop V50 IO-Link
9615400419		24 VDC	M12 plug	0			
9615400420		24 VDC	M12 plug	1	ø6 mm	3/2	
9615400421		24 VDC	M12 plug	1	1/4"	3/2	

Valves: Unique SSV, i-SSV, SSSV, LKLA-T, SMP-BC, DV-ST, Shutter, SBV, Unique Mixproof, Long Stroke valves, Air/Air and 2-Step actuators
 Except special valves: LKLA

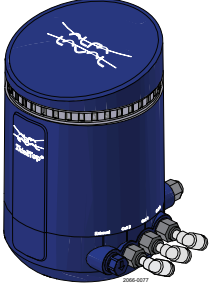
Item No.	LLP	Supply control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5428							ThinkTop V70 Digital PNP	
9615400001		24 VDC	Cable gland	0				
9615400003		24 VDC	Cable gland	1	ø6 mm	3/2		
9615400007		24 VDC	Cable gland	2	ø6 mm	3/2		
9615400011		24 VDC	Cable gland	3	ø6 mm	3/2		
9615400015		24 VDC	Cable gland	1	ø6 mm	5/2		
9615400005		24 VDC	Cable gland	1	1/4"	3/2		
9615400009		24 VDC	Cable gland	2	1/4"	3/2		
9615400013		24 VDC	Cable gland	3	1/4"	3/2		
9615400017		24 VDC	Cable gland	1	1/4"	5/2		
Product code: 5429								
9615400002		24 VDC	M12 plug	0				
9615400004		24 VDC	M12 plug	1	ø6 mm	3/2		
9615400008		24 VDC	M12 plug	2	ø6 mm	3/2		
9615400012		24 VDC	M12 plug	3	ø6 mm	3/2		
9615400016		24 VDC	M12 plug	1	ø6 mm	5/2		
9615400006		24 VDC	M12 plug	1	1/4"	3/2		
9615400010		24 VDC	M12 plug	2	1/4"	3/2		
9615400014		24 VDC	M12 plug	3	1/4"	3/2		
9615400018		24 VDC	M12 plug	1	1/4"	5/2		

Valves: Unique SSV, i-SSV, SSSV, LKLA-T, SMP-BC, DV-ST, Shutter,
SBV, Unique Mixproof, Long Stroke valves, Air/Air and 2-Step actuators
Except special valves: LKLA

Item No.	LLP	Supply control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5430							ThinkTop V70 AS-Interface v2.1, 31 node	
9615400101		29.5 - 31.6 VDC	Cable gland	0				
9615400103		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	3/2		
9615400107		29.5 - 31.6 VDC	Cable gland	2	ø6 mm	3/2		
9615400111		29.5 - 31.6 VDC	Cable gland	3	ø6 mm	3/2		
9615400115		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	5/2		
9615400105		29.5 - 31.6 VDC	Cable gland	1	1/4"	3/2		
9615400109		29.5 - 31.6 VDC	Cable gland	2	1/4"	3/2		
9615400113		29.5 - 31.6 VDC	Cable gland	3	1/4"	3/2		
9615400117		29.5 - 31.6 VDC	Cable gland	1	1/4"	5/2		
Product code: 5431								
9615400102		29.5 - 31.6 VDC	M12 plug	0				
9615400104		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	3/2		
9615400108		29.5 - 31.6 VDC	M12 plug	2	ø6 mm	3/2		
9615400112		29.5 - 31.6 VDC	M12 plug	3	ø6 mm	3/2		
9615400116		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	5/2		
9615400106		29.5 - 31.6 VDC	M12 plug	1	1/4"	3/2		
9615400110		29.5 - 31.6 VDC	M12 plug	2	1/4"	3/2		
9615400114		29.5 - 31.6 VDC	M12 plug	3	1/4"	3/2		
9615400118		29.5 - 31.6 VDC	M12 plug	1	1/4"	5/2		

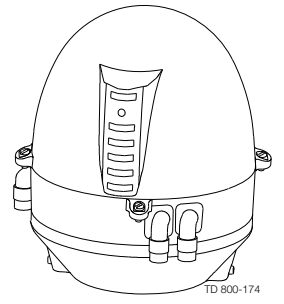
Item No.	LLP	Supply control board	Main entry	Solenoid valve	Air hose connection	Solenoid type		
Product code: 5432							ThinkTop V70 AS-Interface v3.0, 62 node	
9615400201		29.5 - 31.6 VDC	Cable gland	0				
9615400203		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	3/2		
9615400207		29.5 - 31.6 VDC	Cable gland	2	ø6 mm	3/2		
9615400211		29.5 - 31.6 VDC	Cable gland	3	ø6 mm	3/2		
9615400215		29.5 - 31.6 VDC	Cable gland	1	ø6 mm	5/2		
9615400205		29.5 - 31.6 VDC	Cable gland	1	1/4"	3/2		
9615400209		29.5 - 31.6 VDC	Cable gland	2	1/4"	3/2		
9615400213		29.5 - 31.6 VDC	Cable gland	3	1/4"	3/2		
9615400217		6629.5 - 31.6 VDC	Cable gland	1	1/4"	5/2		
Product code: 5433								
9615400202		29.5 - 31.6 VDC	M12 plug	0				
9615400204		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	3/2		
9615400208		29.5 - 31.6 VDC	M12 plug	2	ø6 mm	3/2		
9615400212		29.5 - 31.6 VDC	M12 plug	3	ø6 mm	3/2		
9615400216		29.5 - 31.6 VDC	M12 plug	1	ø6 mm	5/2		
9615400206		29.5 - 31.6 VDC	M12 plug	1	1/4"	3/2		
9615400210		29.5 - 31.6 VDC	M12 plug	2	1/4"	3/2		
9615400214		29.5 - 31.6 VDC	M12 plug	3	1/4"	3/2		
9615400218		29.5 - 31.6 VDC	M12 plug	1	1/4"	5/2		

Valves: Unique Mixproof, Unique SSV, i-SSV, SSSV, LKLA-T,
SMP-BC, DV-ST, Shutter, SBV
Except special valves: LKLA

Item No.	LLP	Supply control board	Main entry	Solenoid valve	Air hose connection	Solenoid type	
Product code: 5435							ThinkTop V70 IO-Link
9615400301		24 VDC	M12 plug	0			
9615400302		24 VDC	M12 plug	1	∅6 mm	3/2	
9615400304		24 VDC	M12 plug	2	∅6 mm	3/2	
9615400306		24 VDC	M12 plug	3	∅6 mm	3/2	
9615400308		24 VDC	M12 plug	1	∅6 mm	5/2	
9615400303		24 VDC	M12 plug	1	1/4"	3/2	
9615400305		24 VDC	M12 plug	2	1/4"	3/2	
9615400307		24 VDC	M12 plug	3	1/4"	3/2	
9615400309		24 VDC	M12 plug	1	1/4"	5/2	

Top unit
Product code: 5402

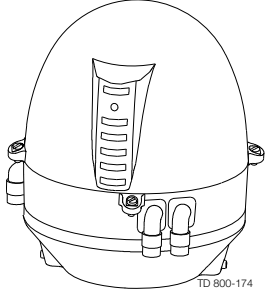
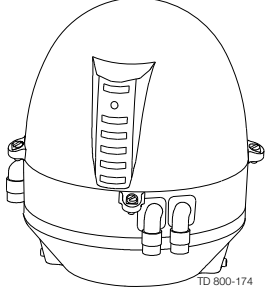
Valves: DV-ST, Unique 7000, Unique 7000-LS, Unique 7000 Aseptic, Unique Mixproof, Unique-TO, SMP-BC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
							ThinkTop® Digital 8-30 VDC PNP/NPN
9612578901		8-30 VDC PNP/NPN	0				
9612578902		8-30 VDC PNP/NPN	1	24 VDC	ø0.24 in	3/2	
9612578903		8-30 VDC PNP/NPN	2	24 VDC	ø0.24 in	3/2	
9612578904		8-30 VDC PNP/NPN	3	24 VDC	ø0.24 in	3/2	
9612578905		8-30 VDC PNP/NPN	1	24 VDC	ø0.24 in	5/2	
9612578952		8-30 VDC PNP/NPN	1	24 VDC	1/4"	3/2	
9612578953		8-30 VDC PNP/NPN	2	24 VDC	1/4"	3/2	
9612578954		8-30 VDC PNP/NPN	3	24 VDC	1/4"	3/2	
9612578955		8-30 VDC PNP/NPN	1	24 VDC	1/4"	5/2	

Indication pin for Long Stroke and High Pressure Valves are found in the PD sheet - Ordering

Top Unit
Product code: 5404

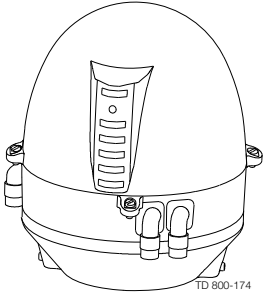
Valves: DV-ST, Unique 7000, Unique 7000-LS, Unique 7000 Aseptic, Unique Mixproof, Unique-TO, SMP-BC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop® AS-Interface 31 node (version 2.1)							
9612615501		AS-Interface 29.5 - 31.6 VDC	0				
9612615502		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	∅0.24 in	3/2	
9612615503		AS-Interface 29.5 - 31.6 VDC	2	24 VDC	∅0.24 in	3/2	
9612615504		AS-Interface 29.5 - 31.6 VDC	3	24 VDC	∅0.24 in	3/2	
9612615505		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	∅0.24 in	5/2	
9612615552		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	1/4"	3/2	
9612615553		AS-Interface 29.5 - 31.6 VDC	2	24 VDC	1/4"	3/2	
9612615554		AS-Interface 29.5 - 31.6 VDC	3	24 VDC	1/4"	3/2	
9612615555		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	1/4"	5/2	
ThinkTop® AS-Interface 62 node (version 3.0 rev 1)							
9612615511		AS-Interface 29.5 - 31.6 VDC	0				
9612615512		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	∅0.24 in	3/2	
9612615513		AS-Interface 29.5 - 31.6 VDC	2	24 VDC	∅0.24 in	3/2	
9612615514		AS-Interface 29.5 - 31.6 VDC	3	24 VDC	∅0.24 in	3/2	
9612615515		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	∅0.24 in	5/2	
9612615562		AS-Interface 29.5 - 31.6 VDC	1	24 VDC	1/4"	3/2	
9612615563		AS-Interface 29.5 - 31.6 VDC	2	24 VDC	1/4"	3/2	
9612615564		AS-Interface 29.5 - 31.6 VDC	3	24 VDC	1/4"	3/2	

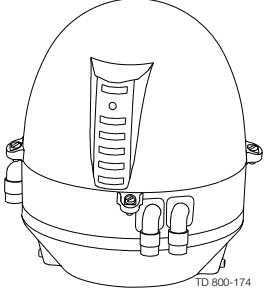
Indication pin for Long Stroke and High Pressure Valves are found in the product leaflet/price list

Top unit
Product code: 5419

Valves: DV-ST, Unique 7000, Unique 7000-LS, Unique 7000 Aseptic, Unique Mixproof, Unique-TO, SMP-BC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop AS-Interface 31 node with M12 plug connection (Version 2.1)							
9615322001		AS-Interface (29.5 - 31.6 VDC)	0				
9615322002		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	3/2	
9615322003		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	ø0.24 in	3/2	
9615322004		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	ø0.24 in	3/2	
9615322005		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	5/2	
9615322052		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	3/2	
9615322053		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	1/4"	3/2	
9615322054		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	1/4"	3/2	
9615322055		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	5/2	

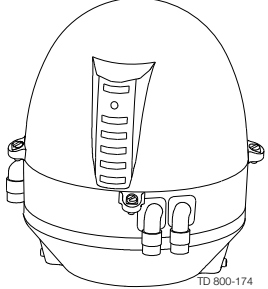
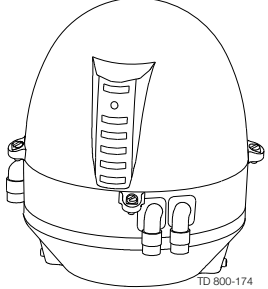
Indication pin for Long Stroke and High Pressure Valves are found in the product leaflet/price list

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop AS-Interface 62 node with M12 plug connection (Version 3.0 rev. 1)							
9615322011		AS-Interface (29.5 - 31.6 VDC)	0				
9615322012		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	3/2	
9615322013		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	ø0.24 in	3/2	
9615322014		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	ø0.24 in	3/2	
9615322015		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	5/2	
9615322062		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	3/2	
9615322063		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	1/4"	3/2	
9615322064		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	1/4"	3/2	
9615322065		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	5/2	

Indication pin for Long Stroke and High Pressure Valves are found in the product leaflet/price list

Top Unit
Product code: 5406

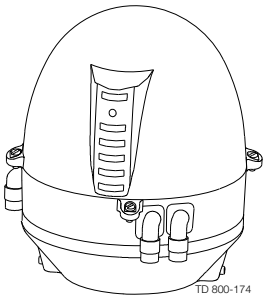
Valves: DV-ST, Unique 7000, Unique 7000-LS, Unique
7000 Aseptic, Unique Mixproof, Unique-TO, SMP-BC,
LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop® DeviceNet 11-25 VDC							
9612639601		DeviceNet 11-25 VDC	0				
9612639602		DeviceNet 11-25 VDC	1	8 VDC	∅0.24 in	3/2	
9612639603		DeviceNet 11-25 VDC	2	8 VDC	∅0.24 in	3/2	
9612639604		DeviceNet 11-25 VDC	3	8 VDC	∅0.24 in	3/2	
9612639605		DeviceNet 11-25 VDC	1	8 VDC	∅0.24 in	5/2	
9612639652		DeviceNet 11-25 VDC	1	8 VDC	1/4"	3/2	
9612639653		DeviceNet 11-25 VDC	2	8 VDC	1/4"	3/2	
9612639654		DeviceNet 11-25 VDC	3	8 VDC	1/4"	3/2	

Indication pin for Long Stroke and High Pressure Valves are found in the PD sheet - Ordering

Top unit
Product code: 5403

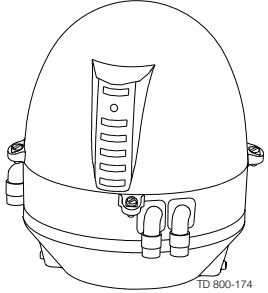
Valves: DV-ST (from size DN15), Unique 7000, Unique Mixproof, SMP-BC, SMP-SC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop® Basic 10-30 VDC PNP/NPN							
9613419801		10-30 VDC PNP/NPN	0				 <p style="text-align: right; font-size: small;">TD 800-174</p>
9613419802		10-30 VDC PNP/NPN	1	24 VDC	ø0.24 in	3/2	
9613419803		10-30 VDC PNP/NPN	2	24 VDC	ø0.24 in	3/2	
9613419804		10-30 VDC PNP/NPN	3	24 VDC	ø0.24 in	3/2	
9613419805		10-30 VDC PNP/NPN	1	24 VDC	ø0.24 in	5/2	
9613419852		10-30 VDC PNP/NPN	1	24 VDC	1/4"	3/2	
9613419853		10-30 VDC PNP/NPN	2	24 VDC	1/4"	3/2	
9613419854		10-30 VDC PNP/NPN	3	24 VDC	1/4"	3/2	
9613419855		10-30 VDC PNP/NPN	1	24 VDC	1/4"	5/2	

Indication pin for Long Stroke and High Pressure Valves are found in the PD sheet - Ordering

Top Unit
Product code: 5410

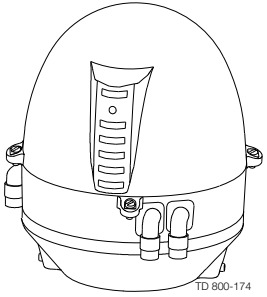
Valves: DV-ST (from size DN15), Unique 7000, Unique Mixproof, SMP-BC, SMP-SC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop® Basic AS-Interface 62 node (version 3.0 rev 1)							
9613484401		AS-Interface (29.5-31.6 VDC)	0				
9613484402		AS-Interface (29.5-31.6 VDC)	1	24 VDC	∅0.24 in	3/2	
9613484403		AS-Interface (29.5-31.6 VDC)	2	24 VDC	∅0.24 in	3/2	
9613484404		AS-Interface (29.5-31.6 VDC)	3	24 VDC	∅0.24 in	3/2	
9613484405		AS-Interface (29.5-31.6 VDC)	1	24 VDC	∅0.24 in	5/2	
9613484452		AS-Interface (29.5-31.6 VDC)	1	24 VDC	1/4"	3/2	
9613484453		AS-Interface (29.5-31.6 VDC)	2	24 VDC	1/4"	3/2	
9613484454		AS-Interface (29.5-31.6 VDC)	3	24 VDC	1/4"	3/2	
9613484455		AS-Interface (29.5-31.6 VDC)	1	24 VDC	1/4"	5/2	

Indication pin for Long Stroke and High Pressure Valves are found in the PD sheet - Ordering


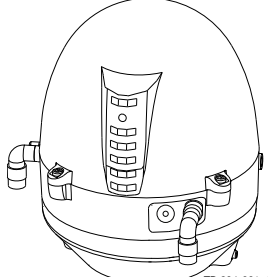
Top unit
Product code: 5421

Valves: DV-ST (from size DN15), Unique 7000, Unique Mixproof, SMP-BC, SMP-SC, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	
ThinkTop Basic AS-Interface 62 node with M12 plug connection (Version 3.0 rev. 1)							
9615321901		AS-Interface (29.5 - 31.6 VDC)	0				
9615321902		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	3/2	
9615321903		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	ø0.24 in	3/2	
9615321904		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	ø0.24 in	3/2	
9615321905		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	ø0.24 in	5/2	
9615321952		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	3/2	
9615321953		AS-Interface (29.5 - 31.6 VDC)	2	24 VDC	1/4"	3/2	
9615321954		AS-Interface (29.5 - 31.6 VDC)	3	24 VDC	1/4"	3/2	
9615321955		AS-Interface (29.5 - 31.6 VDC)	1	24 VDC	1/4"	5/2	

Top unit
Product code: 5405

Valves: DV-ST, SRC, Unique 7000 ATEX, Unique Mixproof, SMP-BC,
SMP-SC, SMP-TO, LKLA-T (LKB), Shutter valve, SBV.

Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection	Valve type	 II 2G/D EEx ia IIC T6 ThinkTop® Basic Intrinsically Safe
9613468801		8 VDC NAMUR NC	0				
9613468810		8 VDC NAMUR NC	1	12 VDC	ø0.24 in	3/2	
9613468811		8 VDC NAMUR NC	2	12 VDC	ø0.24 in	3/2	
9613468820		8 VDC NAMUR NC	1	12 VDC	1/4"	3/2	
9613468821		8 VDC NAMUR NC	2	12 VDC	1/4"	3/2	

NOTE!

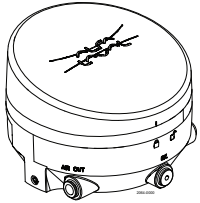
ThinkTop Basic Intrinsically Safe does not support High Pressure valve, SRC-LS and Unique 7000-LS.

Contact customer support to get the "Atex product statement 2009" with listed valves inside/outside the scope of ATEX directive 94/9/EC .

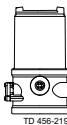
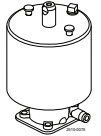
This ATEX approval only cover the ThinkTop Basic Intrinsically Safe.

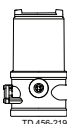
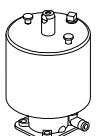
Product code: 5418

Valves: DV-ST (up to size DN50), SRC, Unique 7000, SMP-BC, LKLA-T (LKB), Koltek, SBV.
 Except: SRC-LS, Unique 7000-LS, 7000, (DN80 & DN100 high pressure).



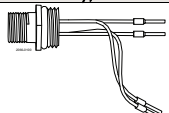
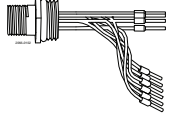
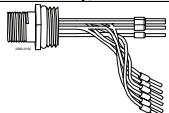
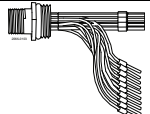
Item No.	LLP USD	Supply sensor system	Solenoid No.	Supply solenoids	Ext. air tube connection		Valve type	
ThinkTop® D30								
9614191101		24 VDC	1	24 VDC	ø0.24 in		3/2	

Product code: 5417

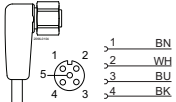
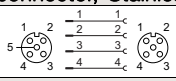
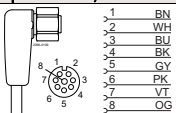
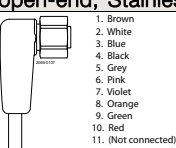
Diaphragm Actuator Stainless Steel/Stainless Steel						Control unit 8697			
Item No.	LLP USD	Function	Valve	Group	Pilot valve	H87xW66	Position feedback	Interface	SS/HP
9615363901		NC NO	DN 8	1	1	 TD 456-219	Open and Close	24 VDC Inductive sensor	
9615363903			DN 15						
			DN 20	2					
			DN 25						
9615363905			DN 40	3					
			DN 50						
9615363906			DN 65	4					
9615363907			DN 80						
9615364001			DN 8	1	1	Single Acting	Open and Close	Zone 1 NAMUR sensor	
			DN 15						
9615364003			DN 20	2					
			DN 25						
9615364005			DN 40	3					
			DN 50						
9615364006		DN 65	4						
9615364007		DN 80							

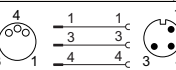
Diaphragm Actuator Stainless Steel/Stainless Steel						Indication unit 8697			
Item No.	LLP USD	Function	Valve	Group	Pilot valve	H87xW66	Position feedback	Interface	SS/HP
9615364101		NC NO AA	DN 8	1	0	 TD 456-219	Open and Close	24 VDC Inductive sensor	
9615364103			DN 15						
			DN 20	2					
			DN 25						
9615364105			DN 40	3					
			DN 50						
9615364106			DN 65	4					
9615364107			DN 80						
9615364201			DN 8	1	0	Single Double Acting	Open and Close	Zone 1 NAMUR sensor	
			DN 15						
9615364203			DN 20	2					
			DN 25						
9615364205			DN 40	3					
			DN 50						
9615364206		DN 65	4						
9615364207		DN 80							

Product code: 5416

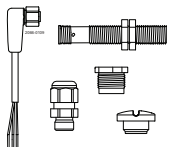
Item No.	LLP USD	Description	
Drop cable for AS-Interface			
9611993518		6.56 ft cable (2 x 0.002 in ²) with AS-I flat cable connector IP 67 and open-end	
M12 chassis connector (4-pin series), Stainless Steel			
9615397401		AS-Interface 2 wire connections for ThinkTop V70 and ThinkTop V50	
M12 chassis connector (4-pin series), Stainless Steel			
9615397402		IO-Link 3 wire connections for ThinkTop V70 and ThinkTop V50	
M12 chassis connector (8-pin series), Stainless Steel			
9615397403		Digital interface 6 wire connections for ThinkTop V50	
M12 chassis connector (8-pin series), Stainless Steel			
9615397404		Digital interface 8 wire connections for ThinkTop V70	
M12 chassis connector (12-pin series), Stainless Steel			
9615397405		Digital interface 10 wire connections for ThinkTop V70	

Product code: 5416

Item No.	LLP USD	Description	
M12 angle socket connector cable, 4 pin and 4 wires with open-end, Stainless Steel			
9615467501 9615467502		5 m grey colour cable for ThinkTop AS-Interface and IO-Link 10 m grey colour cable for ThinkTop AS-Interface and IO-Link	
M12 angle jumper cable, 4 pin and 4 wires with male-female connector, Stainless Steel			
9615467601 9615467602		5 m grey colour cable for ThinkTop AS-Interface and IO-Link 10 m grey colour cable for ThinkTop AS-Interface and IO-Link	
M12 angle socket connector cable, 8 pin and 8 wires with open-end, Stainless Steel			
9611995303 9611995304		5 m orange colour cable for ThinkTop V50 Digital 10 m orange colour cable for ThinkTop V50 Digital	
M12 angle socket connector cable, 12 pin and 12 wires with open-end, Stainless Steel			
9615489701 9615489702		5 m grey colour cable for ThinkTop V70 Digital 10 m grey colour cable for ThinkTop V70 Digital	

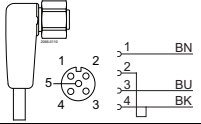
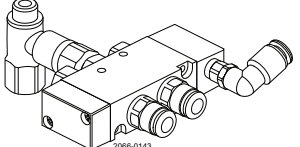
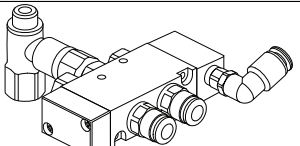
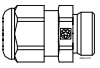
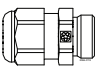


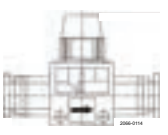
Item No.	LLP USD	Description	
Jumper cable with M12 and M8 connector, 3 pole			
9611995652		0.98 ft cable, fitted with M8 angle and M12 straight connector	 note:

Note: For Unique Sample Valve, applying for the M5 inductive sensor IY5036 and IY5046

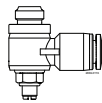
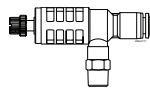
Item No.	LLP USD	Description	
Upper seat lift surveillance kit, applies to all Unique Mixproof valves			
9615414801		Complete kit - Comprising Sensor: 9611995199 IFT 216 Cable: 9615397501 EVF599 Bushing: 9614257508 Sensor adapter Cable gland: 9611996064 Cable gland M12 Not part of the kit replacement screw: 9615331901 for spindle coupling	

Note: For valves without direct sensor mount in yoke, use additional mounting bracket for sensor, part number 9613095503

Product code: 5416


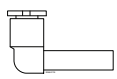
Item No.	LLP USD	Description	
Angle M12 socket connector cable, 4 pin and 3 wires with open-end, Stainless Steel			
9615397501		Grey seat lift sensor cable, 1 meter for all Unique Mixproof valves	
Air booster kit for (LPV) Large Particle valve			
8010006250		Pneumatic 5/2-way booster valve with $\varnothing 6$ mm air fittings Ready to operate and to be installed on ThinkTop V70 3x3/2-way solenoid valves Mounting instructions are included in the kit.	
Air booster kit for Curd valve			
8010006251		Pneumatic 5/2-way booster valve with $\varnothing 1/4$ " air fittings Ready to operate and to be installed on ThinkTop V70 3x3/2-way solenoid valves Mounting instructions are included in the kit.	
Cable gland M16 [Black] $\varnothing 0.18-0.4$ in			
9611996063		Cable gland for main cable entry on ThinkTop V70 and ThinkTop V50	
Cable gland M16 [Black] $\varnothing 0.08-0.28$ in			
9611996066		Cable gland for main cable entry, using AS-I drop-cable on ThinkTop V70 and ThinkTop V50	
Cable gland M12 [Black] $\varnothing 0.14-0.28$			
9611996064		Cable gland for connecting seat lift sensor cable on ThinkTop V70	
Bushing			
9614257508		Yoke mount adapter for upper seat lift sensor on Unique Mixproof valve	
Hand air shut-off valve, 270 l/min			
9611996112 9611996113		For $\varnothing 6$ mm air line installation to ThinkTop V70 and ThinkTop V50 For $\varnothing 1/4$ " air line installation to ThinkTop V70 and ThinkTop V50	

Product code: 5416

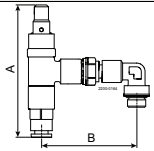
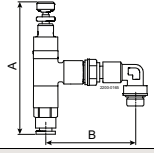
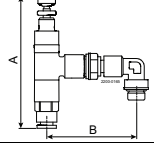
Item No.	LLP USD	Description	
Valve speed reduction 0 - 100%			
9611996114		(Blue rim) $\varnothing 6$ mm air-fitting connection and G1/8 threads for direct mounting on ThinkTop V70 and ThinkTop V50	
9611996115		(Grey rim) $\varnothing 1/4$ " air-fitting connection and G1/8 threads for direct mounting on ThinkTop V70 and ThinkTop V50	
Valve closing speed increase			
9611996116		(Blue rim) $\varnothing 6$ mm air-fitting connection and G1/8 threads for direct mounting on the valve actuator for air quick exhaust. Unit with $\varnothing 1/4$ " air-fitting connection is not available	

Note:

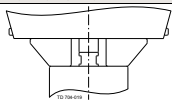
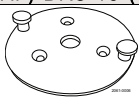
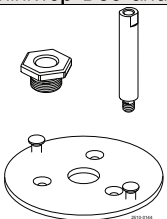
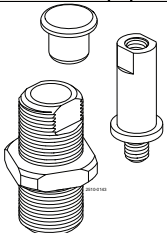
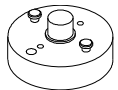
Note: Mount on ThinkTop - Reduce valve opening speed. Mount on valve actuator - Reduce valve closing speed

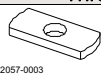

Item No.	LLP USD	Description	
Straight air-fittings (threaded)			
9611996073		Straight air-fitting, Nickel-plated brass (Blue rim) $\varnothing 6$ mm and G1/8 threads for direct mounting on ThinkTop V70 and ThinkTop V50	
9611996074		Straight air-fitting, Nickel-plated brass (Grey rim) $\varnothing 1/4$ " and G1/8 threads for direct mounting on ThinkTop V70 and ThinkTop V50	
Angle air-fittings			
9611996075		Angle air-fitting, Nylon (Blue rim) Push-in fitting $\varnothing 6$ mm to $\varnothing 6$ mm on ThinkTop V70 and ThinkTop V50	
9611995678		Angle air-fitting, Nickel-plated brass (Black rim) Push-in fitting $\varnothing 6$ mm to $\varnothing 6$ mm on ThinkTop V70 and ThinkTop V50	
9611996076		Angle air-fitting, Nylon (Grey rim) Push-in fitting $\varnothing 1/4$ " to $\varnothing 1/4$ " on ThinkTop V70 and ThinkTop V50	

Product code: 5416

Item no.	LLP USD	Description	Dimensions (In)		
9611995903		Air-fitting, Nickel-plated brass (Black rim) air-fitting $\varnothing 6\text{mm}$ - Set pressure 3 bar	2.78	2.00	<p>Air Reduction Valve</p> 
9611995904		Air-fitting, Nickel-plated brass (Black rim) air-fitting $\varnothing 6\text{mm}$ - Adjustable pressure	2.78	2.00	<p>Air Reduction Valve</p> 
9611996094		Air-fitting, Nickel-plated brass (Orange rim) air-fitting $\varnothing 1/4''$ - set pressure 3 bar	2.78	2.00	<p>Air Reduction Valve</p> 

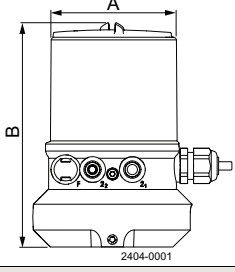
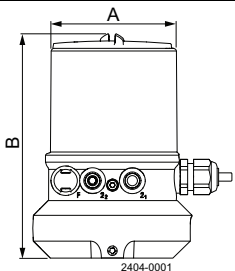
Product code: 5416

Item No.	LLP USD	Description	
Unique 7000 Small Single Seat Valve size 12.7-19.0 mm			
9612947601		Adapter set for ThinkTop V70, ThinkTop V50, ThinkTop D30 and IndiTop	
Unique DV-ST stainless steel actuator High Pressure (SS/HP) DN8-15 (1/4"-1/2")			
9615299001		Adapter set for ThinkTop V70, ThinkTop V50, ThinkTop D30 and IndiTop	
Unique DV-ST stainless steel actuator Slim (SS/SL) DN8-100 (1/4"-4")			
Adapter set for ThinkTop V70, ThinkTop V50, ThinkTop D30 and IndiTop			
8010008221 8010008222		Adapter kit DN8-DN40 Adapter kit DN50-DN80	
Unique DV-ST stainless steel actuator Slim (SS/SL) DN8-100 (1/4"-4")			
Stroke limiter for stainless steel actuator type Slim (SS/SL). Can be combined with adaptor kit for ThinkTop (SS/SL only)			
8010008219 8010008220		Stroke limiter kit DN8-DN40 Stroke limiter kit DN50-DN80	
Sanitary Ball Valve size 0.98-3.94 in			
9612647528		SBV size 0.1" - 3" - Adapter set for ThinkTop V70, ThinkTop V50, ThinkTop D30 and IndiTop	
9612647610		SBV size 3.9" - Adapter set for ThinkTop V70, ThinkTop V50, ThinkTop D30 and IndiTop	

Item No.	LLP USD	Description	
Threaded plate			
3135707012		Threaded plate for sensor target SRC, SMP-BC and I-SSV valves	 2057-0003
Unique Sample Valve size 4 - 25			
9614017401		M5 sensor adapter for IY5036 and IY5046 on Sample Valve (Open valve position only) size 4 and 10	 2050-0002
9614257901		M5 sensor adapter for IY5036 and IY5046 on Sample Valve (Open valve position only) size 25	


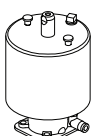
Product code:: 5411


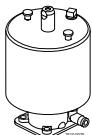
Positioners for single acting actuators only.
 LKLA-T $\varnothing 3.35$ (except LKLA-T $\varnothing 3.35$ NO, A/A and $\varnothing 6.24$)
 7000 actuators (except Long strokes actuators)

Item No.	LLP USD	Description	Dimensions (in)		Complete positioner for
			A	B	
9611995266 9611995268		SSV 8694 without display SSV 8692 with display	$\varnothing 3.58$	6.46	
LKLA-T / SBV					
9611995267 9611995269		LKLA-T / SBV prepared for ThinkTop® 8694 without display LKLA-T / SBV prepared for ThinkTop® 8692 with display	$\varnothing 3.58$	6.46	

Note: When using this positioner on a LKB butterfly valve, it is important to remember that this only can be used for simple regulation applications.
 Alfa Laval does not have capacity diagram available.

Product code: 5417

Diaphragm Actuator Stainless Steel/Stainless Steel						Positioner 8692 and 8694				
Item No	LLP USD	Function	Valve	Group	Pilot valve	H4.69 x W3.58	Regulating position	Air fittings	Interface	SS/HP
9614462501		Single Acting NC NO	DN 8	1	1		With Display 0-100%	ø6 mm and 1/4"	Input 4-20 mA Analogue	
9614462502			DN 10							
9614462503			DN 15							
9614462504			DN 20	2						
			DN 25							
			DN 40							
9614462505			DN 50	3						
			DN 65							
9614462506			DN 80	4						
			DN 100							
9614462505			DN 8	1						
			DN 10							
			DN 15							
9614462506			DN 20	2						
		DN 25								
		DN 40								
9614462507		DN 50	3							
		DN 65								
9614462508		DN 80	4							
		DN 100								

Diaphragm Actuator Stainless steel/Stainless Steel						Positioner 8692 ATEX version *				
Item No	LLP USD	Function	Valve	Group	Pilot valve	H4.69 x W3.58	Regulating position	Air fittings	Interface	SS/HP
8010004258		Single Acting NC / NO	DN08	1	1		With Display 0-100%	ø6 mm and 1/4"	Input 4-20 mA Analogue	
8010004259			DN10							
8010004260			DN15							
8010004261			DN20	2						
			DN25							
			DN40							
8010004261			DN50	3						
			DN65							
8010004261			DN80	4						
			DN100							

* Ignition protection:

II 3D Ex tc IIC T135 °C Dc

II 3G Ex nA IIC T4 Gc

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Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information.

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