C-TOP S

Control Unit

APPLICATION

The C-TOP S control unit can adapt to any INOXPA actuator, and both efficiently and individually automate pneumatically driven process valves. These include: butterfly, ball, diaphragm and single or double seat valves.

OPERATING PRINCIPLE

The control unit contains a linear detection electronic module comprised of several hall sensors.
A PLC systems sends signals to the solenoid valves through the unit's electronic module to control and operate the main valve. At the same time, the electronic module sends return signals to the PLC to indicate the valve's current position.
The C-TOP S is configured using the electronic module's buttons.
A specific colour for each valve position lights up to indicate the valve's current status at all times. The unit's coloured lights can be configured using the DIP switches that are also found on the electronic module.

TECHNICAL SPECIFICATIONS

Materials	
Plastic parts	PA6
Screws	A2
Seals	NBR
Air fittings	nickel-plated brass
Environment	
Outdoor use	protected areas
Storage temperature	-20ºC to 50ºC
Environment temperature	-5ºC to 50ºC
Relative humidity	80% until 31ºC reducing until 50% to 40ºC
Maximum height	2000 m
Overvoltage category	II
Degree of pollution	2
Degree of protection	IP65/67
Control head	
Working pressure	3 - 7 bar
Stroke	≤ 80 mm
Maximum shaft diameter	22 mm

Assembly type	screws
Fluid	filtered compressed air per ISO 8573-1:2010
Measuring principle	Hall sensor without contact
Measured quantity	position
Accuracy	± 0,8 mm
Visual indicators	LED
Type of solenoid valves	3/2 way, normally closed with manual locking
Compressed air supply (1)	screwed adapter G1/8, QS-8 (for a Ø 8 mm pipe)
Service ports (A1...A3)	screwed adapter G1/8, QS-6 (for a Ø 6 mm pipe)
Exhaust (3)	screwed silencer G1/8
Maximum line length	30 m

Power consumption

C- TOP S		0 solenoid valves	1 solenoid valve	2 solenoid valves	3 solenoid valves
Power [W]	24V DC	1.3	1.7	2.0	2.4
	AS-I	-			

DESIGN AND FEATURES

The C-TOP S installs easily onto the top of the valve's actuator.
AUTOTUNE mode enables quick and simple configuration.
Line detection using hall sensors.
Use of up to three solenoid valves possible. One solenoid valve is required for single-acting control valves, two for double-acting control valves, and three for mixproof valves.
External sensor connection possible.
360° view of lights indicating valve status.
Different coloured lights to indicate valve status:

White

Indicates the start and end of the different operating modes

Pink

Indicates transitions

Red

Indicates an electronic fault with the device

Personalisation of the visual indicator colours for each valve position using DIP switches possible, based on the following table:

DIP 1	DIP 2	DIP 3	Output 1	Output 2	Output 3	Output 4
0	0	0	blue	green	yellow	orange
1	0	0	green	blue	yellow	orange
0	1	0	green	yellow	blue	orange
1	1	0	blue	yellow	green	orange
0	0	1	yellow	blue	green	orange
1	0	1	yellow	green	blue	orange
0	1	1	blue	green	orange	yellow
1	1	1	green	blue	orange	yellow

Blue

Green

Yellow

Orange

24V DC DIGITAL COMMUNICATION

Voltage supply	24 V DC ± 10%
Outputs	PNP normally open
Terminal	push-in type, nominal cable section from 0,2 to 1.5 mm² (22AWG to 16AWG)
Main input	M16 stuffing gland x 1.5 (4 to 10 mm diameter cable)
External sensor input	M16 plug x 1.5

Electrical connections

Version for up to 1 solenoid valve and 3 outputs

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Marking		Description
O	3	output position 3
	2	output position 2
	1	output position 1
I	1	input 1 (solenoid valve 1)
-		0V (GND)
+		24V DC

Version for up to 3 solenoid valves and 4 outputs

10.426.32.0030

Marking		Description
O	4	output position 4
	3	output position 3
	2	output position 2
	1	output position 1
Ext -		0V (GND) external sensor
Ext +		24V DC external sensor
Ext S		external sensor signal
I	3	input 3 (solenoid valve 3)
	2	input 2 (solenoid valve 2)
	1	input 1 (solenoid valve 1)
-		0V (GND)
+		24V DC

AS-interface COMMUNICATION

Voltage supply	AS-i cable from 29.5 to 31.6 V DC
Terminal	Push-in type, nominal cable section from 0.2 to 1.5 mm² (22AWG to 16AWG)
Main input	M16 stuffing gland x 1.5 with a 2 m cable and a 4 pole male M12 connector
External sensor input	M16 plug x 1.5
Version	v3.0 (A/B addressing and up to 62 nodes)
Slave profile	7A77

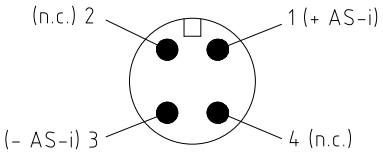
Bits configuration

AS-i data bit	D3	D2	D1	D0
Master input	position 4	position 3	position 2	position 1
Master output	not configured	solenoid valve 3	solenoid valve 2	solenoid valve 1

Electrical connections

10.426.32.0031

Marking	Description
Ext -	0V (GND) external sensor
Ext +	24V DC external sensor
Ext S	external sensor signal
-	- AS-i (pin 3)
+	+ AS-i (pin 1)



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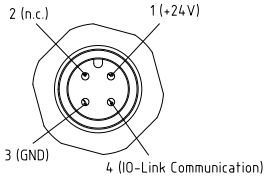
IO-Link COMMUNICATION

Voltage supply	24 V DC ± 10%
Outputs	PNP normally open
Terminal	push-in type, nominal cable section from 0,2 to 1.5 mm² (22AWG to 16AWG)
Main input	M12 4-pole male connector
External sensor input	M16 plug x 1.5
Additional functionality	device update via the IO-Link protocol

Electrical connections

10.426.32.0035

Signal		Description
Ext	-	0V (GND) external sensor
	+	24V DC external sensor
	S	external sensor input
IO-Link		IO-Link communication
-		0V (GND)
+		24V DC



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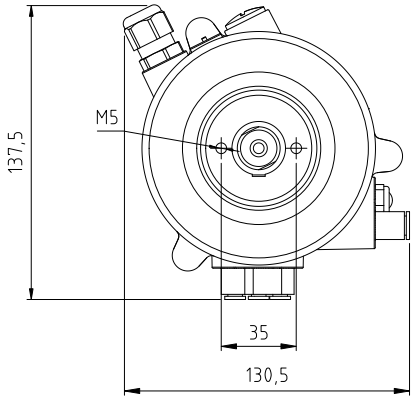
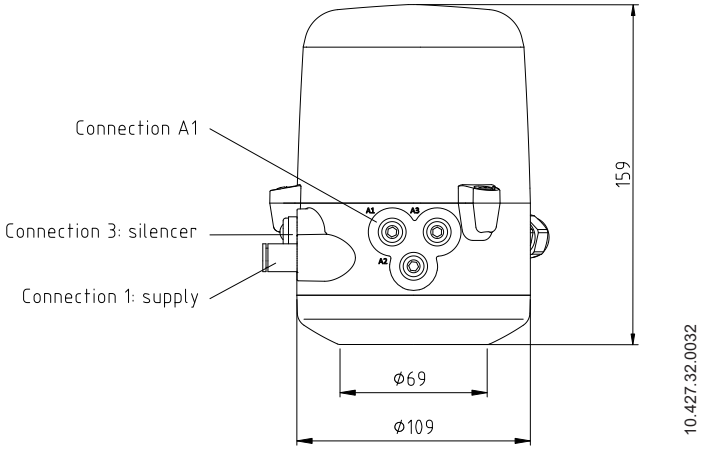
DIMENSIONS





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