

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 | -20°C to 50°C |
| Environment temperature | -5°C to 50°C |
| Relative humidity | 80% until 31°C reducing until 50% to 40°C |
| 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 AS-I | 1.3 - | 1.7 | 2.0 2.4 |

DESIGN AND FEATURES

The C-TOP S installs easily onto the top of the valve's actuator.

AUTOTUNE mode enables quick and simple configuration.

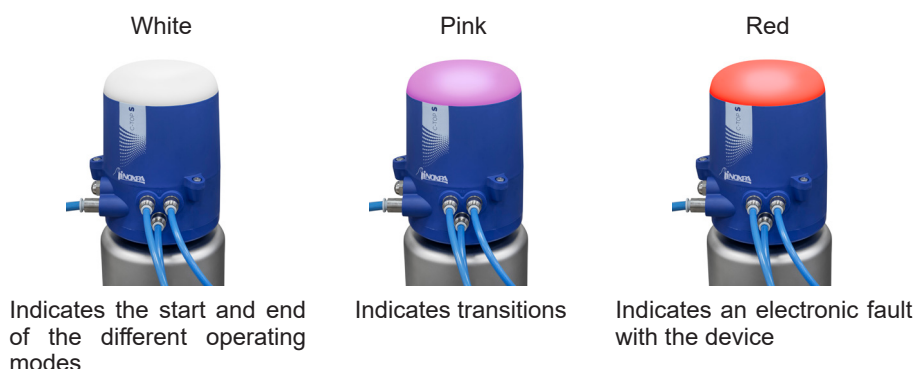
Line detection using hall sensors.

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:



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 |

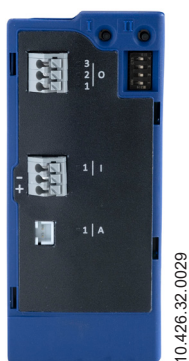


24V DC DIGITAL COMMUNICATION

| | |
|-----------------------|--|
| Voltage supply | 24 V DC \pm 10% |
| Outputs | PNP normally open |
| Terminal | push-in type, nominal cable section from 0,2 to 1.5 mm ² (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



| Marking | Description |
|---------|------------------------------|
| | 3 output position 3 |
| O | 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



| Marking | Description |
|---------|------------------------------|
| | 4 output position 4 |
| O | 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 |
| | 3 input 3 (solenoid valve 3) |
| I | 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 mm ² (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

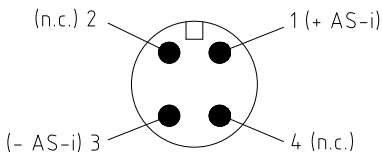
| AS-i data bit | D3 | D2 | D1 | D0 |
|---------------|----------------|------------------|------------------|------------------|
| Master input | position 4 | position 3 | position 2 | position 1 |
| Master output | not configured | solenoid valve 3 | solenoid valve 2 | solenoid valve 1 |

Electrical connections



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| 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) |

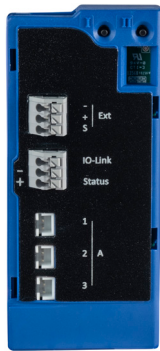


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IO-Link COMMUNICATION

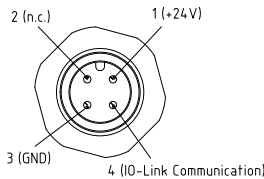
| | |
|--------------------------|--|
| Voltage supply | 24 V DC \pm 10% |
| Outputs | PNP normally open |
| Terminal | push-in type, nominal cable section from 0,2 to 1.5 mm ² (22AWG to 16AWG) |
| Main input | M12 4-pole male connector |
| External sensor input | M16 plug x 1.5 |
| Additional functionality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

Electrical connections



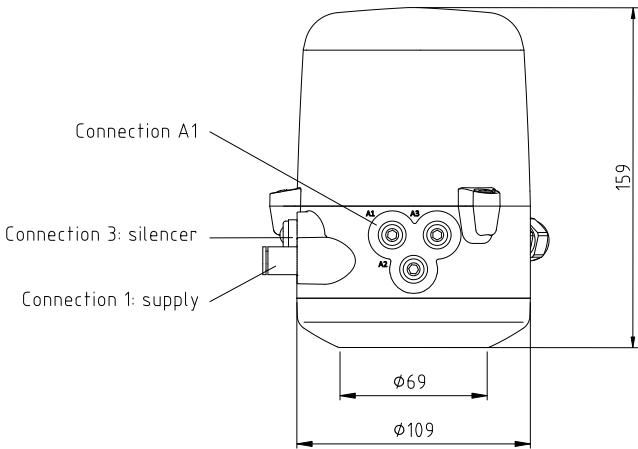
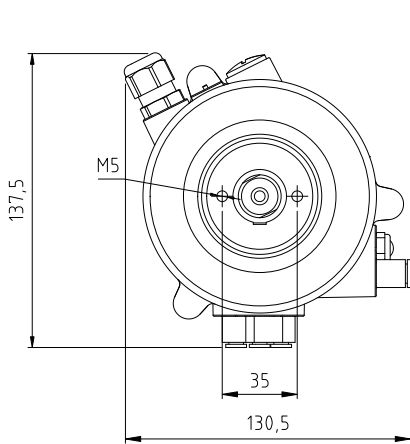
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| Signal | Description |
|---------|--------------------------|
| - | 0V (GND) external sensor |
| Ext + | 24V DC external sensor |
| S | external sensor input |
| IO-Link | IO-Link communication |
| - | 0V (GND) |
| + | 24V DC |



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DIMENSIONS



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