

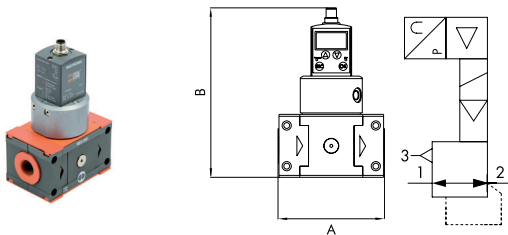
# Proportional precision pressure regulator

REGTRONIC 300 series

**MAX** |||

Art. No. 153076

Type No. 4402313



Exemplary illustration

Proportional precision pressure regulators series REGTRONIC have the job of precisely regulating the pressure in a system, the variables depending on the input command. Remote control regulators are controlled by means of an M12x1 cable and connector and can have Volt, mA, RS232 control or via IO-Link. Regulators with a display can be controlled via a cable or directly using the keys below the display. Pressure control takes place in a 'closed loop' with an electronic precision pressure sensor that measures the downstream pressure, a control system that compares it with the desired pressure, and two mini solenoid valves that adjust the pressure to reach the target value.

## Advantages:

- All analogue versions come with the comprehensive, simple and intuitive "MWRegtronic" programming and reading software. This software can be used to set the parameters. It can be downloaded from the website [www.metalwork.eu](http://www.metalwork.eu). To connect the PC to REGTRONIC, use the PC connection cable article no. 153061.
- The version with display can show a wide range of information and diagnostics. The user interface with the display, LEDs and buttons are all on one side.
- The wireless versions can communicate with Ethernet networks via the MQTT protocol and with mobile devices via Bluetooth® using the dedicated 'Metal Work RegUp' app.
- The REGTRONIC 300 / REGTRONIC 400 series can be combined at will with the SKILLAIR FRL units.

ATEX version on request!

## Technical data

|                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|
| Series                | REGTRONIC 300                                                                       |
| Version               | IO-Link                                                                             |
| Analogue output       | without                                                                             |
| Display               | without                                                                             |
| Input signal          | IO-Link                                                                             |
| Thread                | G 1/2 IT                                                                            |
| Electrical connection | M12 male connector, 5-pin                                                           |
| Medium                | filtered, unlubricated compressed air, max. particle size 10 µm, free of condensate |
| Min. input pressure   | pressure to be regulated +1 bar                                                     |

## Technical data

|                             |                                             |
|-----------------------------|---------------------------------------------|
| Max. input pressure         | 11 bar                                      |
| Control range               | 0,05 - 10 bar                               |
| Temperature range           | 0 to 50 °C                                  |
| Flow rate measurement 1     | flow rate at 6.3 bar and $\Delta p$ 0.5 bar |
| Flow rate 1                 | 4500 NI/min                                 |
| Flow rate measurement 2     | flow rate at 6,3 bar and $\Delta p$ 1 bar   |
| Flow rate 2                 | 7000 NI/min                                 |
| Hysteresis                  | $\pm 0,2$ % (full scale)                    |
| Repeatability               | $\pm 0.2$ % (full scale)                    |
| Sensitivity/dead-band       | adjustment range: 10 - 300 mbar             |
| Temperature characteristics | max. 2 mbar / °C                            |
| Supply voltage range        | 18 to 30 V DC                               |
| Operating voltage min.      | 18 V DC                                     |
| Operating voltage max.      | 30 V DC                                     |
| Max. admissible voltage     | 32 V DC*                                    |
| Current consumption         | max. 150 mA at 18 V DC                      |
| WiFi                        | without                                     |
| Compatible with app         | no                                          |
| Mounting position           | any                                         |
| Housing                     | aluminium                                   |
| Protection IP               | IP 65                                       |
| A                           | 110.0 mm                                    |
| B                           | 174.5 mm                                    |

\*IMPORTANT! Voltages above 32 V DC will cause irreparable damage to the system.

## Commercial data

|                         |                  |
|-------------------------|------------------|
| Customs tariff number   | 84811099         |
| Country of origin       | IT               |
| eCl@ss 5.1.4            | 27292301         |
| eCl@ss 9.0              | 27292301         |
| UNSPSC_Code_v190501     | 40141603         |
| UNSPSC_CodeDesc_v190501 | Pneumatic valves |

## PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

Proportional pressure regulators series REGTRONIC have the job of precisely regulating the pressure in a system, the variables depending on the input command. Remote control regulators are controlled by means of an M12x1 cable and connector and can have Volt, mA, RS232 control or via IO-Link. Regulators with a display can be controlled via a cable or directly using the keys below the display. The pressure value and a series of information and diagnostics are visible at all times on the graphic display. The user-display interface, LEDs and buttons are all on one side. The programming and reading software is comprehensive, simple and intuitive. Pressure control takes place in a "closed-loop" with an electronic precision pressure sensor that measures the downstream pressure, a control system that compares it with the desired pressure, and two mini solenoid valves that adjust the pressure to reach the target value. Through the dedicated "Metal Work RegUp" App, the wireless versions can communicate with Ethernet networks (via MQTT protocol) and mobile devices (smartphones and tablets) via Bluetooth®. Through this App it is possible to view and modify the regulated pressure in real time, set all the operating parameters and view the pressure trend graphs.

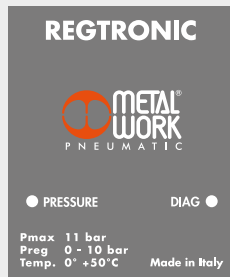

**UNITS**
**PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES**

| TECHNICAL DATA                                         |                        | REGTRONIC                                                                                                                                                                                                                                                                                                                                                                  |      |      | REGTRONIC<br>NEW DEAL |      | REGTRONIC<br>300 |       |      | REGTRONIC<br>400 |        |        |    |
|--------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|------------------|-------|------|------------------|--------|--------|----|
| Threaded port                                          |                        | M5                                                                                                                                                                                                                                                                                                                                                                         | 1/8" | 1/4" | 3/4"                  | 1"   | 1/2"             | 3/4"  | 1"   | 1"               | 1 1/4" | 1 1/2" | 2" |
| Fluid                                                  |                        | Filtered, unlubricated air.<br>The air must be filtered at least 10 µm and without condensation.                                                                                                                                                                                                                                                                           |      |      |                       |      |                  |       |      |                  |        |        |    |
| MIN inlet pressure                                     | bar                    | Regulation pressure + 1 bar                                                                                                                                                                                                                                                                                                                                                |      |      |                       |      |                  |       |      |                  |        |        |    |
| MAX inlet pressure                                     | bar                    | 11                                                                                                                                                                                                                                                                                                                                                                         |      |      |                       |      |                  |       |      |                  |        |        |    |
| Temperature range                                      | °C                     | from 0 to 50                                                                                                                                                                                                                                                                                                                                                               |      |      |                       |      |                  |       |      |                  |        |        |    |
| Pressure regulation range                              | bar                    | from 0.05 to 10 (settable full scale and minimum pressure)                                                                                                                                                                                                                                                                                                                 |      |      |                       |      |                  |       |      |                  |        |        |    |
| Flow rate at 6.3 bar ΔP 0.5                            | l/min                  | 10                                                                                                                                                                                                                                                                                                                                                                         | 1300 | 1500 | 10000                 | 4500 | 18000            | 20000 |      |                  |        |        |    |
| Flow rate at 6.3 bar ΔP 1                              | l/min                  | 10                                                                                                                                                                                                                                                                                                                                                                         | 1450 | 1700 | 13000                 | 7000 | -                | -     |      |                  |        |        |    |
| Exhaust flow rate at 6.3 bar with 0.1 bar overpressure | l/min                  | 2                                                                                                                                                                                                                                                                                                                                                                          | 600  | 1300 | 1800                  | 250  | 400              | 400   |      |                  |        |        |    |
| Exhaust flow rate at 6.3 bar with 0.5 bar overpressure | l/min                  | 9                                                                                                                                                                                                                                                                                                                                                                          | 1000 | 1500 | 2000                  | 500  | 850              | 850   |      |                  |        |        |    |
| Response time with ΔP = 1 bar                          | Volume [cc]            | 100                                                                                                                                                                                                                                                                                                                                                                        | 100  | 1000 | 100                   | 1000 | 1000             | 1000  | 1000 | 1000             |        |        |    |
| from 6 to 7 bar                                        | s                      | 0.5                                                                                                                                                                                                                                                                                                                                                                        | 0.1  | 0.15 | 0.1                   | 0.15 | 0.27             | 0.25  | 0.2  | 0.2              |        |        |    |
| from 7 to 6 bar                                        | s                      | 0.55                                                                                                                                                                                                                                                                                                                                                                       | 0.1  | 0.15 | 0.1                   | 0.15 | 0.27             | 0.33  | 0.35 | 0.35             |        |        |    |
| Weight                                                 | kg                     | 0.2                                                                                                                                                                                                                                                                                                                                                                        | 0.38 | 0.38 | 1.3                   | 1.5  | 5                | 5.8   |      |                  |        |        |    |
| Class of protection                                    |                        | IP 65                                                                                                                                                                                                                                                                                                                                                                      |      |      |                       |      |                  |       |      |                  |        |        |    |
| Supply voltage range IO-Link version                   | VDC                    | from 18 to 30                                                                                                                                                                                                                                                                                                                                                              |      |      |                       |      |                  |       |      |                  |        |        |    |
| Current absorption                                     |                        | Max 150 mA at 18VDC                                                                                                                                                                                                                                                                                                                                                        |      |      |                       |      |                  |       |      |                  |        |        |    |
| Supply voltage range analog version                    | VDC                    | 12 - 10% 24 +30%                                                                                                                                                                                                                                                                                                                                                           |      |      |                       |      |                  |       |      |                  |        |        |    |
| Minimum operating voltage                              | VDC                    | 10.8                                                                                                                                                                                                                                                                                                                                                                       |      |      |                       |      |                  |       |      |                  |        |        |    |
| Maximum operating voltage                              | VDC                    | 31.2                                                                                                                                                                                                                                                                                                                                                                       |      |      |                       |      |                  |       |      |                  |        |        |    |
| Maximum admissible voltage                             | VDC                    | 32 *                                                                                                                                                                                                                                                                                                                                                                       |      |      |                       |      |                  |       |      |                  |        |        |    |
| Current absorption                                     |                        | max 220 mA at 12VDC                                                                                                                                                                                                                                                                                                                                                        |      |      |                       |      |                  |       |      |                  |        |        |    |
| Input signal (input impedance)                         | Voltage                | 0 to 5 VDC, 0 to 10 VDC (approx. 6.3 KΩ)                                                                                                                                                                                                                                                                                                                                   |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Current                | 4 to 20 mA (approx. 100 Ω)                                                                                                                                                                                                                                                                                                                                                 |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Serial ports           | RS 232                                                                                                                                                                                                                                                                                                                                                                     |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Manual                 | Keypad                                                                                                                                                                                                                                                                                                                                                                     |      |      |                       |      |                  |       |      |                  |        |        |    |
| Output signal                                          | Analog version voltage | 0 to 10 VDC (1 VDC = 1 bar) - 1 mA max                                                                                                                                                                                                                                                                                                                                     |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Analog version current | 4 to 20 mA (4 mA = 0 bar, 20 mA = 10 bar)                                                                                                                                                                                                                                                                                                                                  |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Digital                | PNP open collector output: max 24VDC 60 mA<br>NPN open collector output: max 24VDC 60 mA                                                                                                                                                                                                                                                                                   |      |      |                       |      |                  |       |      |                  |        |        |    |
| Hysteresis                                             |                        | ± 0.2% (Full scale)                                                                                                                                                                                                                                                                                                                                                        |      |      |                       |      |                  |       |      |                  |        |        |    |
| Repeatability                                          |                        | ± 0.2% (Full scale)                                                                                                                                                                                                                                                                                                                                                        |      |      |                       |      |                  |       |      |                  |        |        |    |
| Sensitivity/Dead-band                                  |                        | setting range 10 to 300 mbar                                                                                                                                                                                                                                                                                                                                               |      |      |                       |      |                  |       |      |                  |        |        |    |
| Output pressure (display and keyboard version)         | Accuracy               | ± 0.3% (Full scale)                                                                                                                                                                                                                                                                                                                                                        |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Unit of measurement    | bar, MPa, psi                                                                                                                                                                                                                                                                                                                                                              |      |      |                       |      |                  |       |      |                  |        |        |    |
|                                                        | Minimum resolution     | 0.01 bar - 0.001 MPa - 0.01 psi                                                                                                                                                                                                                                                                                                                                            |      |      |                       |      |                  |       |      |                  |        |        |    |
| Analog output accuracy                                 |                        | ± 0.1% of the reading                                                                                                                                                                                                                                                                                                                                                      |      |      |                       |      |                  |       |      |                  |        |        |    |
| Temperature characteristics                            |                        | max 2 mbar / °C                                                                                                                                                                                                                                                                                                                                                            |      |      |                       |      |                  |       |      |                  |        |        |    |
| Installation position                                  |                        | In any position                                                                                                                                                                                                                                                                                                                                                            |      |      |                       |      |                  |       |      |                  |        |        |    |
| Notes                                                  |                        | The features shown refer to the static condition only. With air consumption on the output side, the pressure may vary.<br>On all analog versions you can set the parameters using the software "MWRegtronic" downloadable from the website <a href="http://www.metalwork.eu">www.metalwork.eu</a> ; to connect the PC to Regtronic you can use the cable code W0970513019. |      |      |                       |      |                  |       |      |                  |        |        |    |

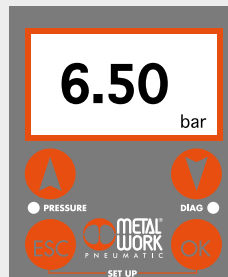
\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.



## REMOTE-CONTROL VERSION



## DISPLAY AND KEYBOARD VERSION



## PROGRAMMABLE AND FLEXIBLE

Setting options:

- LANGUAGE
- UNIT OF MEASUREMENT
- TYPE OF INPUT
- TYPE OF DIGITAL OUTPUT
- DEAD-BAND
- FULL SCALE
- MINIMUM PRESSURE

The remote-control version of the Regtronic has two diagnostic LEDs.

The display version also has buttons for entering the various parameters.

## PRECISION

### Linearity

± 0.5 % (full scale)

### Hysteresis

± 0.2 % (full scale)

### Repeatability

± 0.2 % (full scale)

### Sensitivity

range 10 to 300 mbar

## IO-Link CONNECTOR 5-PIN M12x1

IO-Link



| Pin | Signal | Description of Class A Port | Lead colour |
|-----|--------|-----------------------------|-------------|
| 1   | L+     | +24 VDC power supply        | Brown       |
| 2   | NC     | /                           | White       |
| 3   | L-     | 0 VDC power supply          | Blue        |
| 4   | C/Q    | IO-Link communication       | Black       |
| 5   | NC     | /                           | Gray        |

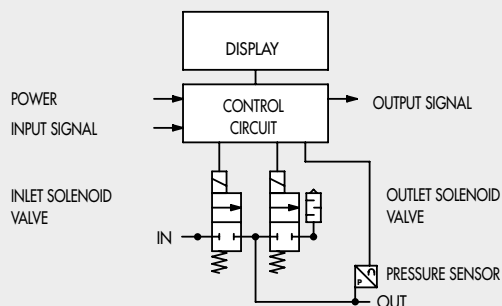
## ANALOG CONNECTOR 8-PIN M12x1



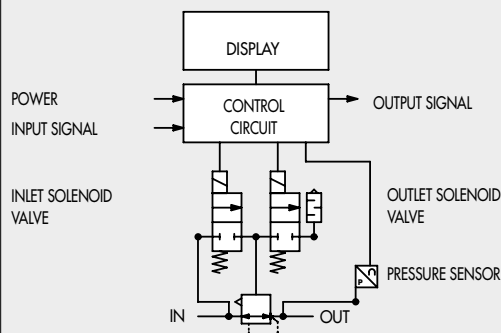
| Pin | Signal       | Description                                               | Lead colour |
|-----|--------------|-----------------------------------------------------------|-------------|
| 1   | TX           | RS232                                                     | White       |
| 2   | RX           | RS232                                                     | Brown       |
| 3   | Pressure set | 0 to 10 VDC / 0 to 5 VDC / 4 to 20 mA                     | Green       |
| 4   | Digital out  | NPN                                                       | Yellow      |
| 5   | Analog out   | Voltage version 0 to 10 VDC<br>Current version 4 to 20 mA | Gray        |
| 6   | Digital out  | PNP                                                       | Pink        |
| 7   | 0 VDC        | Power supply                                              | Blue        |
| 8   | + VDC        | Power supply                                              | Red         |

## FUNCTION DIAGRAM

### REGTRONIC M5



### REGTRONIC 1/8" - 1/4" - SK300 - SK400 - NEW DEAL



UNITS

PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

## REGTRONIC 300

### COMPONENTS



- ① BODY: tecnopolymer
- ② END PLATE: zamak
- ③ STEM: OT58 brass
- ④ UPPER CUP: aluminium
- ⑤ PISTON: OT58 brass
- ⑥ CUP: aluminium
- ⑦ PRESSURE SENSOR
- ⑧ SOLENOID VALVE: 10 mm series PLT-10
- ⑨ SHELL: tecnopolymer
- ⑩ CONNECTOR M12
- ⑪ ELECTRONIC BOARDS
- ⑫ GASKET: NBR
- ⑬ VALVE WITH NBR VULCANIZED GASKET
- ⑭ VALVE SPRING: stainless steel
- ⑮ LOWER CUP: tecnopolymer



### FLOW CHARTS



A = 2.5 bar    B = 4 bar    C = 6.3 bar    Pm = 10 bar

### DIMENSIONS



| G    | A   |
|------|-----|
| 1/2" | 110 |
| 3/4" | 110 |
| 1"   | 112 |

UNITS  
REGTRONIC 300

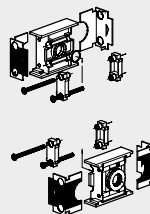
### ORDERING CODES

| Code     | Description                                                            |
|----------|------------------------------------------------------------------------|
| 4402012A | REGTRONIC 300 with display and keyboard without end plates OUT 0-10 V  |
| 4402013A | REGTRONIC 300 remote control without end plates OUT 0-10 V             |
| 4402012  | REGTRONIC 300 1/2 with display and keyboard OUT 0-10 V                 |
| 4402013  | REGTRONIC 300 1/2 remote control OUT 0-10 V                            |
| 4502012  | REGTRONIC 300 3/4 with display and keyboard OUT 0-10 V                 |
| 4502013  | REGTRONIC 300 3/4 remote control OUT 0-10 V                            |
| 4602012  | REGTRONIC 300 1 with display and keyboard OUT 0-10 V                   |
| 4602013  | REGTRONIC 300 1 remote control OUT 0-10 V                              |
| 4402412A | REGTRONIC 300 with display and keyboard without end plates OUT 4-20 mA |
| 4402413A | REGTRONIC 300 remote control without end plates OUT 4-20 mA            |
| 4402412  | REGTRONIC 300 1/2 with display and keyboard OUT 4-20 mA                |
| 4402413  | REGTRONIC 300 1/2 remote control OUT 4-20 mA                           |
| 4502412  | REGTRONIC 300 3/4 with display and keyboard OUT 4-20 mA                |
| 4502413  | REGTRONIC 300 3/4 remote control OUT 4-20 mA                           |
| 4602412  | REGTRONIC 300 1 with display and keyboard OUT 4-20 mA                  |
| 4602413  | REGTRONIC 300 1 remote control OUT 4-20 mA                             |

|          |                                                                    |
|----------|--------------------------------------------------------------------|
| 4402312A | REGTRONIC IO-Link 300 with display and keyboard without end plates |
| 4402313A | REGTRONIC IO-Link 300 remote control without end plates            |
| 4402312  | REGTRONIC IO-Link 300 1/2 with display and keyboard                |
| 4402313  | REGTRONIC IO-Link 300 1/2 remote control                           |
| 4502312  | REGTRONIC IO-Link 300 3/4 with display and keyboard                |
| 4502313  | REGTRONIC IO-Link 300 3/4 remote control                           |
| 4602312  | REGTRONIC IO-Link 300 1 with display and keyboard                  |
| 4602313  | REGTRONIC IO-Link 300 1 remote control                             |

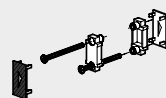
### ACCESSORIES

#### INPUT/OUTPUT END PLATE KIT FOR SKILLAIR



| Code    | Description                   |
|---------|-------------------------------|
| 9430701 | IN/OUT end plates kit 300 1/2 |
| 9530901 | IN/OUT end plates kit 300 3/4 |
| 9531001 | IN/OUT end plates kit 300 1   |

#### CONNECTOR KIT FOR SKILLAIR CODE A

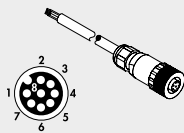


| Code    | Description       |
|---------|-------------------|
| 9430301 | Connector kit 300 |

## ACCESSORIES REGTRONIC ANALOG VERSION

## IO-Link VERSION

### CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, STRAIGHT



**Code**  
**W0970513010**

**Description**  
Connector M12x1, 8-pin, A-coded, female, straight, with cable L = 5 m

Note: can only be used for analog version

| Pin | Cable color |
|-----|-------------|
| 1   | White       |
| 2   | Brown       |
| 3   | Green       |
| 4   | Yellow      |
| 5   | Grey        |
| 6   | Pink        |
| 7   | Blue        |
| 8   | Red         |

### CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, 90°, WITH CABLE



**Code**  
**W0970513011**

**Description**  
Connector M12x1, 8-pin, A-coded, female, 90°, with cable L = 5 m

Note: can only be used for analog version

| Pin | Cable color |
|-----|-------------|
| 1   | White       |
| 2   | Brown       |
| 3   | Green       |
| 4   | Yellow      |
| 5   | Grey        |
| 6   | Pink        |
| 7   | Blue        |
| 8   | Red         |

### CONFIGURATION CABLE



**Code**  
**W0970513019**

**Description**  
Configuration cable Regtronic

The cable consists of:

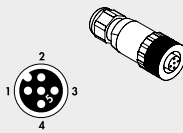
- M12 8-PIN female connector to be connected to Regtronic
- RS232 serial connector to be connected to PC
- 2 wires to supply 24VDC power

The package also includes a RS232-USB adapter

Note: can only be used for analog version

### NOTES

### CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT



**Code**  
**W0970513001**

**Description**  
Connector M12x1, 5-pin, A-coded, female, straight

Note: can only be used for version  IO-Link

### CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT



**Code**  
**W0970513002**

**Description**  
Connector M12x1, 5-pin, A-coded, female, straight, with cable L = 5 m

Note: can only be used for version  IO-Link

| Pin | Cable color |
|-----|-------------|
| 1   | Brown       |
| 2   | White       |
| 3   | Blue        |
| 4   | Black       |
| 5   | Gray        |

### CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°



**Code**  
**W0970513003**

**Description**  
Connector M12x1, 5-pin, A-coded, female, 90°

Note: can only be used for version  IO-Link

### CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°, WITH CABLE



**Code**  
**W0970513004**

**Description**  
Connector M12x1, 5-pin, A-coded, female, 90°, with cable L = 5 m

Note: can only be used for version  IO-Link

| Pin | Cable color |
|-----|-------------|
| 1   | Brown       |
| 2   | White       |
| 3   | Blue        |
| 4   | Black       |
| 5   | Gray        |

**UNITS**
**ACCESSORIES REGTRONIC**

## Accessories

|                                                                                                                      | Art. No. | Type No.    |
|----------------------------------------------------------------------------------------------------------------------|----------|-------------|
| IN end plate and OUT end plate, for proportional prec. pressure regulator series REGTRONIC 300 / SKILLAIR 300, G 3/4 | 153053   | 9530901     |
| IN end plate and OUT end plate, for proportional prec. pressure regulator series REGTRONIC 300 / SKILLAIR 300, G 1   | 153054   | 9531001     |
| Straight socket M12 x 1 mm, 5-pin, for electrical connection cable                                                   | 148191   | W0970513001 |
| Electrical connection cable with straight socket and 5 m cable, 5-wire, for service unit »ONE«                       | 101132   | 533.901     |
| 90° angle socket M12 x 1 mm, 5-pin, for electrical connection cable                                                  | 148239   | W0970513003 |
| Electrical connection cable with 90° angle socket and 5 m cable, 5-wire, for service unit »ONE«                      | 101133   | 533.902     |

## Spareparts

|                                                                                                                      | Art. No. | Type No. |
|----------------------------------------------------------------------------------------------------------------------|----------|----------|
| IN end plate and OUT end plate, for proportional prec. pressure regulator series REGTRONIC 300 / SKILLAIR 300, G 1/2 | 153052   | 9430701  |