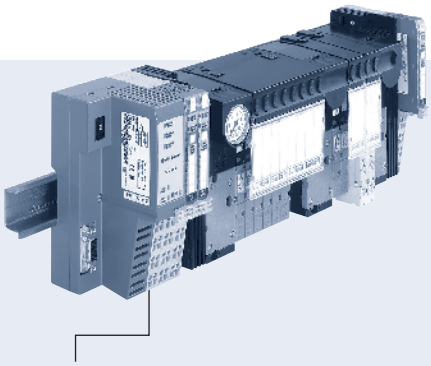
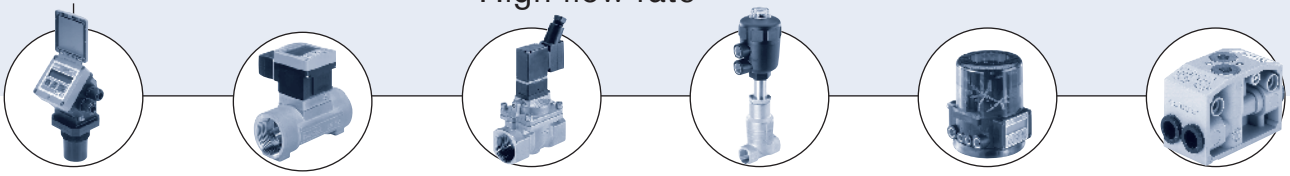
bürkert
FLUID CONTROL SYSTEMS

# Remote Process Actuation Control System AirLINE - Rockwell 1734 Point I/O System



- Fully compatible with Rockwell 1734 Point I/O System
- Combination of Fieldbus, pilot valves and I/O modules
- High flexibility
- Compact design
- High flow rate

Type 8644 can be combined with...



**Type 8175**
Sensors

**Type 8032**
Switches

**Type 6212**
Solenoid valves

**Type 2012**
Process valves

**Type 8630**
Valve controllers

**Type 0498**
Double pilot controlled check valve

The AirLINE System integrates high performance solenoid pilot valves, remote electronic I/O and fieldbus communication into a process actuation and control system that is both compact and extremely flexible. Its modular design allows fully customized, pre-mounted and tested solutions to exactly meet all application needs including the integration of a local Mini PLC. Due to the full electronic and mechanical integration, the valve block can be added without the need of any tools or wiring.

| Specifications | Pilot valve type | |
|---|---|---|
| | 0460, 6524, 6525 | 0461, 6526, 6527 |
| **Mounting dimensions** | 11 mm | 16.5 mm |
| **Circuit functions/ways** | C (3/2)<br>D (3/2)<br>H (5/2)<br>H (5/2) impulse<br>L (5/3) in middle position all ports closed<br>N (5/3) in middle position all ports vented | C (3/2)<br>D (3/2)<br>H (5/2)<br>H (5/2) impulse<br>L (5/3) in middle position all ports open<br>N (5/3) in middle position all ports vented |
| **Flow rate** | 300 l/min (200 l/min for functions H impulse, L and N) | 700 l/min (500 l/min for functions H impulse, L and N) |
| **Pressure range** | Vac. up to 145 PSI | Vac. up to 145 PSI |
| **Module types** | 2x and 8x (optional integrated check valves and p-shut-off-valve) | 2x and 4x (optional integrated check valves)<br>Combination of 11 mm modules (3 valves) and 16.5 mm modules is possible |
| **Max. number of modules** | 13 | 13 |
| **Max. number of valves functionalities** | 64 (by use of Type 0460 & Type 6524 2 x 3/2-way valve: 32) | 32 (by use of Type 0461: 24) |
| **Pneumatic intermediate supply module** | necessary after 24 valve functions;<br>with 2 x 3/2-way valve:<br>necessary after 16 valve functions | necessary after 16 valve functions |

to be continued on page 2

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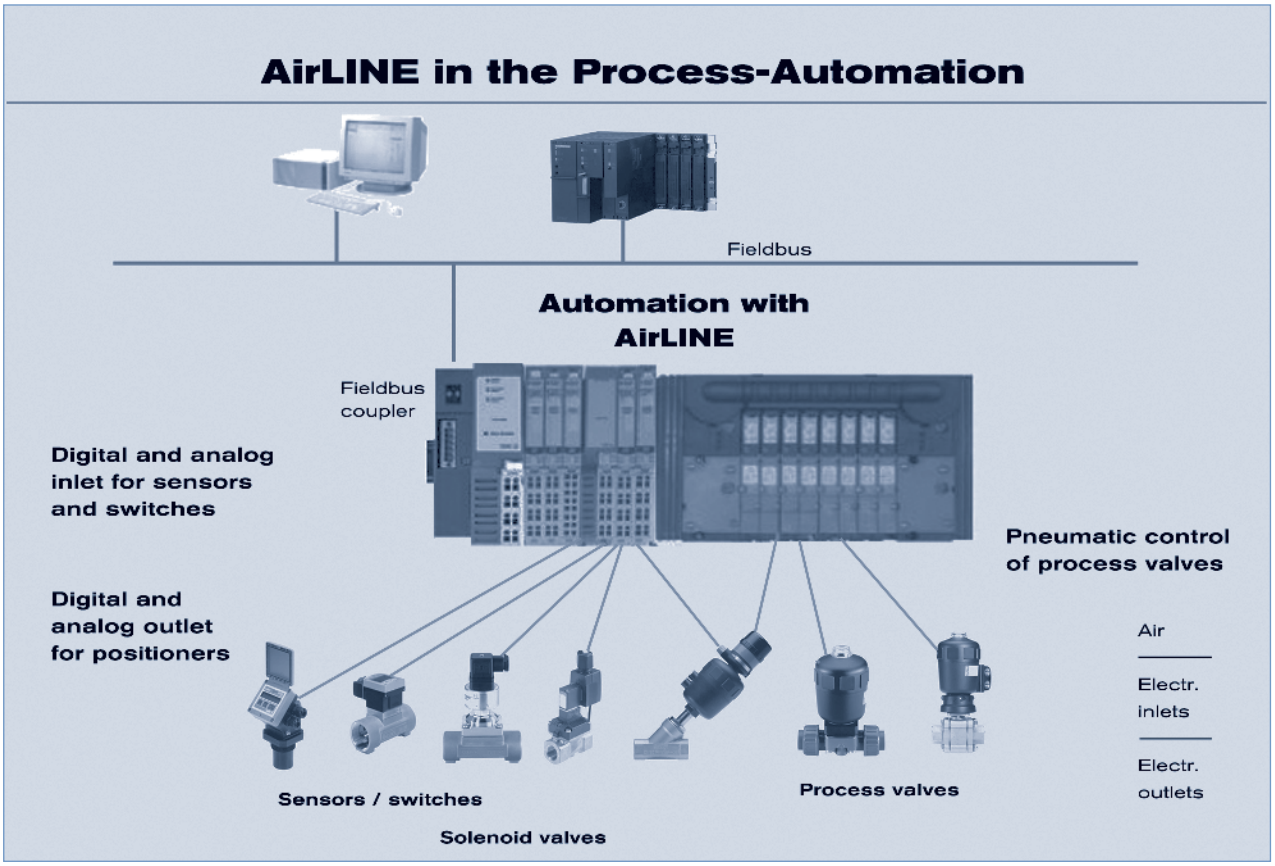
| Specifications | Pilot valve type | |
|---|---|---|
| | 0460, 6524, 6525 | 0461, 6526, 6527 |
| **Fieldbus type** | DeviceNet, EtherNet/IP, PROFIBUS DP | DeviceNet, EtherNet/IP, PROFIBUS DP |
| **Electrical modules** | Rockwell Point I/O System | Rockwell Point I/O System |
| **Digital modules** | 2 or 4 inputs<br>2 or 4 outputs, others on request | 2 or 4 inputs<br>2 or 4 outputs, others on request |
| **Analog modules** | 2 or 4 inputs (0-10 V, 0-20 mA, 4-20 mA, RTD, TC)<br>2 outputs (0-10 V, 0-20 mA, 4-20 mA) others on request | 2 or 4 inputs (0-10 V, 0-20 mA, 4-20 mA, RTD, TC)<br>2 outputs (0-10 V, 0-20 mA, 4-20 mA) others on request |
| **Operating voltage** | 24 V/DC | 24 V/DC |
| **Permissible voltage tolerance** | +20%/-15% (by use of Type 0460: ±10%) | +20%/-15% (by use of Type 0461: ±10%) |
| **Residual ripple** | 1 Vss | 1 Vss |
| **Rated power per valve** | 1 W (0.5 W nominal power after 120 ms) | 2 W (1 W nominal power after 120 ms) |
| **Rated current per valve** | 43 mA (28 mA holding current after 120 ms)<br>41 mA (by use of Type 0460) | 85 mA (52 mA holding current after 120 ms)<br>41 mA (by use of Type 0461) |
| **Temperatures** | | |
| Operating | 32°F to 131°F (0°C to +55°C)<br>(by use of Type 0460: 32°F to 122°F (0°C to +50°C)) | 32°F to 131°F (0°C to +55°C)<br>(by use of Type 0461: 32°F to 122°F (0°C to +50°C)) |
| Storage | -4°F to 140°F (-20°C to +60°C) | -4°F to 140°F (-20°C to +60°C) |
| **Rating** | IP20<br>IP65 in closed field housing | IP20<br>IP65 in closed field housing |
| **Approvals for hazardous areas** | Zone 2 | on request |

## Application example

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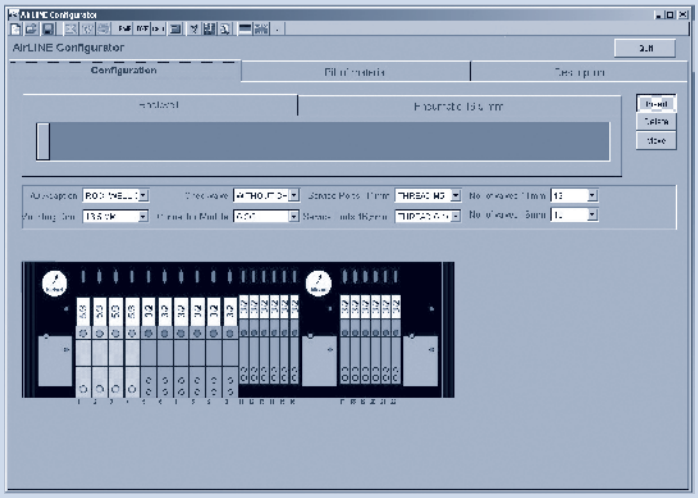
## Configuration software




AirLine is a system of modular design which is precisely adapted to the specific requirements of the customer. Burkert offers a software program, the Configurator, for the simple, precise generation of the required configuration of each Airline system.

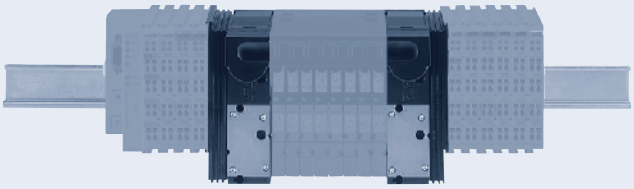
The Burkert Configurator defines:
- Number and types of valves
- Type of (intermediate) supplies

The results supplied by the Configurator:
- Bill of materials, incl. list prices
- Illustration

For more information consult individual datasheets, downloadable at www.burkert-usa.com

## Pneumatic module and electrical interfaces for modules series Rockwell Point I/O System

### Connector modules ME02



### Connector module “left“

| Description | Port connection | Item no. |
|---|---|---|
| Without pressure gauge | threaded port G 1/4 | 154 048 |
| | threaded port NPT 1/4 | 154 050 |
| | push-in 10 mm | 154 049 |
| With pressure gauge | threaded port G 1/4 | 154 054 |
| | threaded port NPT 1/4 | 154 056 |
| | push-in 10 mm | 154 055 |

### Connector module “right“ and Pneumatic intermediate supply module

| Description | Port connection | Item no. |
|---|---|---|
| Connector module “right” | | |
| Without pressure gauge | threaded port G 1/4 | 154 051 |
| | threaded port NPT 1/4 | 154 053 |
| | push-in 10 mm | 154 052 |
| With pressure gauge | threaded port G 1/4 | 154 057 |
| | threaded port NPT 1/4 | 154 059 |
| | push-in 10 mm | 154 058 |
| Pneumatic intermediate supply module | | |
| Without pressure gauge | threaded port G 1/4 | 154 077 |
| | threaded port NPT 1/4 | 154 079 |
| | push-in 10 mm | 154 078 |
| With pressure gauge | threaded port G 1/4 | 154 080 |
| | threaded port NPT 1/4 | 154 082 |
| | push-in 10 mm | 154 081 |

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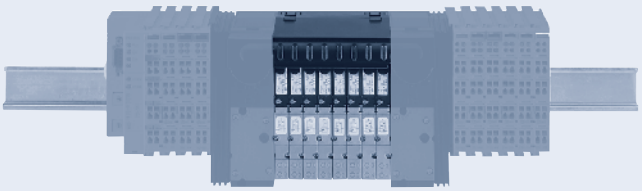
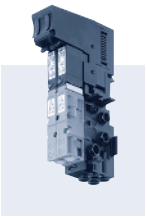
## Pneumatic module and electrical interfaces for modules series Rockwell Point I/O System

### AirLINE valve modules



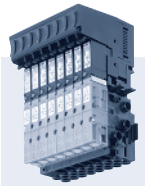
### Pneumatic basic module, electrical basic module and pilot valves

**2 valves wide/2 valves wide with 2 x 3/2-way valve**



**Service port 2 (A), 4 (B)**
Threaded port M5
Threaded port M7
Push-in ø 6 mm
Push-in ø 1/4"
Push-in ø 5/32"

**8 valves wide/8 valves wide with 2 x 3/2-way valve**



**Service port 2 (A), 4 (B)**
Threaded port M5
Threaded port M7
Push-in ø 6 mm
Push-in ø 1/4"
Push-in ø 5/32"

## Further pneumatic accessories

**Typ 0498**

Double pilot controlled
check Valve

**Available options on request**

- Check valves in R, S and P-shut
- Covering plate for spare channels
- Channel separation plugs to build different pressure areas

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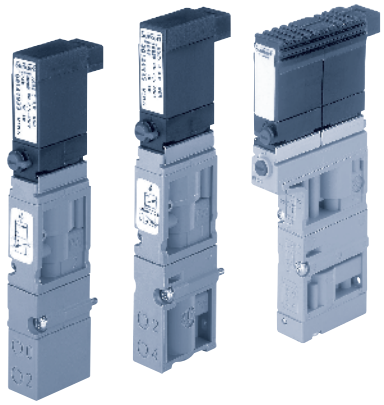
## **11mm width per station:** Multi-way solenoid valve Types 6524 and 6525

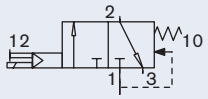
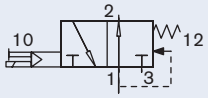
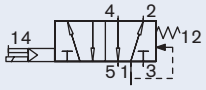
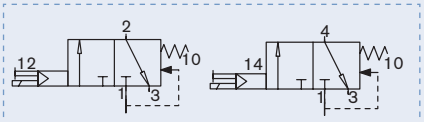


The solenoid valve Types 6524 and 6525 consist of a pneumatic valve body fitted with Type 6104 rocker pilot valve. The rocker principle allows switching of high pressure at low power consumption and fast response times. The pilot valves are equipped with manual override as a standard.
The 2 x 3/2-way valve version is the combination of two pilot rocker solenoid valves type 6104 and a pneumatic seat valve.

| Specification | 3/2-way valve | 2 x 3/2-way valve |
|---|---|---|
| **Body material** | PA (polyamide) | |
| **Seal material** | FPM, NBR | |
| **Media** | Lubricated and non-lubricated dry air, neutral gases (5 µm-Filter) | |
| **Port connection** | Flange for MP11 | |
| **Manual override** | As a standard feature | |
| **Voltage** | 24 V DC | |
| **Nominal power** | 1 W | 2 x 1 W with reduction of power consumption |
| **Duty cycle** | Continuous operation (100% ED) | |
| **Elec. connection on valve** | Rectangular plug 2-pole with raster 5.08 mm | Rectangular plug 3-pole with raster 2.54 mm |
| **Mounting** | With 2 screws M2 x 20 | With 2 screws M2 x 28 |
| **Installation position** | As required, preferably with pilot valve upright | |

| | |
|---|---|
| **Flow rate: QNn value air [l/min]** | Measured at 68°F (+20°C), 87 PSI pressure at valve inlet and 14.5 PSI pressure difference |
| **Pressure ranges [PSI]** | Measured as overpressure to the atmospheric pressure |
| **Response times [ms]** | Measured according to ISO 12238 |

## Order chart for valves

| Circuit function | Orifice [mm] | $C_v$ | $Q_{Nn}$-value air [l/min] | Pressure range [PSI] | Response times: Opening [ms] | Response times: Closing [ms] | Voltage/ Frequency [V/Hz] | Item no. |
|---|---|---|---|---|---|---|---|---|
| **C**  3/2-way valve, servo-assisted in de-energized position port 2 to atmosphere | 4 | .28 | 300 | Vac. - 101.5 | 15 | 20 | 24 V DC | 153 958 |
| | | | | 14.5 - 101.5 [1] | 15 | 20 | 24 V DC | 150 333 |
| | | | | 36.25 - 101.5 | 12 | 20 | 24 V DC | 144 933 |
| | | | | 36.25 - 145 | 15 | 28 | 24 V DC | 148 227 |
| **D**  3/2-way valve, servo-assisted in de-energized position port 2 pressurized | 4 | .28 | 300 | 14.5 - 101.5 [1] | 12 | 20 | 24 V DC | 150 334 |
| | | | | 36.25 - 101.5 | 12 | 20 | 24 V DC | 144 934 |
| | | | | 36.25 - 145 | 15 | 28 | 24 V DC | 152 139 |
| **H**  5/2-way valve, servo-assisted in de-energised position port 1 connected to port 2, port 4 exhausted | 4 | .28 | 300 | 14.5 - 101.5 [1] | 15 | 20 | 24 V DC | 150 335 |
| | | | | 36.25 - 101.5 | 15 | 20 | 24 V DC | 144 935 |
| | | | | 36.25 - 145 | 20 | 28 | 24 V DC | 150 610 |
| **C**  2 x 3/2-way valve, servo-assisted in de-energized position port 2/4 to atmosphere | 4 | .28 | 300 | 14.5 - 101.5 [1] | 12 | 20 | 24 V DC | 170 269 [2] |
| | | | | 36.25 - 101.5 | 12 | 20 | 24 V DC | 170 268 [2] |

[1] Version with auxiliary air.
[2] Version with integrated reduction of power consumption

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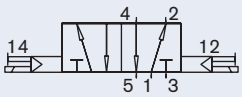
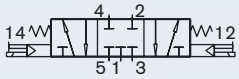
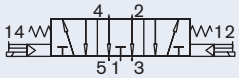
## 11 mm width per station: Multi-way solenoid valve Types 0460

The solenoid valve Type 0460 consists of a pneumatic valve body fitted with a double coil pilot valve. The principle allows switching of high pressures together with low power consumption and fast response times.
All valves are equipped with manual override as a standard.

| Technical data | |
|---|---|
| **Body material** | Aluminium |
| **Seal material** | NBR |
| **Media** | Lubricated and non-lubricated dry air, neutral gases (5 µm-filter recommended) |
| **Port connection** | Flange |
| **Pneumatic module** | MP11 |
| **Supply port 1 (P), 3 (R), 5 (S)** | G 1/4<br>NPT 1/4<br>Push-in connection Ø 10 mm |
| **Service port 2 (A), 4 (B)** | Push-in connection Ø 6 mm<br>Push-in connection Ø 1/4"<br>Push-in connection Ø 4 mm = ø 5/32"<br>M5<br>M7 |
| **Voltage** | 24 V DC |
| **Electrical connection on valve** | Rectangular plug |
| **Manual override** | Standard |

| | |
|---|---|
| **Flow rate: QNn-value air l/min]** | Measured at 68°F (+20°C), 87 PSI pressure at valve inlet and 14.5 PSI pressure difference |
| **Pressure ranges [PSI]** | Measured as overpressure to the atmospheric pressure |
| **Response times [ms]** | Measured according to ISO 12238 |

## Ordering chart valves

| Circuit function | Orifice [mm] | $C_v$ | $Q_{Nn}$-value air [l/min] | Pressure range [PSI] | Nominal power [W] | Response times Opening [ms] | Response times Closing [ms] | Item no. |
|---|---|---|---|---|---|---|---|---|
| **H**  5/2-way valve, servo-assisted impulse version | 2.5 | .18 | 200 | 29 - 101.5 | 1 | 15 | 15 | 154 183 |
| **L**  5/3-way valve, servo-assisted in middle position all ports blocked | 2.5 | .18 | 200 | 29 - 101.5 | 1 | 15 | 20 | 154 184 |
| **N**  5/3-way valve, servo-assisted in middle position port 2 and 4 exhausted | 2.5 | .18 | 200 | 29 - 101.5 | 1 | 15 | 20 | 154 185 |

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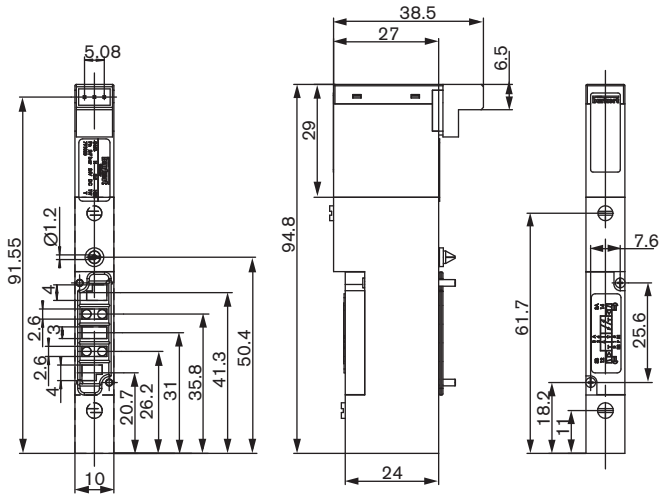
## Dimensions [mm]

**5/2 way impulse and 5/3 way version, circuit function H impulse, L and N**

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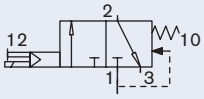
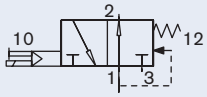
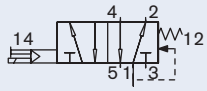
## **16.5mm width per station:** Multi-way for solenoid valve Types 6526 and 6527

The solenoid valve Types 6526 and 6527 consist of a pneumatic valve body fitted with Type 6106 rocker pilot valve. The rocker principle allows switching of high pressure at low power consumption and fast response times. The pilot valves are equipped with manual override as a standard.

| Specification | |
|---|---|
| **Body material** | PA (polyamide) |
| **Seal material** | NBR |
| **Media** | Lubricated and non-lubricated dry air, neutral gases (10 µm filter) |
| **Port connection** | Flange for MP12 |
| **Manual override** | Standard |
| **Voltage** | 24 V DC |
| **Nominal power** | 2 W, 1W |
| **Duty cycle** | Continuous operation (100% ED) |
| **Elec. Connection on valve** | Tag connector acc. to DIN EN 175301-803 (previously DIN 43650) Form C |
| **Mounting** | With 2 screws M3x30 |
| **Installation position** | As required, preferably with pilot valve upright |

| | |
|---|---|
| **Flow rate: QNn value air [l/min]** | Measured at 68°F (+20°C), 87 PSI pressure at valve inlet and 14.5 PSI pressure difference |
| **Pressure ranges [PSI]** | Measured as overpressure to the atmospheric pressure |
| **Response times [ms]** | Measured acc. to ISO 12238 |

## Order chart for valves

| Circuit functions | Orifice [mm] | $C_v$ | $Q_{Nn}$-value air [l/min] | Pressure range [PSI] | Nominal power [W] | Response times Opening [ms] | Response times Closing [ms][3] | Voltage/ Frequency [V/Hz] | Item no. |
|---|---|---|---|---|---|---|---|---|---|
| **C**  3/2-way valve, servo-assisted in de-energized position port 2 to atmosphere | 6 | .64 | 700 | 14.5 - 145[1] | 2 | 20 | 12 | 24 V DC | 156 842 |
| | | | | 14.5 - 145[1] | 2 | 20 | 12 | 24 V DC | 163 028[2] |
| | | | | 29 - 145 | 2 | 20 | 12 | 24 V DC | 156 318 |
| | | | | 29 - 145 | 2 | 20 | 12 | 24 V DC | 158 944[2] |
| | | | | 29 - 116 | 1 | 20 | 17 | 24 V DC | 156 840 |
| | | | | 29 - 116 | 1 | 20 | 12 | 24 V DC | 158 947[2] |
| **D**  3/2-way valve, servo-assisted in de-energized position port 2 pressurized | 6 | .64 | 700 | 14.5 - 145[1] | 2 | 12 | 20 | 24 V DC | 157 672 |
| | | | | 14.5 - 145[1] | 2 | 20 | 12 | 24 V DC | 163 029[2] |
| | | | | 29 - 145 | 2 | 12 | 20 | 24 V DC | 156 320 |
| | | | | 29 - 145 | 2 | 20 | 12 | 24 V DC | 158 946[2] |
| | | | | 29 - 116 | 1 | 17 | 20 | 24 V DC | 156 841 |
| | | | | 29 - 116 | 1 | 20 | 12 | 24 V DC | 158 948[2] |
| **H**  5/2-way valve, servo-assisted in de-energized position port 1 connected to port 2, port 4 exhausted | 6 | .64 | 700 | 14.5 - 145[1] | 2 | 20 | 12 | 24 V DC | 156 828 |
| | | | | 14.5 - 145[1] | 2 | 20 | 12 | 24 V DC | 163 030[2] |
| | | | | 29 - 145 | 2 | 20 | 12 | 24 V DC | 156 337 |
| | | | | 29 - 145 | 2 | 20 | 12 | 24 V DC | 158 942[2] |
| | | | | 29 - 116 | 1 | 20 | 17 | 24 V DC | 156 827 |
| | | | | 29 - 116 | 1 | 20 | 12 | 24 V DC | 158 943[2] |

[1] version with auxiliary air
[2] electric connection with manual override.
[3] closing time approx. 5 ms higher when used together with valve unit

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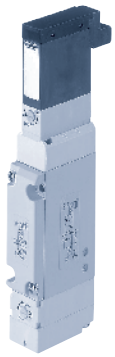
## **16.5 mm width per station:** Multi-way solenoid valve Type 0461

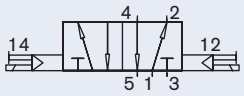
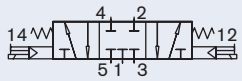


The solenoid valve Type 0461 consists of a pneumatic valve body fitted with a double coil pilot valve. The principle allows switching of high pressures together with low power consumption and fast response times. All valves are equipped with manual override as a standard.

| Technical data | |
|---|---|
| **Body material** | Aluminium |
| **Seal material** | NBR |
| **Media** | Lubricated and non-lubricated dry air, neutral gases (10 µm-filter recommended) |
| **Port connection** | Flange |
| **Pneumatic module** | MP12 |
| **Supply port 1 (P), 3 (R), 5 (S)** | G 3/8<br>NPT 3/8 |
| **Service port 2 (A), 4 (B)** | G 1/8<br>NPT 1/8<br>Push-in connection Ø 8 mm |
| **Operating voltage** | 24 V DC |
| **Electrical connection on valve** | Rectangular plug |
| **Manual override** | Standard |

| | |
|---|---|
| **Flow rate: QNn-value air l/min]** | Measured at 68°F (+20°C), 87 PSI pressure at valve inlet and 14.5 PSI pressure difference |
| **Pressure ranges [PSI]** | Measured as overpressure to the atmospheric pressure |
| **Response times [ms]** | Measured according to ISO 12238 |

## Ordering chart valves

| Circuit function | Orifice [mm] | $C_v$ | $Q_{Nn}$-value air [l/min] | Pressure range [PSI] | Nominal power [W] | Response times Opening [ms] | Response times Closing [ms] | Item no. |
|---|---|---|---|---|---|---|---|---|
| **H**  5/2-way valve, servo-assisted impulse version | 6 | .46 | 500 | 36.25 - 101.5 | 1 | 20 | 30 | 156 766 |
| **L**  5/3-way valve, servo-assisted in middle position all ports blocked | 6 | .46 | 500 | 36.25 - 101.5 | 1 | 15 | 50 | 156 767 |
| **N** 5/3-way valve, servo-assisted in middle position port 2 and 4 exhausted | 6 | .46 | 500 | 36.25 - 101.5 | 1 | 15 | 50 | 156 768 |

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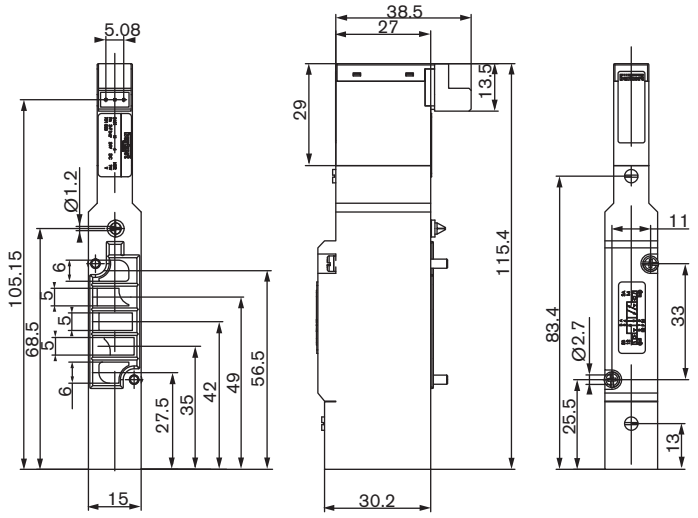
## Dimensions [mm]

**5/2 way impulse and 5/3 way version, circuit function H impulse, L and N**

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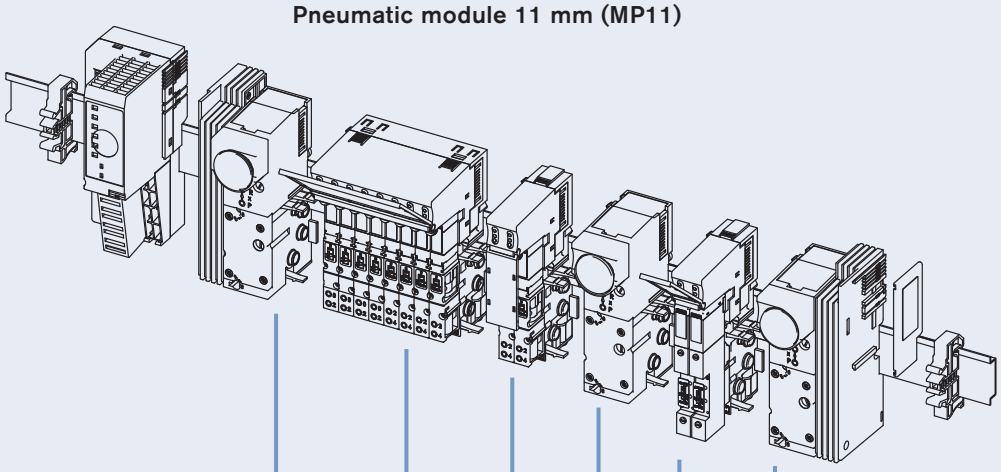
## Pneumatic modules and electrical interfaces for modules series Rockwell Point I/O System

### Pneumatic module 11 mm (MP11)



**Connector module “left”, with or without pressure gauge**

Threaded port G 1/4
Threaded port NPT 1/4
Push-in 10 mm

**Pneumatic basic module, electrical basic module and pilot valves**

**8 valves wide (4 x 11 mm)**

**Service port 2 (A), 4 (B)**
Threaded port M5
Threaded port M7
Push-in ø 4 mm and 5/32“
Push-in ø 6 mm
Push-in ø 1/4“

**2 valves wide (2 x 11 mm)**

**Service port 2 (A), 4 (B)**
Threaded port M5
Threaded port M7
Push-in ø 4 mm and 5/32“
Push-in ø 6 mm
Push-in ø 1/4“

**Connector module “right”, With or without pressure gauge**

Threaded port G 1/4
Threaded port NPT 1/4
Push-in 10 mm

**Pneumatic basic module, electrical basic module and pilot valves**

2 valves wide (2 x 11 mm)

Service port 2 (A), 4 (B)
Threaded port M5
Threaded port M7
Push-in ø 4 mm and 5/32“
Push-in ø 6 mm
Push-in ø 1/4“

**Intermediate supply module, with or without pressure gauge**

Threaded port G 1/4
Threaded port NPT 1/4
Push-in 10 mm

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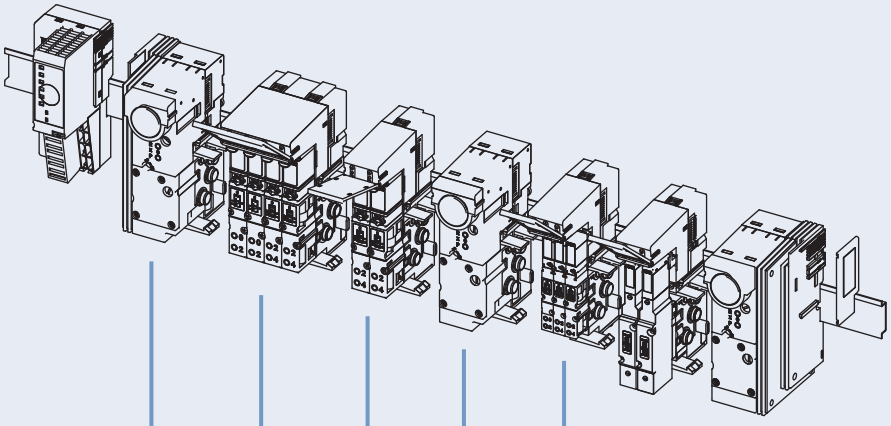
## Pneumatic modules and electrical interfaces for modules series Rockwell Point I/O System

### Pneumatic module 16.5 mm (MP12)



**Connector module “left”,**
**With or without pressure gauge**

Threaded port G 3/8
Threaded port NPT 3/8

**Pneumatic basic module, electrical**
**basic module and pilot valves**

**4 valves wide (4 x 16.5 mm)**

**Service port 2 (A), 4 (B)**
Threaded port G1/8
Threaded port NPT1/8
Push-in ø 8 mm and ø 5/16”

**2 valves wide (2 x 16.5 mm)**

**Service port 2 (A), 4 (B)**
Threaded port G1/8
Threaded port NPT1/8
Push-in ø 8 mm and ø 5/16”

**Connector module “right”,**
**With or without pressure gauge**

Threaded port G 3/8
Threaded port NPT 3/8

**Pneumatic basic module, electrical**
**Basic module and pilot valves**

**3 valves wide (3 x 11 mm)**

**Service port 2 (A), 4 (B)**
Threaded port M5
Threaded port M7
Push-in ø 6 mm

**Intermediate supply module,**
**With or without pressure gauge**

Threaded port G 3/8
Threaded port NPT 3/8

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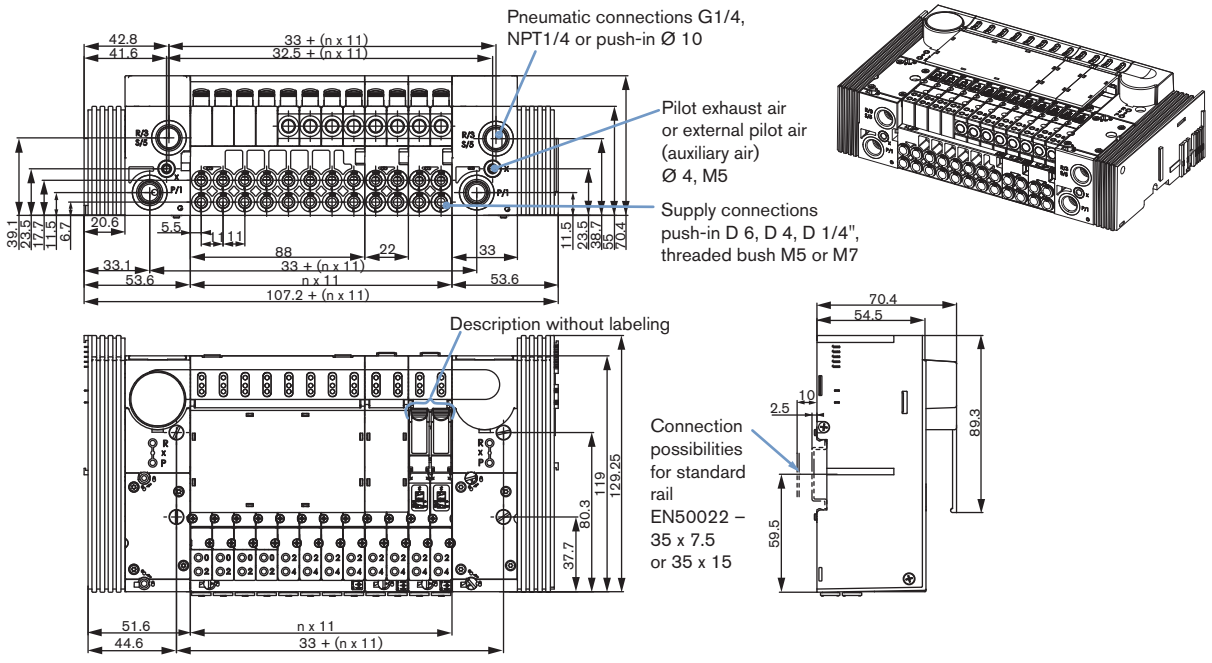
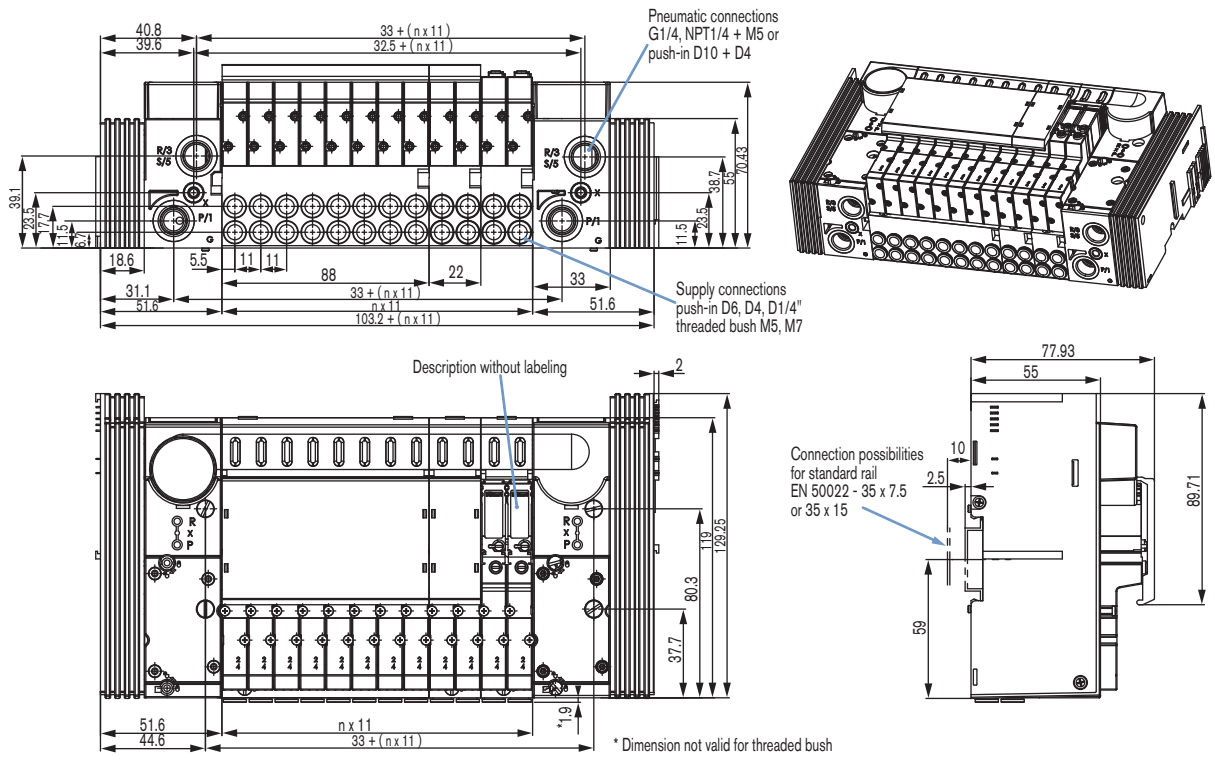
## Dimensions [mm]

### 11 mm mounting dimensions for Type 6524 / 6525




n = number of valves

### 11 mm mounting dimensions for Type 6524 2 x 3/2-way valve




* Dimension not valid for threaded bush



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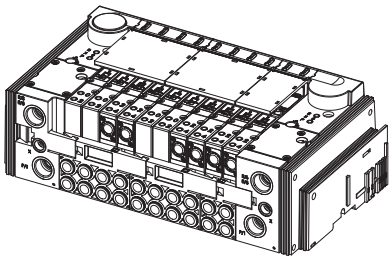
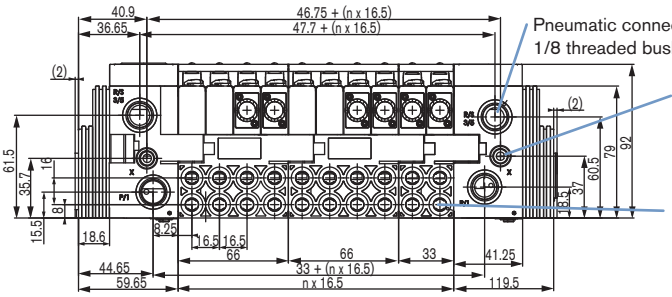
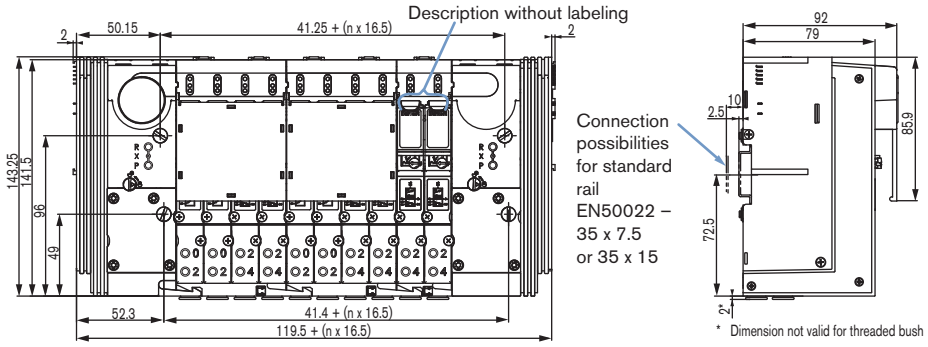
## Dimensions [mm]

### 16.5 mm mounting dimensions for Type 6526 / 6527






n = number of valves

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In case of special application conditions,
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