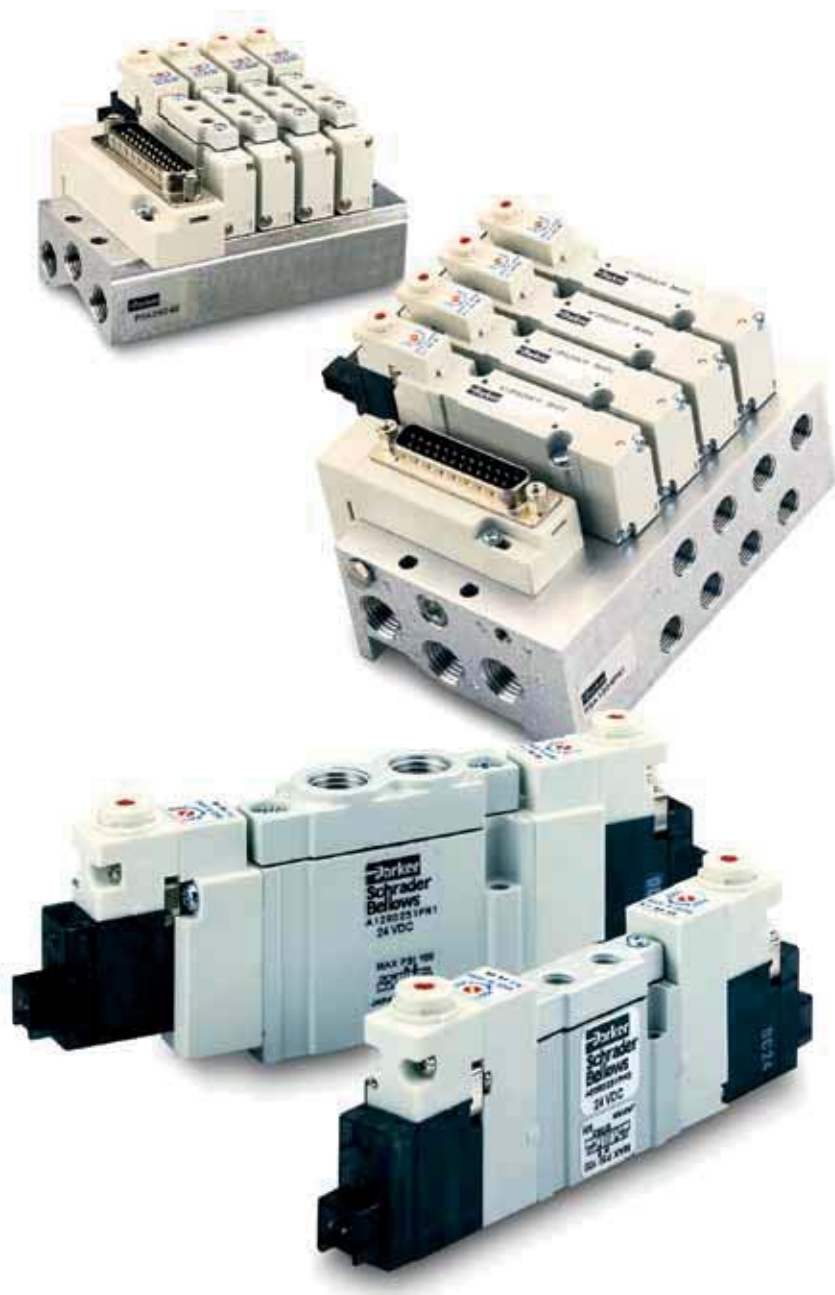




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sealing & shielding



ADEX

Miniature Directional Control Valves

PDE2622TCUK January 2010



ENGINEERING YOUR SUCCESS.

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**Important !**

Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.

**NB !**

All technical data in this catalogue is typical only. The air quality is decisive for the valve life: see ISO 8573.

**WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

SALE CONDITIONS

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A05 Series

A12 Series

Compact body with large flow

It allows flexibility on your applications saving space and reducing costs.

These series is most suitable for driving cylinders of Ø10 to Ø100 in diameter.

Quick response time, faster than 10 ms

(A05 series, Single solenoid)

Uniquely designed pilot valve with fast response time and low power consumption.

Tested life time more than 50,000,000 times

(Based on Parker laboratory test conditions)

ADEX valves feature the well-reputed WCS (Wear Compensation System) in the main spool, resulting in low sliding friction and long service life.

Low power consumption only 0,6 W

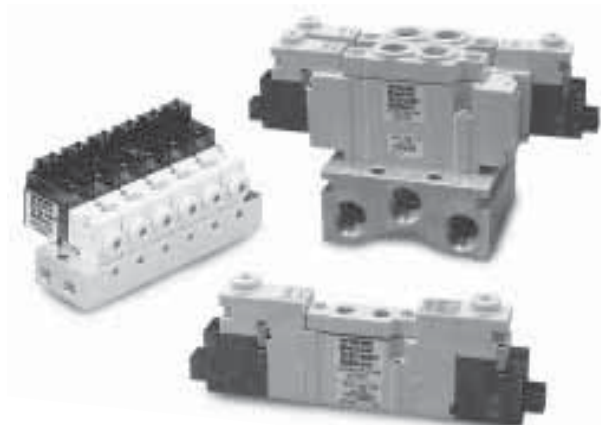
(With indicator light and surge suppressor)

Direct drive from PLC is possible, contributing to cost reduction as well as down sizing of the DC power supply.

Multipin connector version

Connection by sub-D25 on sub-base.

In-line or sub bases mounted (side ported) versions



A05

5/2 and 5/3 versions

Body width **10 mm**

Output ports **M5**



A12

5/2 and 5/3 versions

Body width **15 mm**

Output ports **G1/8**



Captured exhaust from main valve and pilot valve

(Sub-base mounting type)

Exhaust air from pilot valve is captured together with exhaust air from main valve.

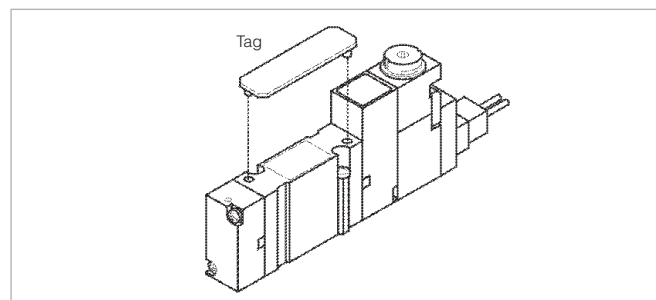
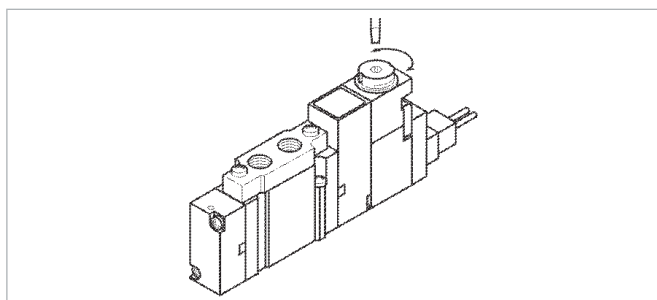
Unlike conventional exhaust systems, exhaust air from pilot valve is not directly discharged to outside. This takes to prevent air contamination in the atmosphere.

Manual override

Screwdriver-operated manual override is standard.

Multipurpose tag available

For the convenience of installation, testing, maintenance tag can be mounted on the upside of solenoid valve body.



The image displays four views of the 24VDC 12A 2-position 2-way solenoid valve. The front view shows the valve body with two ports and a solenoid coil. The side view shows the valve body with two ports and a solenoid coil. The top view shows the valve body with two ports and a solenoid coil. The bottom view shows the valve body with two ports and a solenoid coil.

| Series | A05R | A12R |
|----------------------------------|------|------|
| Internal Pilot Supply | ● | ● |
| Single Solenoid 5/2 | ● | ● |
| Double Solenoid 5/2 | ● | ● |
| Closed Centre 5/3 | ● | ● |
| Vented Centre 5/3 | ● | ● |
| Pressurised Centre 5/3 | ● | ● |
| Indicator LED & Surge Suppressor | ● | ● |
| Manual Override | ● | ● |
| In-line Mounting | ● | ● |
| IEM Manifold Mounting | ● | ● |
| Sub-base Mounting | | |
| Electrical Collective Wiring | ● | ● |
| Port Sizes | M5 | G1/8 |

A12 : 8 x 6 mm

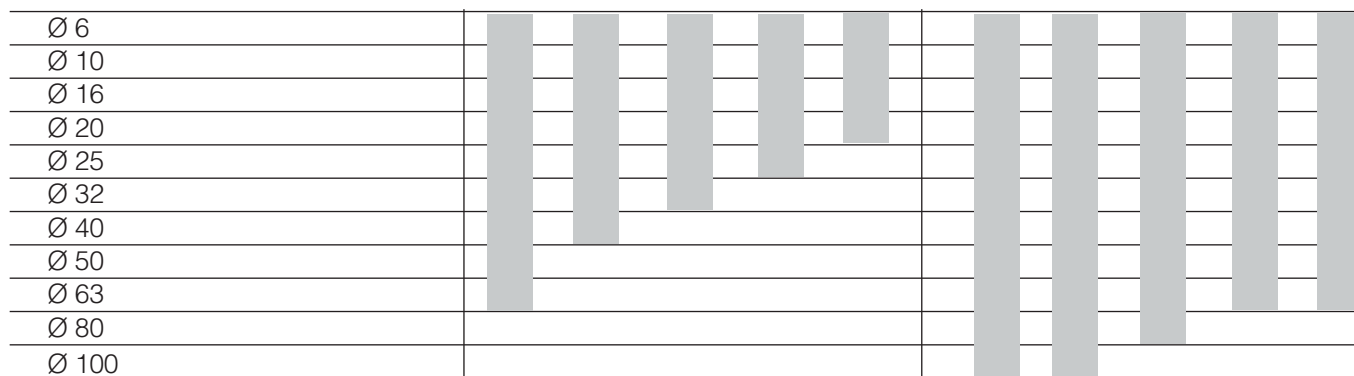
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Sub-base Mounted Valves

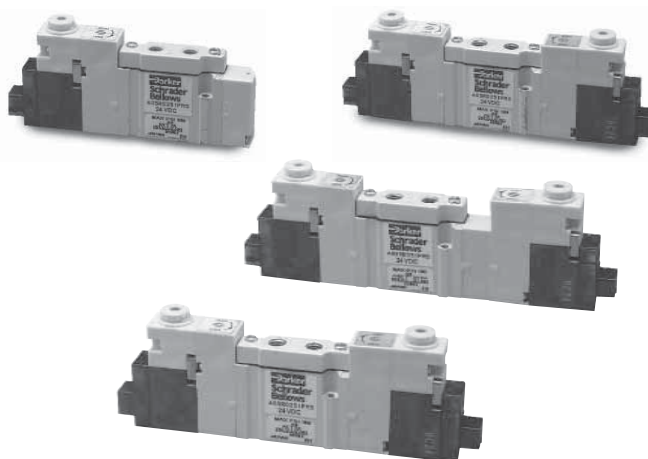


| Series | A05P | A12P |
|----------------------------------|------|------|
| Internal Pilot Supply | ● | ● |
| Single Solenoid 5/2 | ● | ● |
| Double Solenoid 5/2 | ● | ● |
| Closed Centre 5/3 | ● | ● |
| Vented Centre 5/3 | ● | ● |
| Pressurised Centre 5/3 | ● | ● |
| Indicator LED & Surge Suppressor | ● | ● |
| Manual Override | ● | ● |
| In-line Mounting | | |
| IEM Manifold Mounting | | |
| Sub-base Mounting | ● | ● |
| Electrical Collective Wiring | ● | ● |
| Port Sizes | M5 | G1/8 |

A12 : 8 x 6 mm



- 0,6 W low power solenoid
- Fast response time
- Vacuum version available on request
- Impulse and turn to lock manual override



Operating information

Working pressure : 5/2 monos. 1,5 to 7,1 bar
5/2 bistable 1 to 7,1 bar
5/3 CC, CV, CP 2 to 7,1 bar

Working temperature : -5°C to +50°C

Storage temperature : -40°C to +70°C

Fluid : air or gaz 50µm filtered
lubricated or not

| Response time | (V DC) | Response time : ms | | |
|---------------|--------|--------------------|---------|-----|
| | | 5/2 monos. | 5/2 bi. | 5/3 |
| A05R | On | 10 | 10 | 10 |
| | Off | 10 | - | 15 |
| A12R | On | 15 | 10 | 12 |
| | Off | 18 | - | 36 |
| A05P | On | 10 | 10 | 10 |
| | Off | 10 | - | 15 |
| A12P | On | 15 | 10 | 12 |
| | Off | 18 | - | 36 |

*Cv measurement : there are several ways to determine Cv valves, resulting in some Cv been overstated by 20 to 40%. This can adversely affect the user's application because the valve flows less than the quoted Cv.

Parker's Cv valve is calculated using the ANSI (NFPA) T3-21-3-1990 standard. The ANSI (NFPA) method is a structured test using very specific tube sizes and length, inlet pressures, pressures drop and volume chambers.

Expected mechanical life
with dry air at 6 bar 20°C 1 Hz : 50 million cycles

Orientation : any plane

Maximum operating
frequency : cycles/min. : 5/2; 600 (10Hz) - 5/3; 500

Degree of protection : IP 40

Note : Above mentioned datas apply for intermittent duty,
for continuous duty : please consult us.

Operating voltage : 12 and 24 VDC
-10% to +10% intermittent duty
and -10% to 0% continuous duty

Surge suppression : Diode for DC version

Consumption : 0,55 W (without LED)
0,6W (with LED indicator light)

Wiring : Connector 2,54mm pin spacing

Flow characteristics

| | | 5/2 monostable | 5/2 bistable | 5/3 close center |
|--------------------|-----|----------------|----------------|------------------|
| In-line IEM | | A05RS25 | A05RD25 | A05RD35 |
| A05 | Cv* | 0,17 | 0,17 | 0,16 |
| In-line IEM | | A12RS25 | A12RD25 | A12RD35 |
| A12 | Cv* | 0,47 | 0,47 | 0,43 |
| Sub-base | | A05PS25 | A05PD25 | A05PD35 |
| A05 | Cv* | 0,18 | 0,18 | 0,16 |
| Sub-base | | A12PS25 | A12PD25 | A12PD35 |
| A12 | Cv* | 0,44 | 0,44 | 0,40 |

Main data for directional control valves A05R and A12R series

Electrically actuated 5/2 single solenoid



| Symbol | Threaded connection | Voltage | Order code |
|--------|---------------------|---------|----------------------|
| | M5 | 24 VDC | A05RS251PM5MF |
| | G1/8 | 24 VDC | A12RS251PG1MF |

Electrically actuated 5/2 double solenoid



| Symbol | Threaded connection | Voltage | Order code |
|--------|---------------------|---------|----------------------|
| | M5 | 24 VDC | A05RD251PM5MF |
| | G1/8 | 24 VDC | A12RD251PG1MF |

Electrically actuated 5/3 closed centre



| Symbol | Threaded connection | Voltage | Order code |
|--------|---------------------|---------|----------------------|
| | M5 | 24 VDC | A05RD351PM5MF |
| | G1/8 | 24 VDC | A12RD351PG1MF |

Electrically actuated 5/3 vented centre

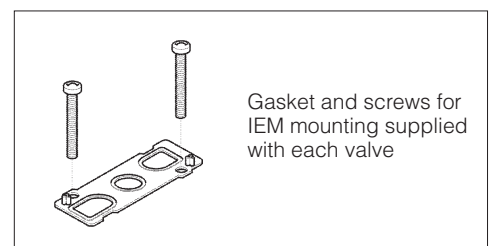


| Symbol | Threaded connection | Voltage | Order code |
|--------|---------------------|---------|----------------------|
| | M5 | 24 VDC | A05RE351PM5MF |
| | G1/8 | 24 VDC | A12RE351PG1MF |

Electrically actuated 5/3 pressurised centre



| Symbol | Threaded connection | Voltage | Order code |
|--------|---------------------|---------|----------------------|
| | M5 | 24 VDC | A05R0351PM5MF |
| | G1/8 | 24 VDC | A12R0351PG1MF |



Main data for manifolds for directional control valves A05R/A12R series**Manifold for in-line valve with individual electric connector**

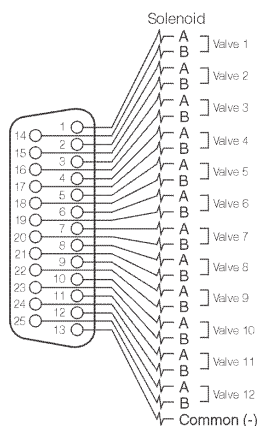
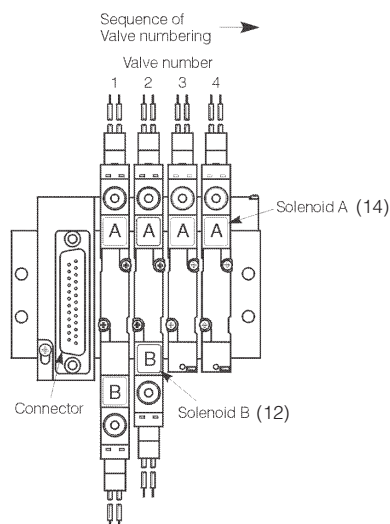
| No. of stations | Port size | Size | Order Code |
|-----------------|-----------------|------|-------------------|
| 4 | M5 | A05 | MMFU4A05G |
| | G $\frac{1}{8}$ | A12 | MMFU4A12G |
| 6 | M5 | A05 | MMFU6A05G |
| | G $\frac{1}{8}$ | A12 | MMFU6A12G |
| 8 | M5 | A05 | MMFU8A05G |
| | G $\frac{1}{8}$ | A12 | MMFU8A12G |
| 10 | M5 | A05 | MMFU10A05G |
| | G $\frac{1}{8}$ | A12 | MMFU10A12G |
| 12 | M5 | A05 | MMFU12A05G |
| | G $\frac{1}{8}$ | A12 | MMFU12A12G |

Manifold for in-line valve with Sub-D collective wiring module

| No. of stations | Port size | Size | Order Code |
|-----------------|-----------------|------|-------------------|
| 4 | M5 | A05 | MMCU4A05G |
| | G $\frac{1}{8}$ | A12 | MMCU4A12G |
| 6 | M5 | A05 | MMCU6A05G |
| | G $\frac{1}{8}$ | A12 | MMCU6A12G |
| 8 | M5 | A05 | MMCU8A05G |
| | G $\frac{1}{8}$ | A12 | MMCU8A12G |
| 10 | M5 | A05 | MMCU10A05G |
| | G $\frac{1}{8}$ | A12 | MMCU10A12G |
| 12 | M5 | A05 | MMCU12A05G |
| | G $\frac{1}{8}$ | A12 | MMCU12A12G |

Collective wiring add-on module

| No. of stations | Size | Order Code |
|-----------------|------|--------------------|
| 4 | A05 | MCS4A05PDL |
| | A12 | MCS4A12PDL |
| 6 | A05 | MCS6A05PDL |
| | A12 | MCS6A12PDL |
| 8 | A05 | MCS8A05PDL |
| | A12 | MCS8A12PDL |
| 10 | A05 | MCS10A05PDL |
| | A12 | MCS10A12PDL |
| 12 | A05 | MCS12A05PDL |
| | A12 | MCS12A12PDL |

Collective wiring pin mapping**Pin map for Sub-D25 connector****Valve and solenoid addresses**

Main data for directional control valves A05P/A12P series

Electrically actuated 5/2 single solenoid



| Symbol | Voltage | Size | Order code |
|--------|---------|------|------------------|
| | 24 VDC | A05 | A05PS251P |
| | 24 VDC | A12 | A12PS251P |

Electrically actuated 5/2 double solenoid



| Symbol | Voltage | Size | Order code |
|--------|---------|------|------------------|
| | 24 VDC | A05 | A05PD251P |
| | 24 VDC | A12 | A12PD251P |

Electrically actuated 5/3 closed centre



| Symbol | Voltage | Size | Order code |
|--------|---------|------|------------------|
| | 24 VDC | A05 | A05PD351P |
| | 24 VDC | A12 | A12PD351P |

Electrically actuated 5/3 vented centre

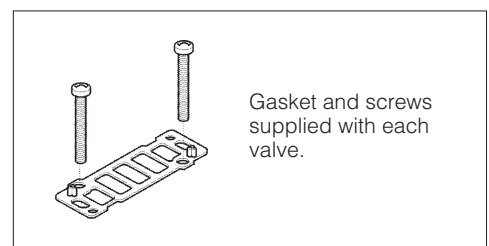


| Symbol | Voltage | Size | Order code |
|--------|---------|------|------------------|
| | 24 VDC | A05 | A05PE351P |
| | 24 VDC | A12 | A12PE351P |

Electrically actuated 5/3 pressurised centre



| Symbol | Voltage | Size | Order code |
|--------|---------|------|------------------|
| | 24 VDC | A05 | A05P0351P |
| | 24 VDC | A12 | A12P0351P |



Main data for manifolds for directional control valves A05P/A12P series**Manifold side ported BSPP thread, for valves with individual electrical wiring**

| No. of stations | Port size | Size | Order Code |
|-----------------|-------------------------------|------|---------------------|
| 4 | M5 | A05 | MMFS4A05GM5 |
| | G ¹ / ₈ | A12 | MMFS4A12GG1 |
| 6 | M5 | A05 | MMFS6A05GM5 |
| | G ¹ / ₈ | A12 | MMFS6A12GG1 |
| 8 | M5 | A05 | MMFS8A05GM5 |
| | G ¹ / ₈ | A12 | MMFS8A12GG1 |
| 10 | M5 | A05 | MMFS10A05GM5 |
| | G ¹ / ₈ | A12 | MMFS10A12GG1 |
| 12 | M5 | A05 | MMFS12A05GM5 |
| | G ¹ / ₈ | A12 | MMFS12A12GG1 |

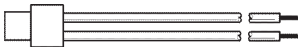
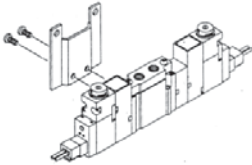
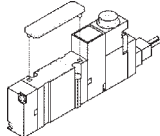
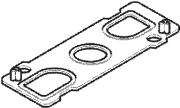
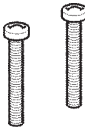
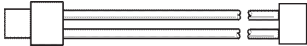
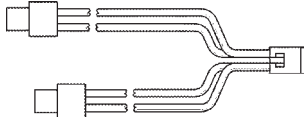
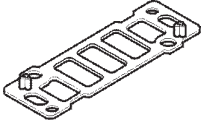
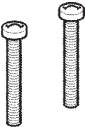
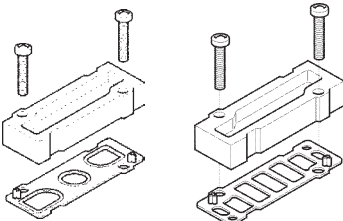
Manifold side ported BSPP thread, for Sub D-collective wiring module

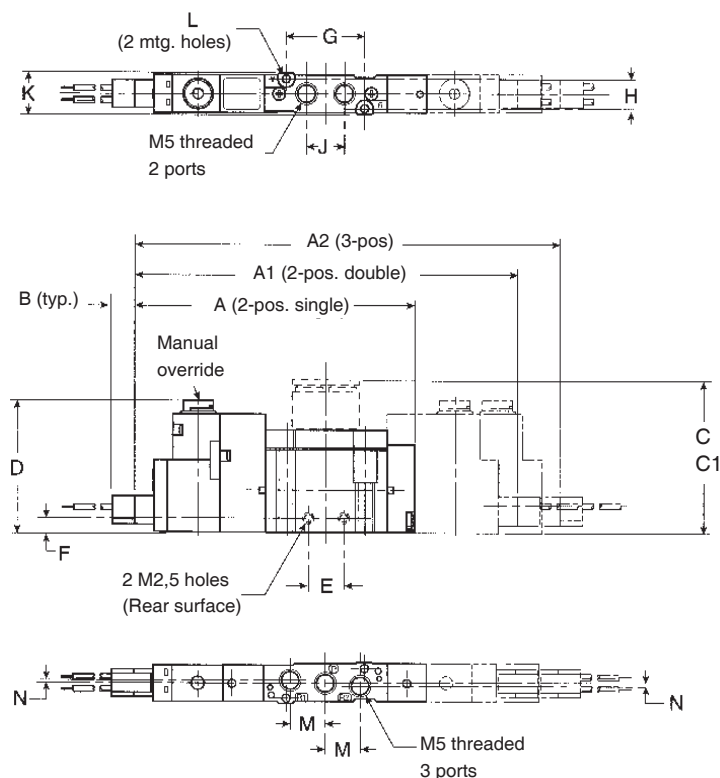
| No. of stations | Port size | Size | Order Code |
|-----------------|-------------------------------|------|---------------------|
| 4 | M5 | A05 | MMCS4A05GM5 |
| | G ¹ / ₈ | A12 | MMCS4A12GG1 |
| 6 | M5 | A05 | MMCS6A05GM5 |
| | G ¹ / ₈ | A12 | MMCS6A12GG1 |
| 8 | M5 | A05 | MMCS8A05GM5 |
| | G ¹ / ₈ | A12 | MMCS8A12GG1 |
| 10 | M5 | A05 | MMCS10A05GM5 |
| | G ¹ / ₈ | A12 | MMCS10A12GG1 |
| 12 | M5 | A05 | MMCS12A05GM5 |
| | G ¹ / ₈ | A12 | MMCS12A12GG1 |

Collective wiring add-on module (supplied with mounting screws) for MMCS... manifolds

| No. of stations | Size | Order Code |
|-----------------|------|--------------------|
| 4 | A05 | MCS4A05PDL |
| | A12 | MCS4A12PDL |
| 6 | A05 | MCS6A05PDL |
| | A12 | MCS6A12PDL |
| 8 | A05 | MCS8A05PDL |
| | A12 | MCS8A12PDL |
| 10 | A05 | MCS10A05PDL |
| | A12 | MCS10A12PDL |
| 12 | A05 | MCS12A05PDL |
| | A12 | MCS12A12PDL |

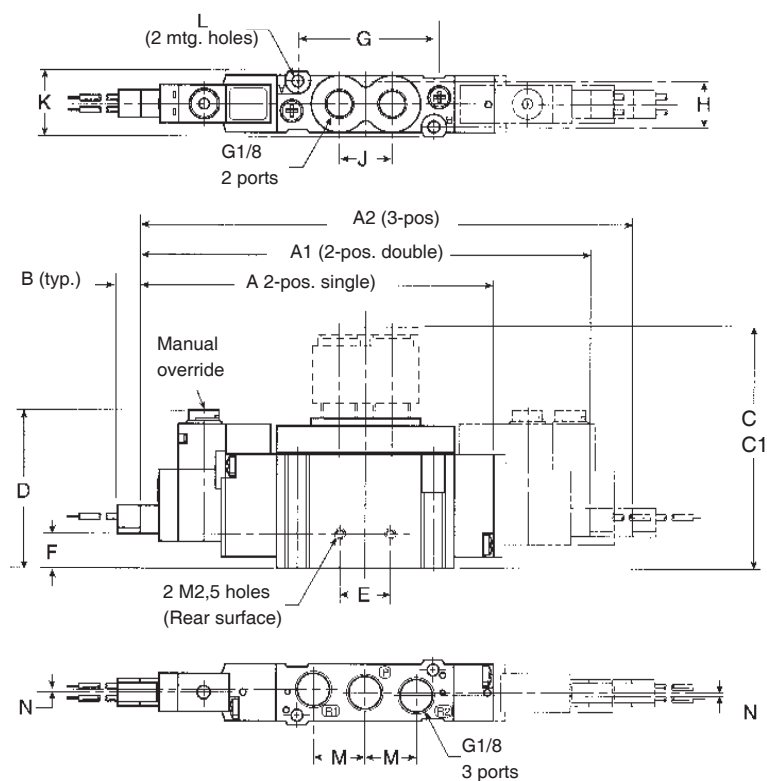
For wiring pin mapping see page 8

| | Description | Order code |
|---|---|------------------------------|
|  | Connector with lead wire black (-), red (+), length 500mm | A05PDCCL5 |
| | Connector with lead wire black (-), red (+), length 1000mm | A05PDCCL10 |
|  | Mounting bracket A05R (1 bracket with 2 screws) | A05RBS |
| | Mounting bracket A12R (1 bracket with 2 screws) | A12RBS |
|  | Identification tag for sub-base valves (pack of 10) | A05PN |
|  | IEM gasket (pack of 10) for A05R/A12R | A05RG A12RG |
|  | IEM mounting screws (pack of 20) for A05R/A12R | A05RS A12RS |
|  | Collective wiring connector Single solenoid PNP | A05PSCCM A12PSCCM |
|  | Collective wiring connector Double solenoid PNP | A05PDCCM A12PDCCM |
|  | Sub-base gasket (pack of 10) for A05P/A12P | A05PG A12PG |
|  | Sub-base mounting screws (pack of 20) for A05P/A12P | A05PS A12PS |
|  | IEM blanking plate kit (pack of 5) | A05RGBP A12RGBP |
| | Sub-base blanking plate kit (pack of 5) | A05PGBP A12PGBP |

A05R - Single and double operators - Body ported**A05R - Body ported**

| A | A1 | A2 | B | C |
|-----|------|------|------|-----|
| 74 | 100 | 108 | 6 | - |
| C1 | D | E | F | G |
| - | 34,6 | 9,6 | 4 | 21 |
| H | J | K | L | M |
| 8,5 | 10,2 | 11,4 | Ø2,1 | 9,5 |
| N | | | | |
| 1 | | | | |

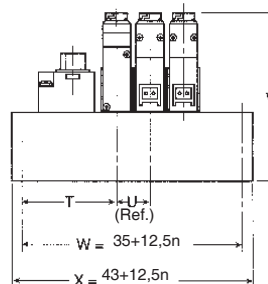
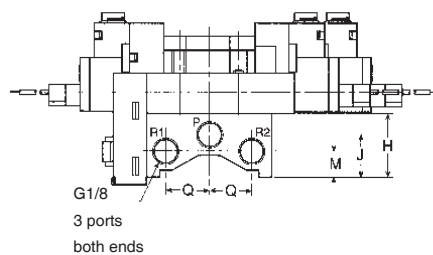
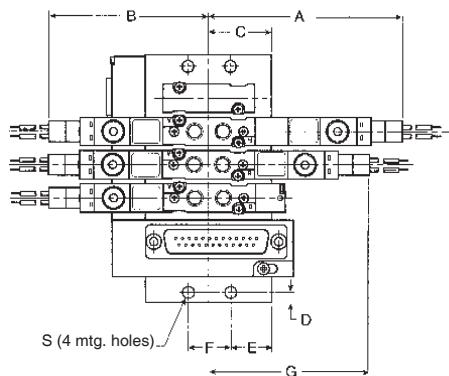
Dimensions in mm

A12R - Single and double operators - Body ported**A12R - Body ported**

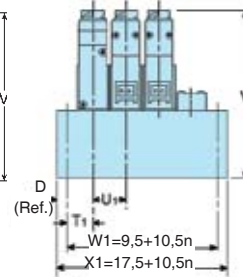
| A | A1 | A2 | B | C |
|------|------|------|------|------|
| 93,5 | 119 | 130 | 6 | - |
| C1 | D | E | F | G |
| - | 41,6 | 13,4 | 9 | 36 |
| H | J | K | L | M |
| 12 | 14 | 17,2 | Ø3,1 | 13,6 |
| N | | | | |
| 0,8 | | | | |

Dimensions in mm

A05R - Manifold - Valve body ports



MMCU...



MMFU...

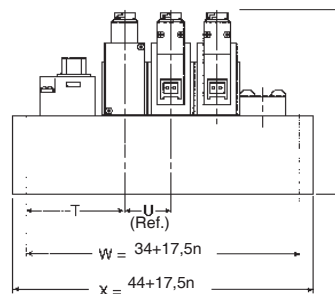
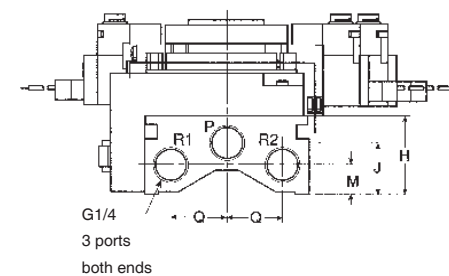
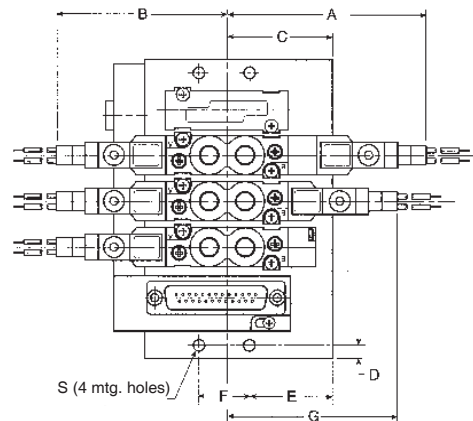
A05R - Manifold - Valve body port

| A | B | C | D | E |
|------|------|------|------|------|
| 64 | 56 | 23,5 | 4 | 15,5 |
| F | G | H | J | M |
| 16 | 56 | 24 | 15,5 | 9,5 |
| Q | S | T | T1 | U |
| 16 | Ø4,5 | 34 | 10 | 12,5 |
| U1 | V | | | |
| 10,5 | 63 | | | |

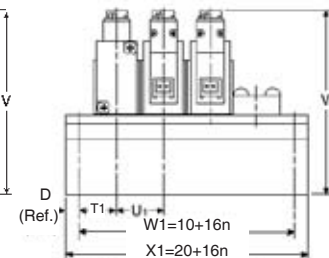
Dimensions in mm

n = number of stations

A12R - Manifold - Valve body ports



MMCU...



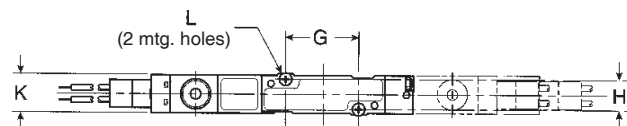
MMFU...

A12R - Manifold - Valve body port

| A | B | C | D | E |
|------|------|------|------|------|
| 77 | 66 | 29 | 5 | 19,2 |
| F | G | H | J | M |
| 19,6 | 66 | 27,5 | 18 | 10,5 |
| Q | S | T | T1 | U |
| 19,5 | Ø4,5 | 37,5 | 12,2 | 17,5 |
| U1 | V | | | |
| 16 | 70 | | | |

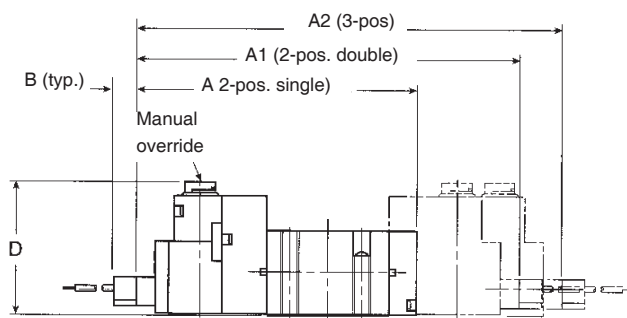
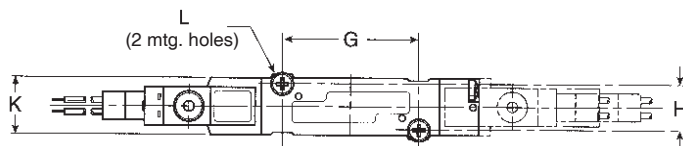
Dimensions in mm

n = number of stations

A05P - Single and double operators - Sub-base**A05P - Sub-base**

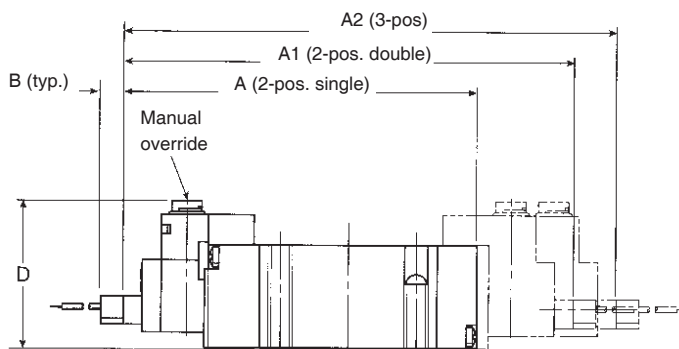
| A | A1 | A2 | B | D |
|----|-----|-----|------|------|
| 74 | 100 | 108 | 6 | 35,1 |
| G | H | K | L | |
| 19 | 8,5 | 10 | Ø2,1 | |

Dimensions in mm

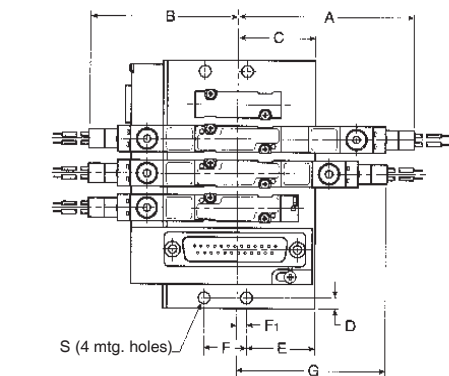
**A12P - Single and double operators - Sub-base****A12P - Sub-base**

| A | A1 | A2 | B | D |
|------|-----|-----|------|------|
| 93,5 | 119 | 130 | 6 | 39,1 |
| G | H | K | L | |
| 34 | 12 | 15 | Ø3,1 | |

Dimensions in mm



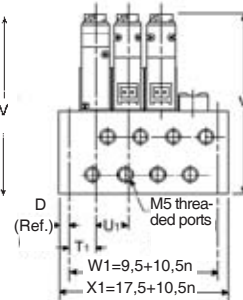
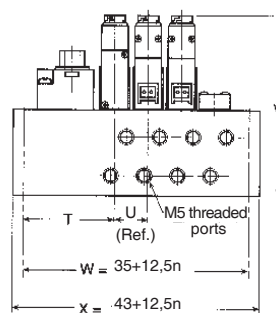
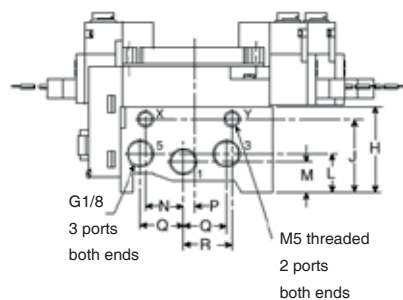
A05P - Manifold - Side ports



A05P - Manifold - Side ports

| A | B | C | D | E |
|------|------|------|----|------|
| 64 | 56 | 30,2 | 4 | 25,5 |
| F | F1 | G | H | J |
| 16 | 4,7 | 56 | 32 | 28 |
| L | M | N | P | O |
| 14,5 | 11,5 | 14 | 3 | 16 |
| R | S | T | T1 | U |
| 18 | Ø4,5 | 33,8 | 10 | 12,5 |
| U1 | V | | | |
| 10,5 | 67 | | | |

Dimensions in mm

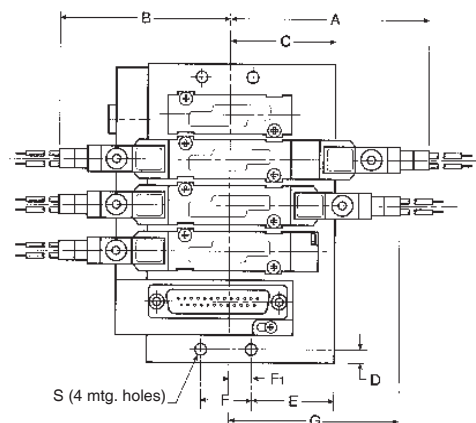


n = number of stations

MMCS...

MMFS...

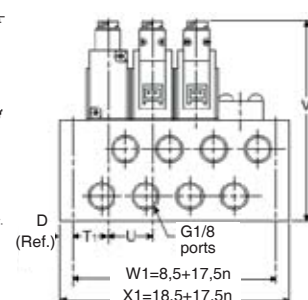
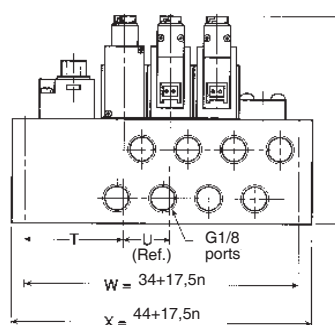
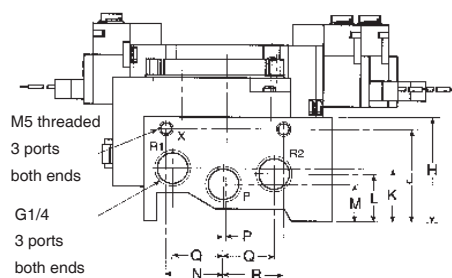
A12P - Manifolds - Side ports



A12P - Manifold - Side ports

| A | B | C | D | E |
|------|----|------|------|------|
| 77 | 66 | 40,4 | 5 | 31,7 |
| F | F1 | G | H | J |
| 19,6 | 11 | 66 | 39,5 | 35 |
| K | L | M | N | P |
| 20,5 | 18 | 14 | 22 | 1 |
| Q | R | S | T | T1 |
| 19,5 | 23 | Ø4,5 | 37,2 | 12,7 |
| U | V | | | |
| 17,5 | 79 | | | |

Dimensions in mm



n = number of stations

MMCS...

MMFS...