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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.

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ADEX Miniature Directional Control Valves

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.

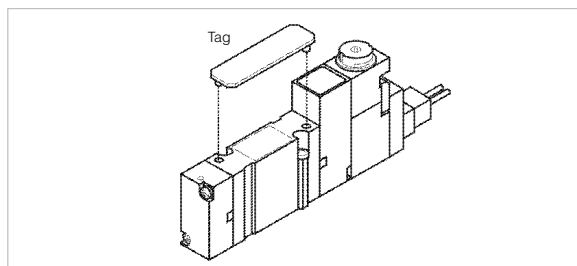
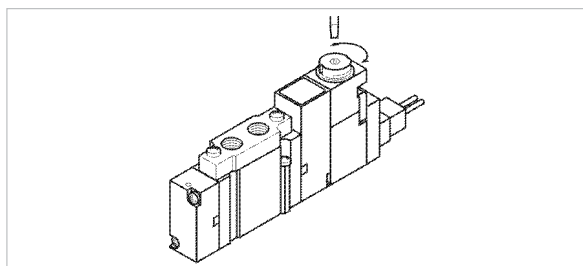
Unlike conventional exhaust systems, exhaust air from pilot valve is not directly discharged to outside. This takes to prevent air contamination in the atmosphere.

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.



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ADEX Miniature Directional Control Valves

In-line IEM Valves



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

Diameter of controlled cylinder

Pressure : 5 bar

Load factor : 0.5

Cylinder speed m/s :

0,15 0,30 0,45 0,60 0,75 0,15 0,30 0,45 0,60 0,75

Tube length : 1 m

Tube diameter : A05 : 6 x 4 mm

A12 : 8 x 6 mm

[illegible]

ADEX Miniature Directional Control Valves

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

Diameter of controlled cylinder

Pressure : 5 bar

Load factor : 0.5

Cylinder speed m/s :

0,15 0,30 0,45 0,60 0,75 0,15 0,30 0,45 0,60 0,75

Tube lenght : 1 m

Tube diameter : A05 : 6 x 4 mm

A12 : 8 x 6 mm

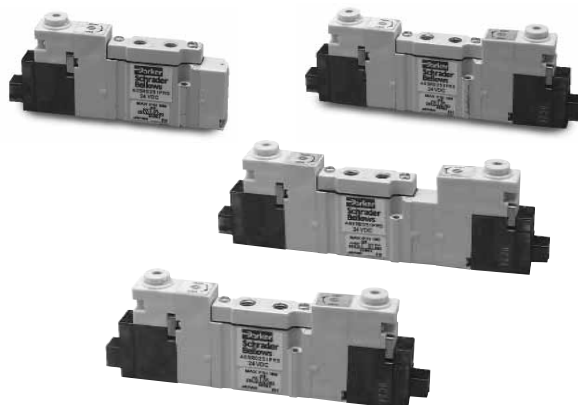
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ADEX Miniature Directional Control Valves

A05•/A12•

- 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



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ADEX Miniature Directional Control Valves

A05R/A12R Series
In-line / IEM mounting type

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

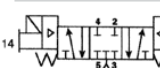
Electrically actuated 5/2 double solenoid



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

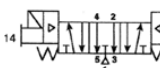
Electrically actuated 5/3 closed centre



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

Electrically actuated 5/3 vented centre

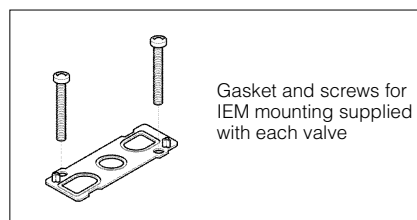


Symbol	Threaded connection	Voltage	Order code
	M5	24 VDC	A05RE351PM5MF
	G1/8	24 VDC	A12RE351PG1MF

Electrically actuated 5/3 pressurised centre



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



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ADEX Miniature Directional Control Valves

A05R/A12R Series
In-line / IEM mounting type

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 ¹ / ₈	A12	MMFU4A12G
6	M5	A05	MMFU6A05G
	G ¹ / ₈	A12	MMFU6A12G
8	M5	A05	MMFU8A05G
	G ¹ / ₈	A12	MMFU8A12G
10	M5	A05	MMFU10A05G
	G ¹ / ₈	A12	MMFU10A12G
12	M5	A05	MMFU12A05G
	G ¹ / ₈	A12	MMFU12A12G

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



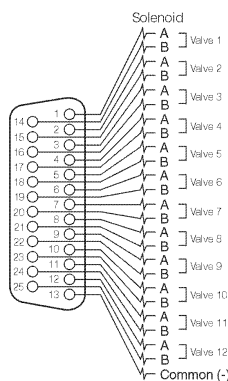
No. of stations	Port size	Size	Order Code
4	M5	A05	MMCU4A05G
	G ¹ / ₈	A12	MMCU4A12G
6	M5	A05	MMCU6A05G
	G ¹ / ₈	A12	MMCU6A12G
8	M5	A05	MMCU8A05G
	G ¹ / ₈	A12	MMCU8A12G
10	M5	A05	MMCU10A05G
	G ¹ / ₈	A12	MMCU10A12G
12	M5	A05	MMCU12A05G
	G ¹ / ₈	A12	MMCU12A12G

Collective wiring add-on module

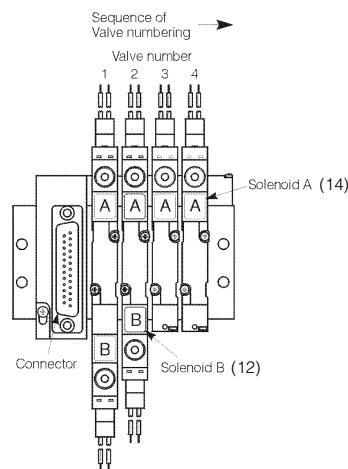


No. of stations	Size	Order Code
4	A05	MCS4A05PDL
	A12	MCS4A12PDL
6	A05	MCS6A05PDL
	A12	MCS6A12PDL
8	A05	MCS8A05PDL
	A12	MCS8A12PDL
10	A05	MCS10A05PDL
	A12	MCS10A12PDL
12	A05	MCS12A05PDL
	A12	MCS12A12PDL

Collective wiring pin mapping



Pin map for Sub-D25 connector



Valve and solenoid addresses



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ADEX Miniature Directional Control Valves

A05P/A12P Series Sub-base mounting valves

Main data for directional control valves A05P/A12P series

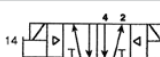
Electrically actuated 5/2 single solenoid



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

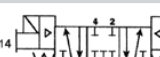
Electrically actuated 5/2 double solenoid



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

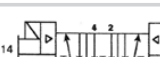
Electrically actuated 5/3 closed centre



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

Electrically actuated 5/3 vented centre

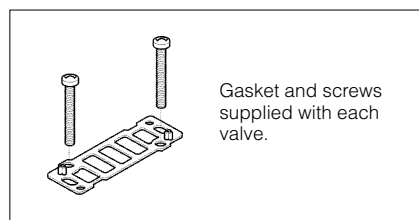


Symbol	Voltage	Size	Order code
	24 VDC	A05	A05PE351P
	24 VDC	A12	A12PE351P

Electrically actuated 5/3 pressurised centre



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



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ADEX Miniature Directional Control Valves

A05P/A12P Series Manifold sub-base mounting

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



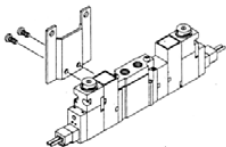
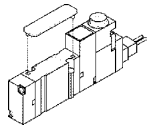
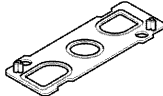
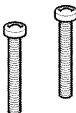
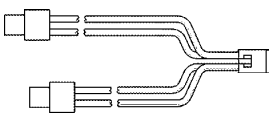
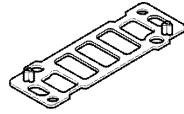
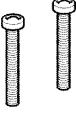
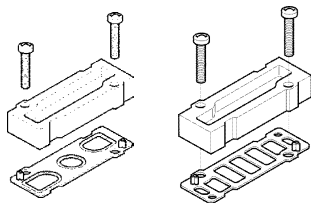
No. of stations	Size	Order Code
4	A05	MCS4A05PDL
	A12	MCS4A12PDL
6	A05	MCS6A05PDL
	A12	MCS6A12PDL
8	A05	MCS8A05PDL
	A12	MCS8A12PDL
10	A05	MCS10A05PDL
	A12	MCS10A12PDL
12	A05	MCS12A05PDL
	A12	MCS12A12PDL

For wiring pin mapping see page 8

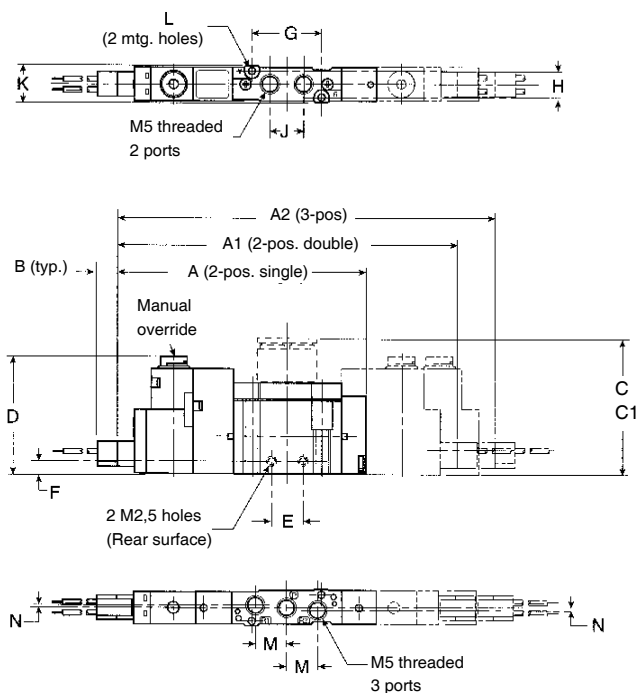
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ADEX Miniature Directional Control Valves

A05•/A12• Series Mounting and wiring accessories

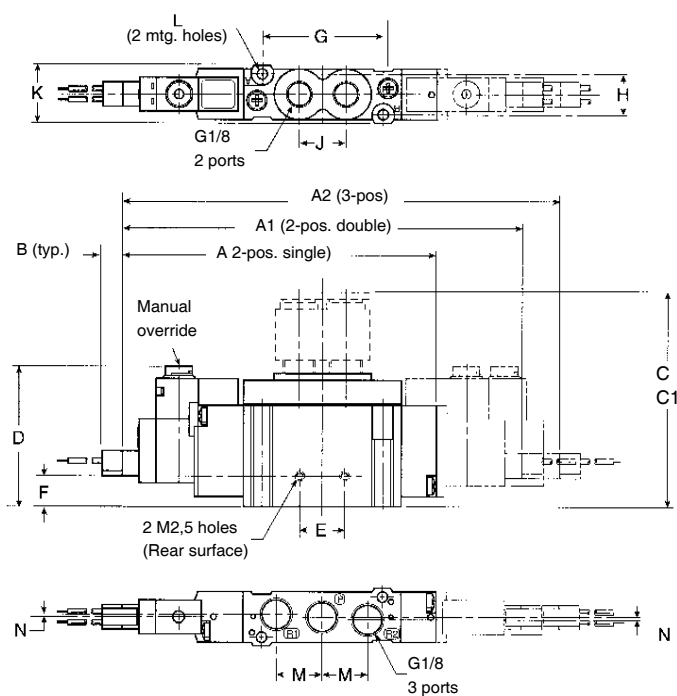
	Description	Order code
	Connector with lead wire black (-), red (+), length 500mm	A05PDCCL5
	Connector with lead wire black (-), red (+), length 1000mm	A05PDCCL10
	Mounting bracket A05R (1 bracket with 2 screws)	A05RBS
	Mounting bracket A12R (1 bracket with 2 screws)	A12RBS
	Identification tag for sub-base 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				

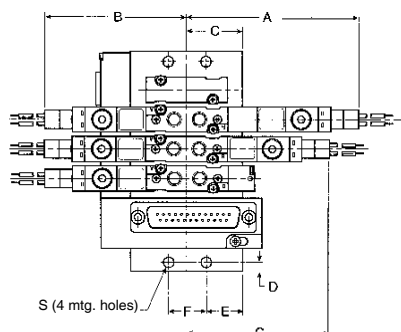
Dimensions in mm

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ADEX Miniature Directional Control Valves

A05R/A12R IEM mounted in-line valves Dimensions

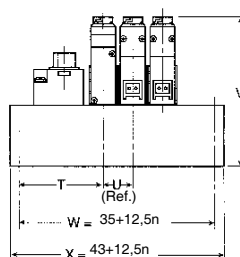
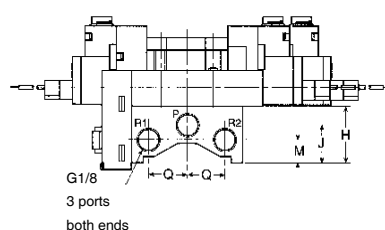
A05R - Manifold - Valve body ports



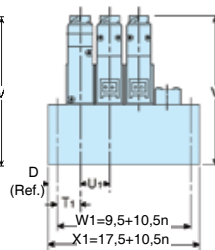
A05R - Manifold - Valve body port

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



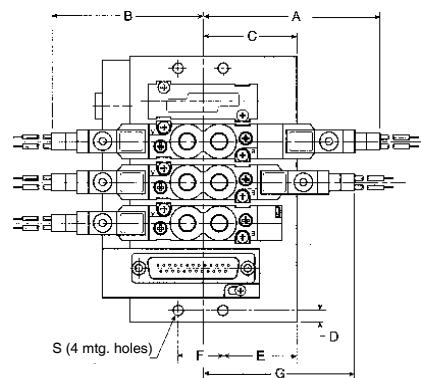
MMCU...



MMFU...

n = number of stations

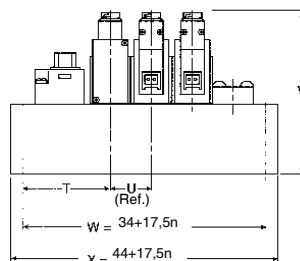
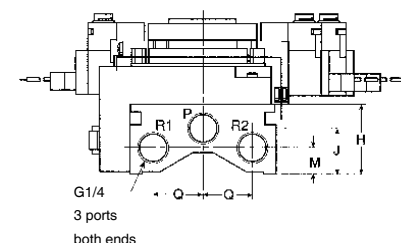
A12R - Manifold - Valve body ports



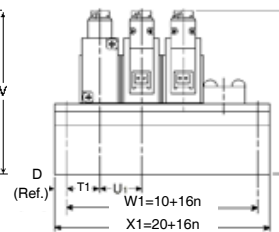
A12R - Manifold - Valve body port

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



MMCU...



MMFU...

n = number of stations

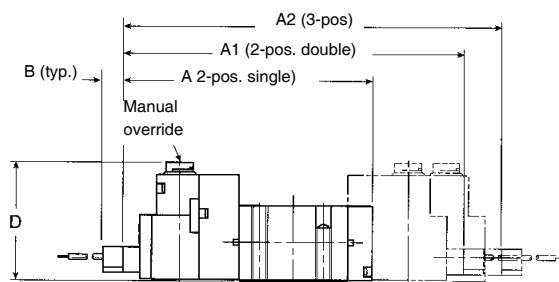
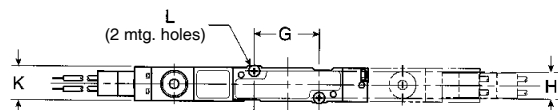

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ADEX Miniature Directional Control Valves

A05P/A12P sub-base valves Dimensions

A05P - Single and double operators - Sub-base

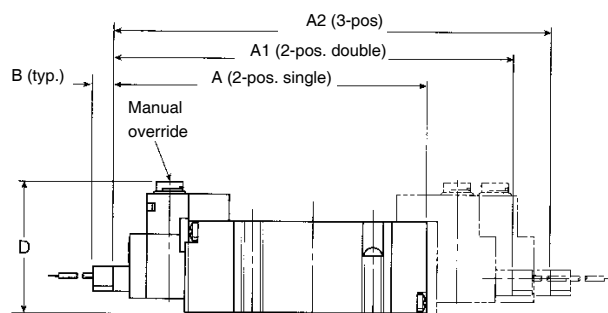
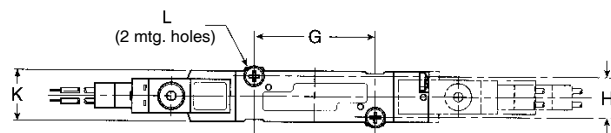


A05P - Sub-base

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

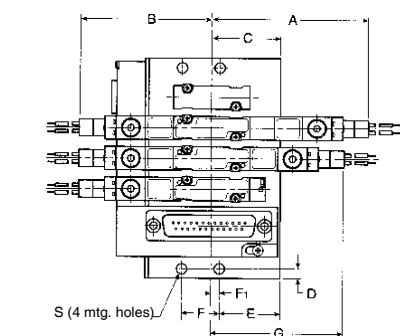


PDE2622TCUK

ADEX Miniature Directional Control Valves

A05P/A12P manifolds Dimensions

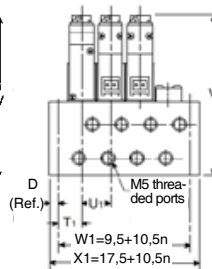
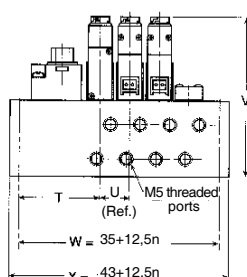
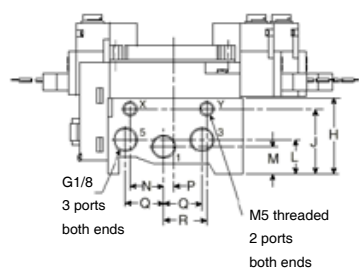
A05P - Manifold - Side ports



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

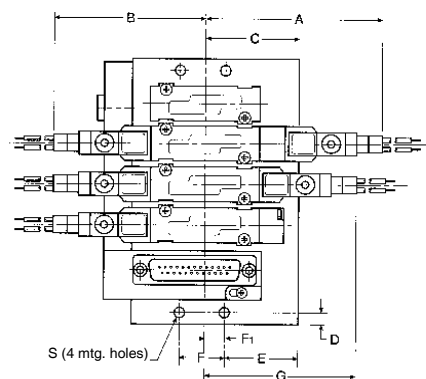


n = number of stations

MMCS...

MMFS...

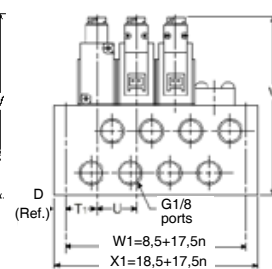
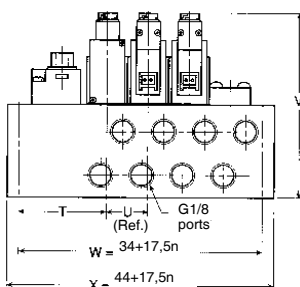
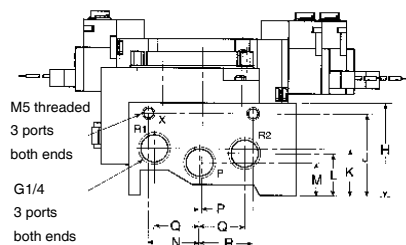
A12P - Manifolds - Side ports



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...



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