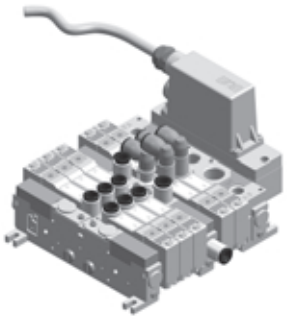
The new ComboBox valves are the result of long reflections regarding the requirements of the modern user, the current market demands, the ever increasing needs in the ergonomical and ecological field. The available combination possibilities of the new ComboBox series are impressing; the same battery (from 2 to 20 valves) can house valves with different functions; different controls, different pressures including vacuum; intermediate plates and end plates of different kinds can be housed; wiring harnesses such as flying cables, plug-in and serial connections can be used.
Safety and reliability are the two indispensible "must". These valves are according to protection degree IP 65 and are realized with materials which are perfectly in line with the latest safety standard; they are conceived and constructed to achieve at least 50 milion cycles, with or without lubrification, and fully satisfy the current market demands.

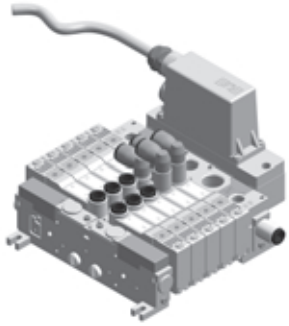
TECHNICAL CHARACTERISTICS

Switching system: spool type
Body: zamak
Heads: plastic
Coverings: self-extinguishing plastic
Ambient temperature: -15°C ÷ + 50°C
Fluid temperature: + 50°C max
Fluid: industrial air or neutral gases, with or without lubrification
Seals: nitrile rubber

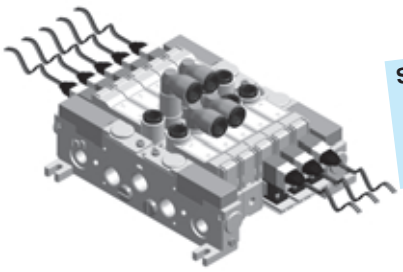
Control: pneumatic or indirect electropneumatic
Ways/position: 5/2, 5/3, 3/2 + 3/2
Max. pressure: electric control 9 bar
pneumatic control 10 bar
Coils: DE-...series (U04) with voltage 24 Vdc. 1,35 W
upon request 12 Vdc. 1,35 W
In case of external air supply of the electropilot or pneumatic control, the valves can be operated both with compressed air and with vacuum (versions 3/2+3/2 excluded).



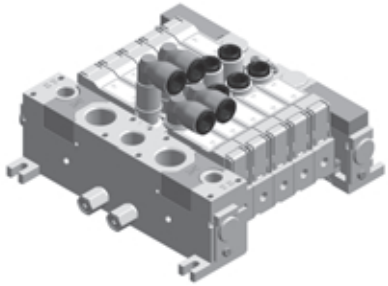
Series **PSP**



Series **PSP**



Series **PSC**

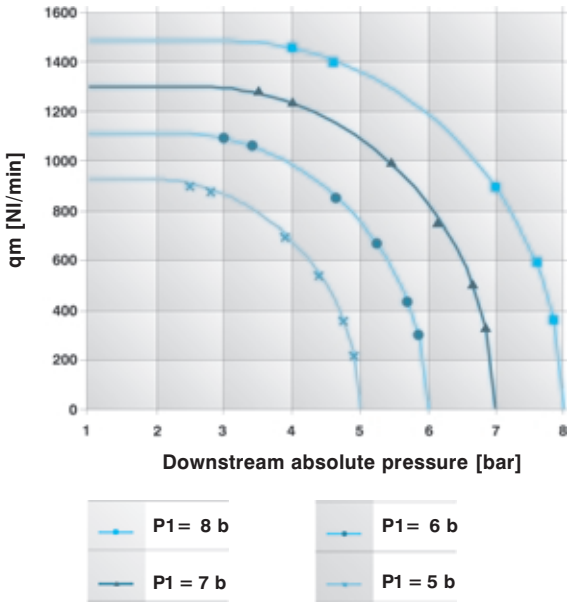


Series **PSR**

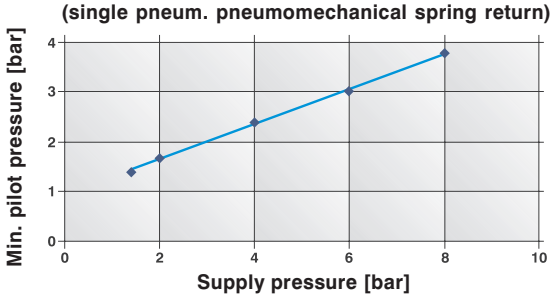
Flow rates according to fittings:

straight fitting for Ø 8 mm pipe:	**830** Nl/min.
90° elbow fitting for Ø 8 mm pipe:	**700** Nl/min.
straight fitting for Ø 6 mm pipe:	**510** Nl/min.
90° elbow fitting for Ø 6 mm pipe:	**370** Nl/min.
straight fitting for Ø 4 mm pipe:	**200** Nl/min.
90° elbow fitting for Ø 4 mm pipe:	**140** Nl/min.

Flow rate according to downstream absolute pressure

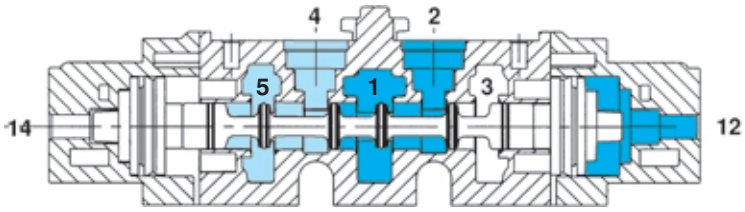


Pilot signal characteristics
(single pneum. pneumomechanical spring return)

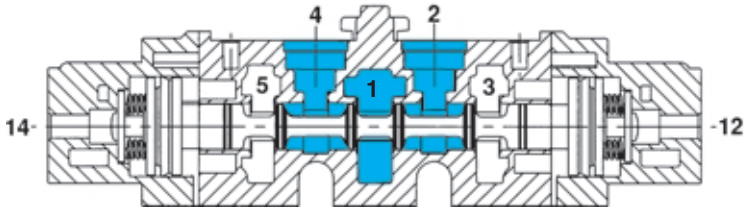


Valves

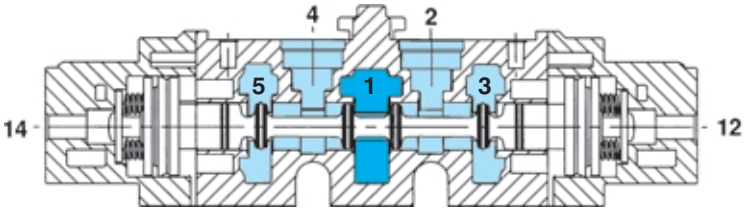
5/2



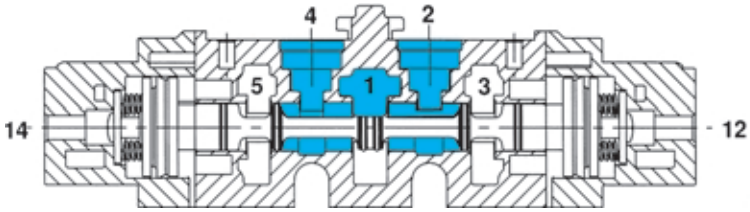
5/3 closed centres



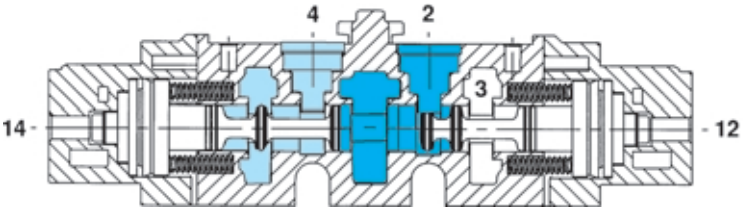
5/3 open centres



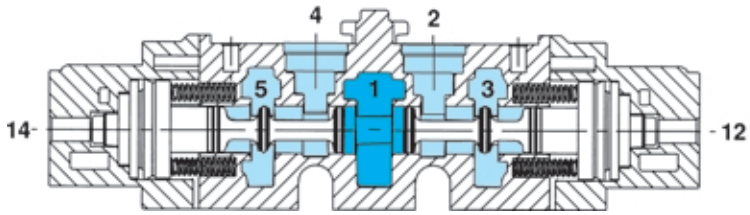
5/3 pressurized centres



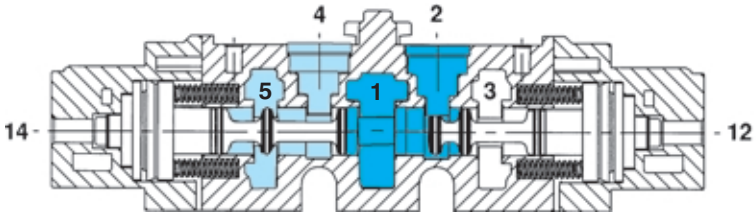
3/2 + 3/2 n.o.



3/2 + 3/2 n.c.

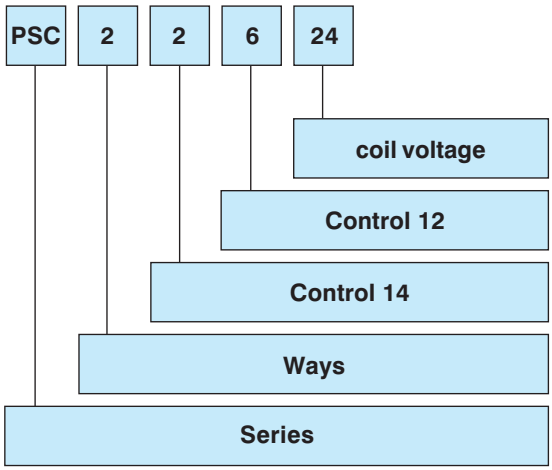


3/2 + 3/2 n.c. - n.o.



1= Air Supply | 2 - 4 = Consumptions | 3 - 5 = Exhausts | 12 = Return | 14 = Control

Codification key valve



The valves are supplied separately in boxes containing:
- valve body with pilots
- coil with LED
- coil protecting covers
- fitting retaining plates

SERIES

PSC series - Separate wires
PSP series - Plug-in
PSR series - Pneumatic

WAYS

2 = 5/2
3 = 5/3 c.c.
4 = 5/3 o.c.
5 = 5/3 p.c.
6 = 3/2 + 3/2 NC-NC
7 = 3/2 + 3/2 NC-NO
8 = 3/2 + 3/2 NO-NO

CONTROL 14

2 = Amplified pneumatic
6 = Amplified electric

CONTROL 12

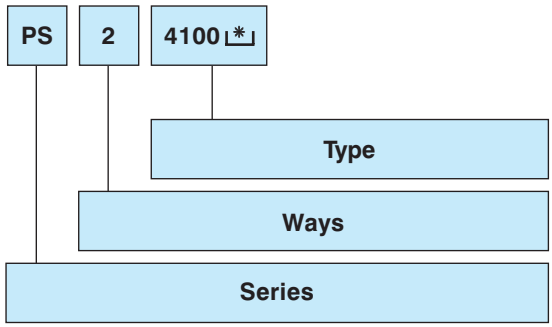
0 = pneumatic spring
1 = mechanical spring
2 = amplified pneumatic
3 = not amplified pneumatic
6 = amplified electric
7 = not amplified electric

COIL VOLTAGE

PSC and **PSP** series coils assembled with standard supplied led:
24 = **24V** (standard)
12 = **12V** (upon request)

On PSP series a maximum of 20 coils can be used, restriction estabilished by the connection modules.

Codification key plate



SERIES

PSC series - Separate wires
PSP series - Plug-in
PSR series - Pneumatic

WAYS

2 = 5/2
3 = 5/3 c.c.
4 = 5/3 o.c.
5 = 5/3 p.c.
6 = 3/2 + 3/2 NC-NC
7 = 3/2 + 3/2 NC-NO
8 = 3/2 + 3/2 NO-NO

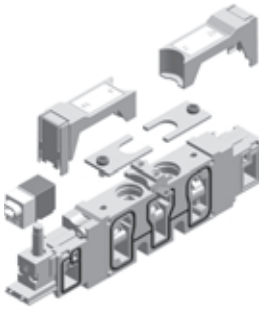
TYPE

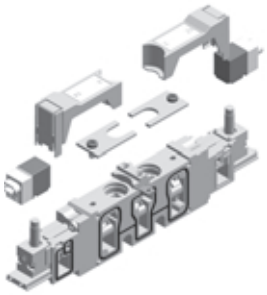
4100 = 26 mm end plate with internal pilot supply port
4200 = 26 mm end plate with external pilot supply port
5000 = Blank end plate
5100 = 14,5 mm end plate with internal pilot supply port
5200 = 14,5 mm end plate with external pilot supply port
5300 = 14,5 mm intermediate plate, closed air supply, open exhausts
5310 = 14,5 mm intermediate plate, open air supply, closed exhausts
5320 = 14,5 mm intermediate plate, completely closed
5330 = 14,5 mm intermediate plate, completely open (optional place in manifold)
5340 = 14,5 mm intermediate supply plate with internal pilot supply, closed exhausts
5350 = 14,5 mm intermediate supply plate with external pilot supply, closed exhausts
5360 = 14,5 mm intermediate supply plate with internal pilot supply, open exhausts
5370 = 14,5 mm intermediate supply plate with external pilot supply, open exhausts

*** Add suffix 1 in case you need intermediate plates (PS15300-PS15310-PS15320-PS15330) with closed pilot supply ports.**

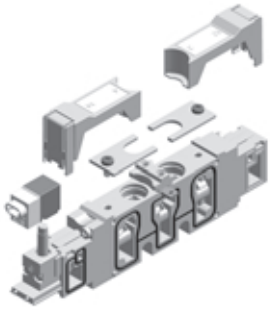
5/2 Single-double electric control

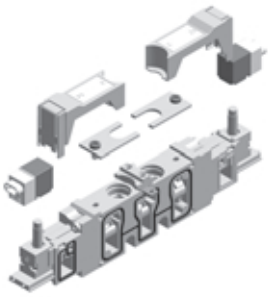
Series **PSP**

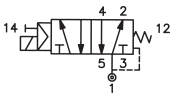
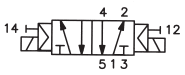
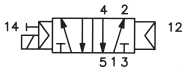
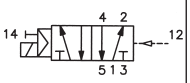




Series **PSC**



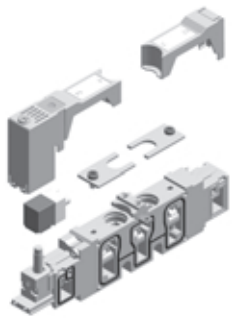


Symbol	Control 14	Return 12	Ways	Ø mm	Pressure bar	Capacity Nl/min.	Time ms energ.	Time ms de-energ.	Mass kg	Coil	Coil voltage	Part number
5/2 Single electric control, pneumomechanic spring return												
	Electric	pneumo-mechanic spring	5/2	6	1,8 ÷ 9	830	17	38	0,148	U04 DE series	24 V	**PSP26024**
											12 V	**PSP26012**
									0,143	U04 DE series	24 V	**PSC26024**
											12 V	**PSC26012**
5/2 Single electric control, mechanic spring return												
	Electric	mechanical spring	5/2	6	2,2 ÷ 9	830	15	50	0,148	U04 DE series	24 V	**PSP26124**
											12 V	**PSP26112**
									0,143	U04 DE series	24 V	**PSC26124**
											12 V	**PSC26112**
5/2 Double electric control												
	Electric	Electric	5/2	6	0,7 ÷ 9	830	11	11	0,160	U04 DE series	24 V	**PSP26624**
											12 V	**PSP26612**
									0,150	U04 DE series	24 V	**PSC26624**
5/2 Single electric control, amplified pneumatic return												
	Electric	amplified pneumatic	5/2	6	0,7 ÷ 9	830	11	5	0,148	U04 DE series	24 V	**PSP26224**
											12 V	**PSP26212**
									0,143	U04 DE series	24 V	**PSC26224**
											12 V	**PSC26212**
5/2 Single electric control, not amplified pneumatic return												
	Electric	not amplified pneumatic	5/2	6	1,1 ÷ 9	830	11	8	0,148	U04 DE series	24 V	**PSP26324**
											12 V	**PSP26312**
									0,143	U04 DE series	24 V	**PSC26324**
											12 V	**PSC26312**

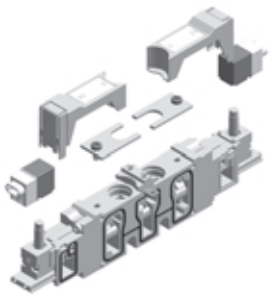
The part number of the solenoid valves include coils.
Manual override 1-2 positions (PSP) manual override 1 position (PSC).

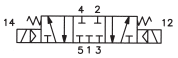
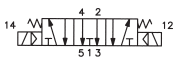
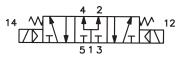
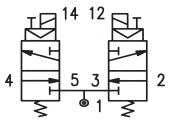
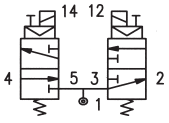
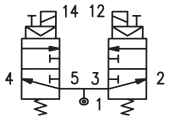
5/3 Closed centres - open centres - pressurized centres
3/2 + 3/2 electric control

Series **PSP**

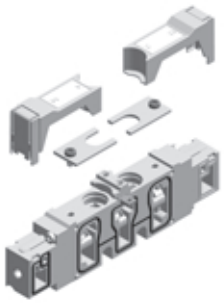


Series **PSC**

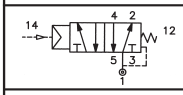
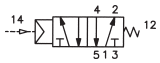
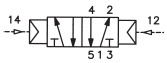
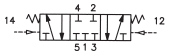
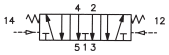
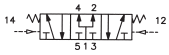


Symbol	Control 14	Return 12	Ways	Ø mm	Pressure bar	Capacity Nl/min.	Time ms energ.	Time ms de-energ.	Mass kg	Coil	Coil voltage	Part number
5/3 Closed centres - open centres - pressurized centres												
	Closed centres											
	Electric	Electric	5/3	6	2,2 ÷ 9	830	15	50	0,165	U04 DE series	24 V	**PSP36624**
											12 V	**PSP36612**
									0,155	U04 DE series	24 V	**PSC36624**
											12 V	**PSC36612**
	Open centres											
	Electric	Electric	5/3	6	2,2 ÷ 9	830	15	50	0,165	U04 DE series	24 V	**PSP46624**
											12 V	**PSP46612**
									0,155	U04 DE series	24 V	**PSC46624**
											12 V	**PSC46612**
	Pressurized centres											
	Electric	Electric	5/2	6	0,7 ÷ 9	830	15	50	0,160	U04 DE series	24 V	**PSP56624**
											12 V	**PSP56612**
									0,150	U04 DE series	24 V	**PSC56624**
											12 V	**PSC56612**
3/2 + 3/2 NC-NC amplified electric control												
	Electric amplified	Electric amplified	3/2 NC + 3/2 NC	6	2 ÷ 9	830	15	33	0,140	U04 DE series	24 V	**PSP66624**
											12 V	**PSP66612**
									0,140	U04 DE series	24 V	**PSC66624**
											12 V	**PSC66612**
3/2 + 3/2 NC-NO amplified electric control												
	Electric amplified	Electric amplified	3/2 NC + 3/2 NO	6	2 ÷ 9	830	15	33	0,140	U04 DE series	24 V	**PSP76624**
											12 V	**PSP76612**
									0,140	U04 DE series	24 V	**PSC76624**
											12 V	**PSC76612**
3/2 + 3/2 NO-NO amplified electric control												
	Electric amplified	Electric amplified	3/2 NO + 3/2 NO	6	2 ÷ 9	830	15	33	0,140	U04 DE series	24 V	**PSP86624**
											12 V	**PSP86612**
									0,140	U04 DE series	24 V	**PSC86624**
											12 V	**PSC86612**

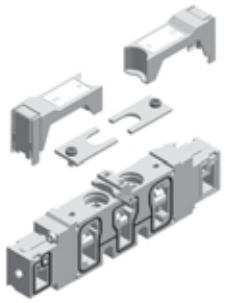
5/2 Single/double pneumatic control
5/3 Closed centres - open centres - pressurized centres pneumatic control



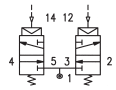
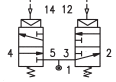
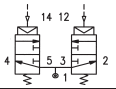
Series **PSR**

Symbol	Control 14	Return 12	ways	Ø mm	Pressure bar	Capacity Nl/min.	Time ms energ.	Time ms de-energ.	Mass kg	Part number
5/2 Single pneumatic control, pneumatic spring return										
	Pneumatic amplified	Pneumatic spring	5/2	6	1,7 ÷ 10	830	14	33	0,136	**PSR220**
5/2 Single pneumatic control, mechanical spring return										
	Pneumatic amplified	Mechanical spring	5/2	6	2,2 ÷ 10	830	12	45	0,136	**PSR221**
5/2 Double pneumatic control										
	Pneumatic amplified	Pneumatic amplified	5/2	6	0,7 ÷ 10	830	5	5	0,136	**PSR222**
5/2 Double pneumatic differential control										
	Pneumatic amplified	Pneumatic	5/2	6	1,1 ÷ 10	830	9	8	0,132	**PSR223**
5/3 Closed centres, double pneumatic control										
	Pneumatic amplified	Pneumatic amplified	5/3	6	2,2 ÷ 10	830	12	45	0,140	**PSR322**
5/3 Open centres, double pneumatic control										
	Pneumatic amplified	Pneumatic amplified	5/3	6	2,2 ÷ 10	830	12	45	0,145	**PSR422**
5/3 Pressurized centres, double pneumatic control										
	Pneumatic amplified	Pneumatic amplified	5/3	6	2,2 ÷ 10	830	12	45	0,140	**PSR522**

3/2 + 3/2 Double pneumatic control

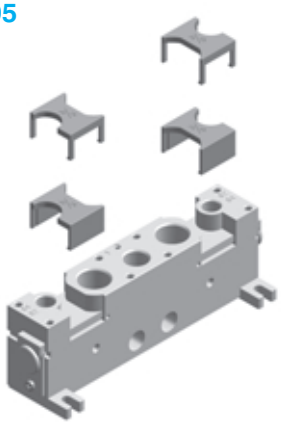


Series **PSR**

Symbol	Control 14	Return 12	Ø mm	Pressure bar	Capacity Nl/min.	Time ms energ.	Time ms de-energ.	Mass kg	Part number
	3/2 NC+3/2 NC Pneumatic amplified	Pneumatic amplified	6	2 ÷ 10	830	12	29	0,140	**PSR622**
	3/2 NC+3/2 NO Pneumatic amplified	Pneumatic amplified	6	2 ÷ 10	830	12	29	0,140	**PSR722**
	3/2 NO+3/2 NO Pneumatic amplified	Pneumatic amplified	6	2 ÷ 10	830	12	29	0,140	**PSR822**

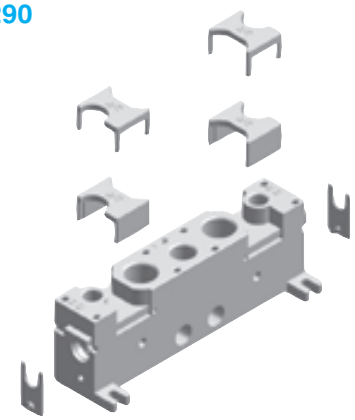
Valves

Inlet plate 26 mm, internal pilot supply.
Mass kg 0,295



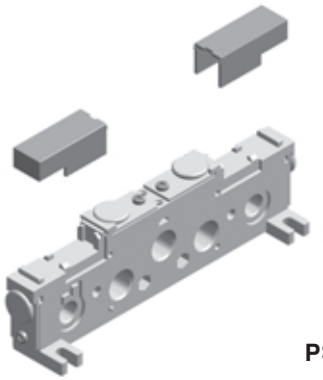
PS14100

Inlet plate 26 mm, external pilot supply.
Mass kg 0,290



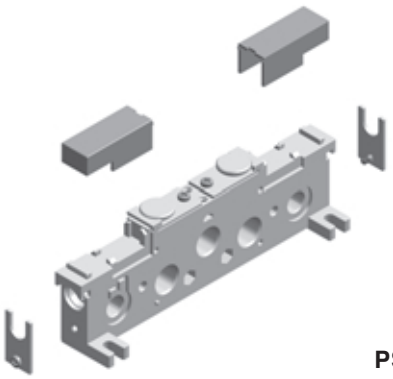
PS14200

Inlet plate 14,5 mm, internal pilot supply.
Mass kg 0,167



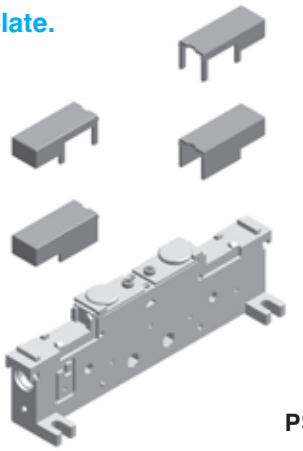
PS15100

Inlet plate 14,5 mm, external pilot supply.
Mass kg 0,162



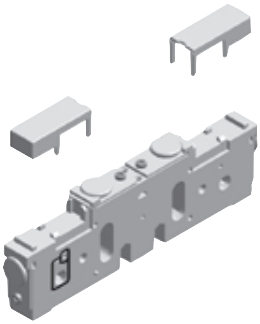
PS15200

Blank closing plate.
Mass kg 0,168



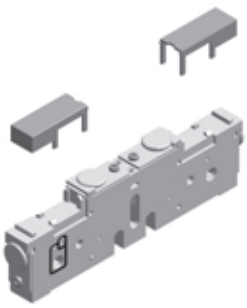
PS15000

Intermediate plate 14,5 mm, closed air supply open exhausts.
Mass kg 0,167



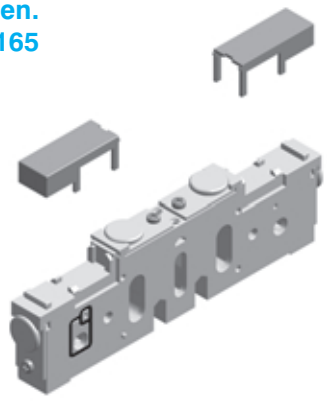
PS15300*

Intermediate plate 14,5 mm, open air supply closed exhausts.
Mass kg 0,170



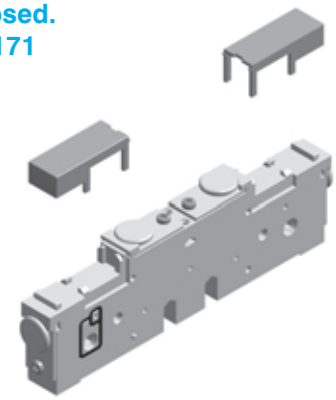
PS15310*

Intermediate plate 14,5 mm, air supply and exhaust open.
Mass kg 0,165



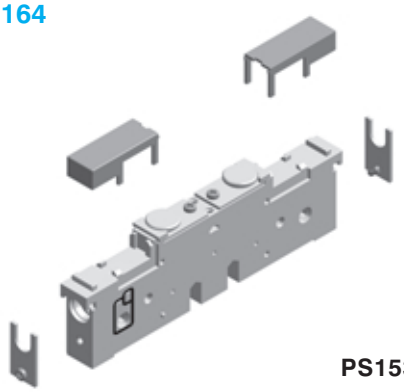
PS15330*

Intermediate plate 14,5 mm, air supply and exhaust closed.
Mass kg 0,171



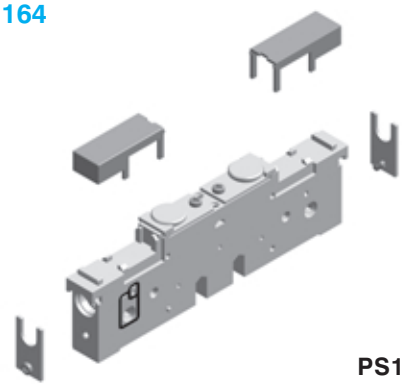
PS15320*

Intermediate supply plate with closed exhaust and internal pilot supply.
Mass kg 0,164



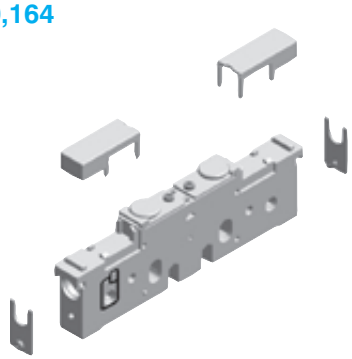
PS15340

Intermediate supply plate with closed exhaust and external pilot supply.
Mass kg 0,164



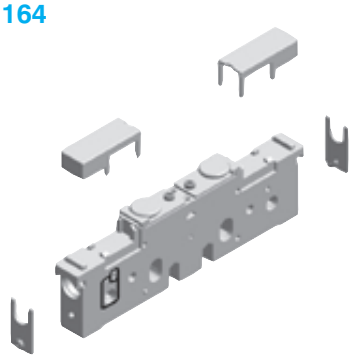
PS15350

Intermediate supply plate with open exhausts and internal pilot supply.
Mass kg 0,164



PS15360

Intermediate supply plate with open exhausts and external pilot supply.
Mass kg 0,164

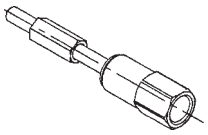


PS15370

*For intermediate plate with closed pilot supply ports add suffix 1 to part number.
The intermediate plate occupies one valve place, please keep this in mind for a correct order of the modular tie-rods.

Air supply of the electropilots by means of the end plates both for internal and external air supply. In case there are two different working pressures at the end plates, it is possible to supply all pilots with one of the two pressures (in general with the higher one) or to supply the pilots of each valve group with the working pressure of same. This can be realized by choosing the correct separation plate.
The same is valid if the pressures are more than two: in this case it is necessary to use intermediate supply plates suitably coupled with the separation plates.

Tie-rods with hexagonal ends (package 50 pcs.)
Mass gr. 15

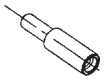


PSK100145

Counter tie-rods (package 50 pcs.)
Mass gr. 3,5

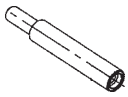
PSK300145

Modular tie-rods, L1 = 14,5 mm each place (package 100 pcs.)
Mass gr. 2,7



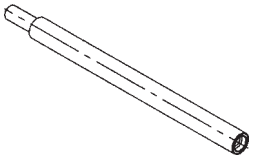
PSK200145

Modular tie-rods, L2 = 29 mm for 2 places (package 100 pcs.)
Mass gr. 6



PSK200290

Modular tie-rods, L5 = 72,5 mm for 5 places (package 100 pcs.)
Mass gr. 15,3



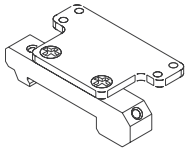
PSK200725

Micro double-pole flying connector

	Stripped and tinned wires with protection guard	gr. 4,7 gr. 9,3	**D-530C-100** (wire length 100 cm) **D-530C-200** (wire length 200 cm)

(Package 100 pcs.)

DIN rail adapter plate

	with fixing screws	gr. 66	**PSK401**

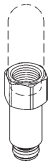
(Package 2 pcs.) **suitable for all models**

Plug

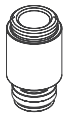
	gr. 2	**GZR-100**

(Package 2 pcs.) **suitable for all models**

Fitting seat reducing plug - gas thread for silencer assembly

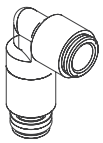
	G 1/8	gr. 11	**GZR-101**
	G 1/4	gr. 31,5	**GZR-102**

Straight connector (Package 50 pcs.)



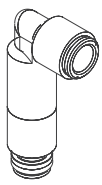
Tube mm	Mass gr.	Part number
4	11,7	**GZR-V10004**
6	11,5	**GZR-V10006**
8	11,5	**GZR-V10008**

Low 90° elbow connector (package 50 pcs.)



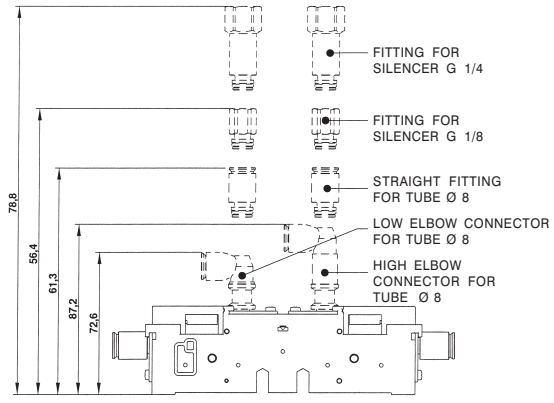
Tube mm	Mass gr.	Part number
4	12,6	**GZR-V20004**
6	13,6	**GZR-V20006**
8	15	**GZR-V20008**

High 90° elbow connector (package 50 pcs.)

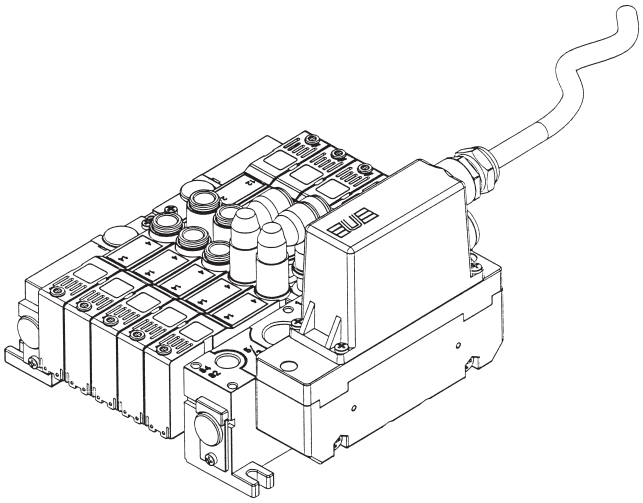


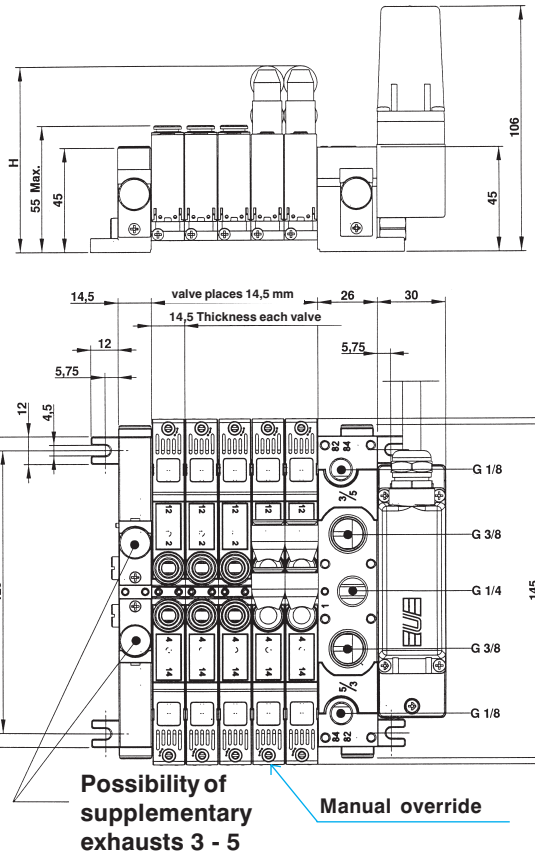
Tube mm	Mass gr.	Part number
4	16,6	**GZR-V20L004**
6	20,3	**GZR-V20L006**
8	27	**GZR-V20L008**

Overall dimensions between the various types of fittings on intermediate plates for exhausts 3-5



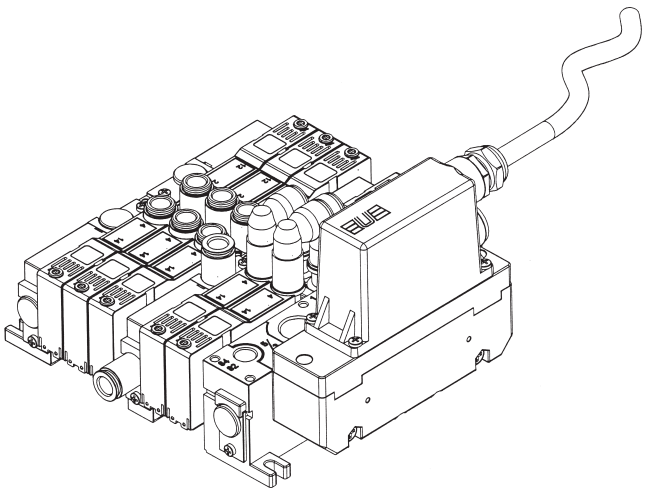
PSP Series with inlet plate 26 mm and closing plate 14,5 mm with male and female connector

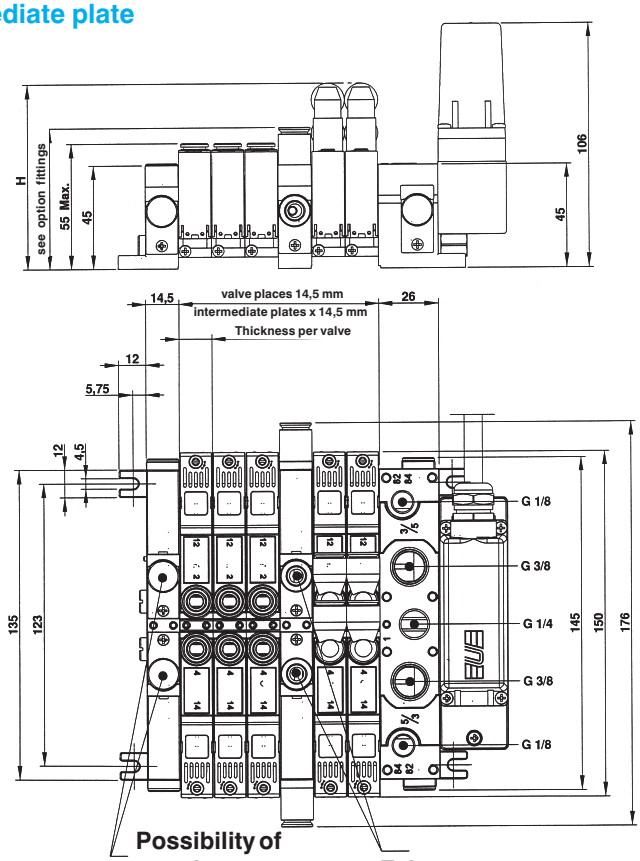




Tube Ø	H
4	72,6
6	76,6
8	80,5

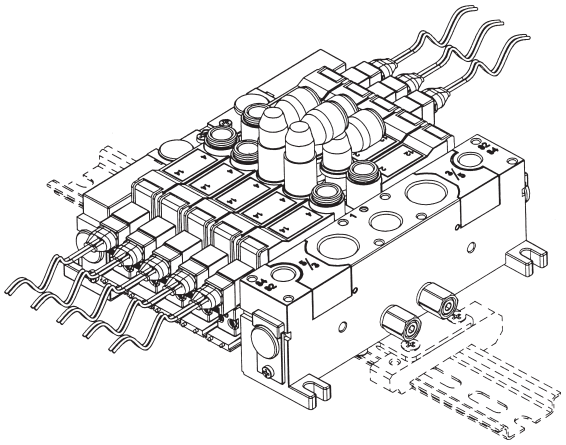
PSP Series - as previously with the addition of intermediate plate

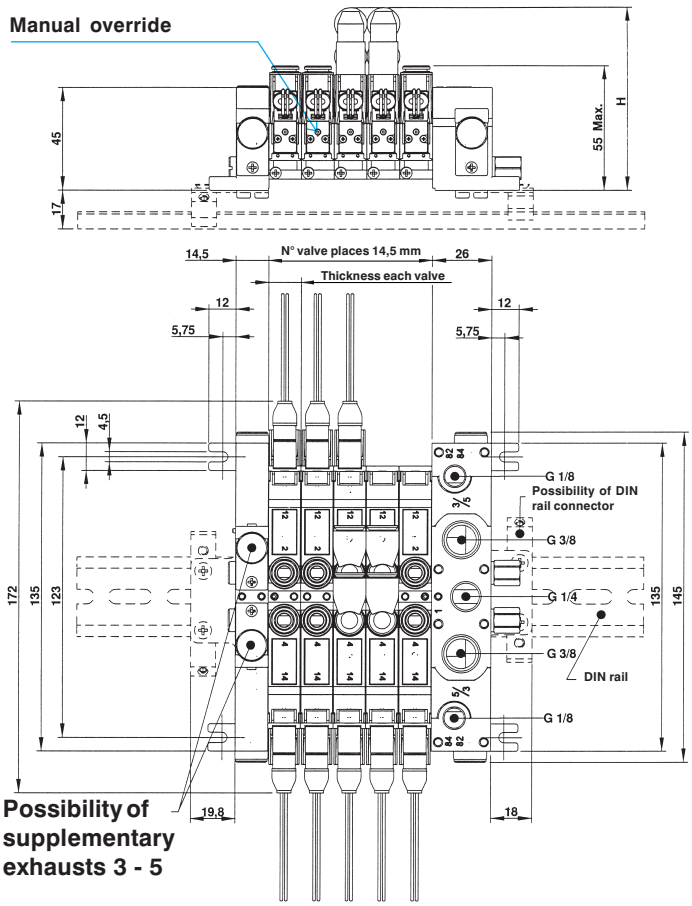




Tube Ø	H
4	72,6
6	76,6
8	80,5

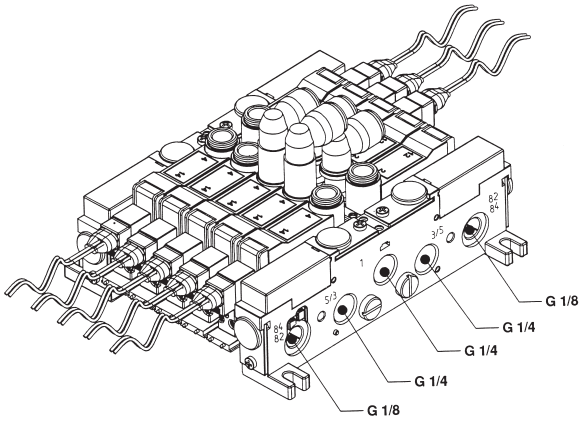
PSC Series with inlet plate 26 mm and end plate 14,5 mm with DIN rail

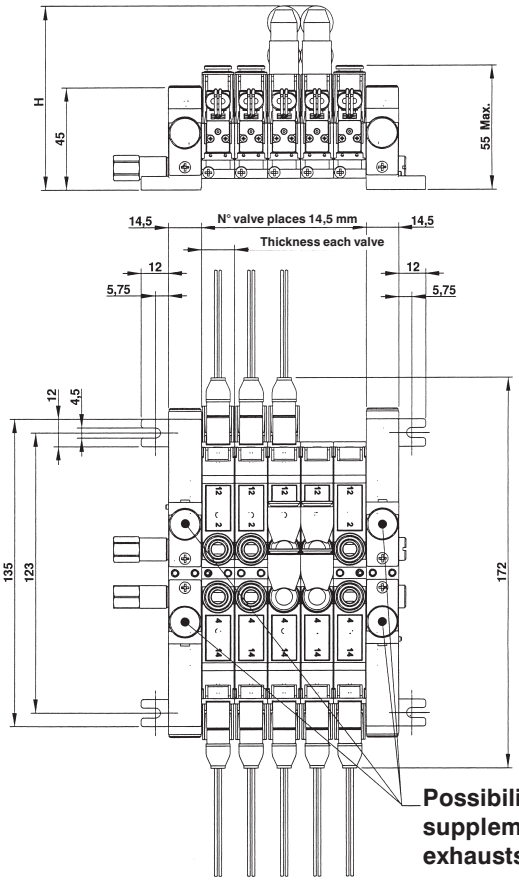




Tube Ø	H
4	72,6
6	76,6
8	80,5

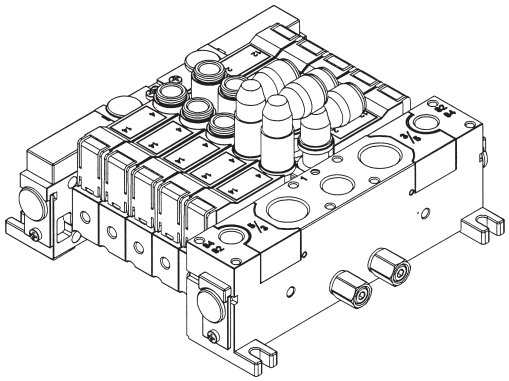
PSC Series with inlet and end plate 14,5 mm

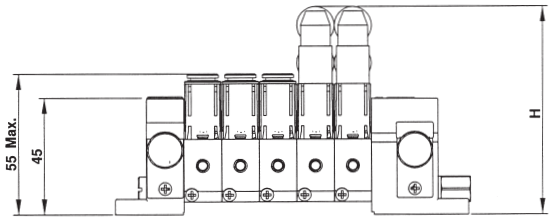


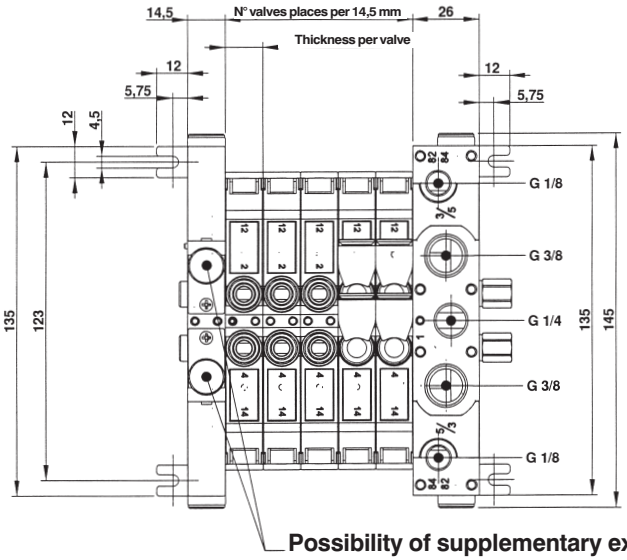


Tube Ø	H
4	72,6
6	76,6
8	80,5

PSR Series with inlet plate 26 mm and end plate 14,5 mm

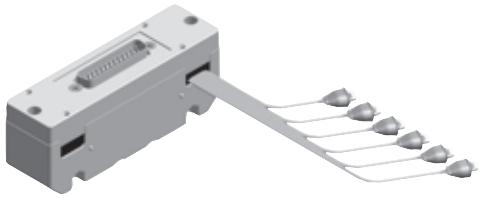
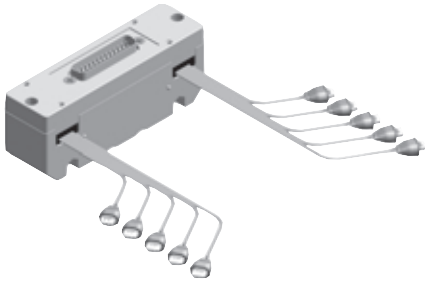




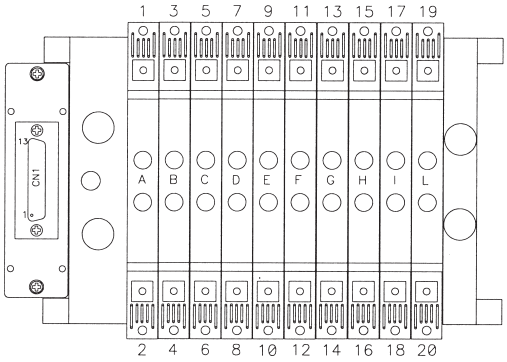


Tube Ø	H
4	72,6
6	76,6
8	80,5

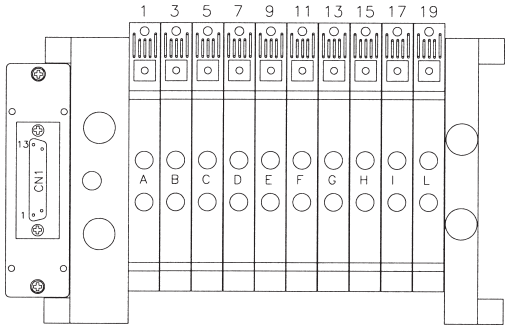
Valves

Type	Remarks		Mass gr	Part number
Male connector 25 poles pre-wired				
	monostable valves (M)	max 6M	96	**TIM06M**
		max 10M	103	**TIM10M**
		max 20M	127	**TIM 20M**
	bistable valves (B)	max 6B	110	**TIM06B**
		max 10B	118	**TIM10B**

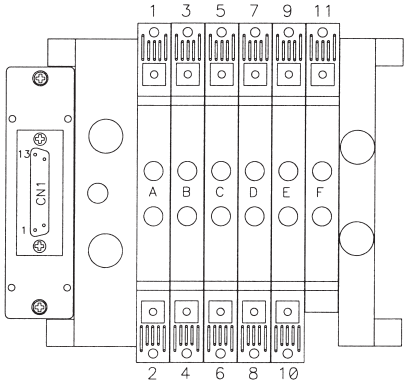
Example identifying the position in a manifold assembly type A, max. 10 valves, only bistable, use module TIM10B



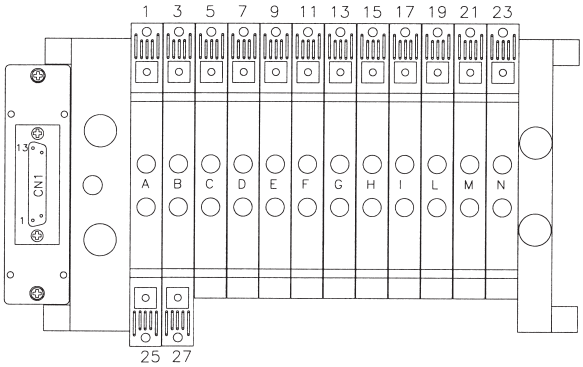
Example identifying the position in a manifold assembly type B, max. 20 valves, only monostable, use module TIM10M



Example identifying the position in a manifold assembly type C, mixed, bistable-monostable, max. 20 out, use module TIM06B



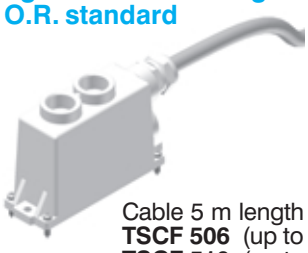
Example identifying the position in a manifold assembly type D, mixed, bistable+monostable, max. 20 out, use module TIM20M, the connection of the two bistable coils will take place after the last monostable one.



Connectors without cable

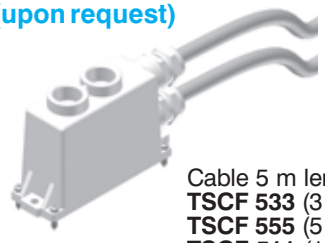
TSCF 000

Flying female connector sub D single cable according to CEI 20-22 II O.R. standard



Cable 5 m length
TSCF 506 (up to 6 coils)
TSCF 510 (up to 10 coils)
TSCF 520 (up to 20 coils)
Cable 10 m length
TSCF 106 (up to 6 coils)
TSCF 110 (up to 10 coils)
TSCF 120 (up to 20 coils)

Flying female connector sub D double cable according to CEI 20-22 II O.R. standard (upon request)



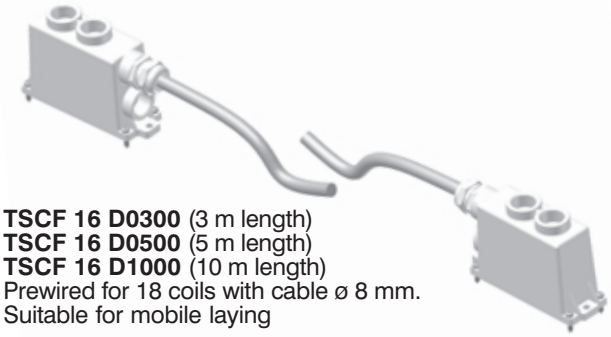
Cable 5 m length
TSCF 533 (3+3 coils)
TSCF 555 (5+5 coils)
TSCF 511 (10+10 coils)
Cable 10 m length
TSCF 133 (3+3 coils)
TSCF 155 (5+5 coils)
TSCF 111 (10+10 coils)

Flying female connector sub D according to CEI 20-22 II O.R. standard

TSCF 16 S0300 (3 m length)
TSCF 16 S0500 (5 m length)
TSCF 16 S1000 (10 m length)
Prewired for 18 coils with cable ø 8 mm.
Suitable for mobile laying

Upon request
TSCF 24 S0300
TSCF 24 S0500
TSCF 24 S1000
Prewired for 24 coils

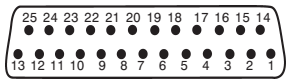
Flying male/female connector sub D according to CEI 20-22 II O.R. standard



TSCF 16 D0300 (3 m length)
TSCF 16 D0500 (5 m length)
TSCF 16 D1000 (10 m length)
Prewired for 18 coils with cable ø 8 mm.
Suitable for mobile laying

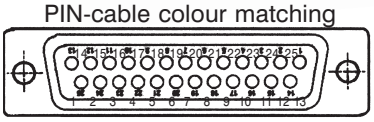
Table relating to electric connections

Manifold side
PIN-coil matching



Male connector

Cable side
PIN-cable colour matching



Female connector

PIN num.	coil	Coil operation side 14	12	side 14	12	Cable colours CN1 Pin	Function TSCF24S	TSCF24S	Function TSCF16_	TSCF16S TSCF16D	Function TSCF5__	TSCF520 up to 20 coils	TSCF510 up to 10 coils	TSCF506 up to 6 coils
1	1	1	-	1	-	1	signal 1	white	signal 1	white	signal 1	white	white	white
2	2	-	2	-	2	2	signal 2	brown	signal 2	brown	signal 2	brown	brown	brown
3	3	3	-	3	-	3	signal 3	green	signal 3	green	signal 3	green	green	green
4	4	-	4	-	4	4	signal 4	grey	signal 4	grey	signal 4	yellow	yellow	yellow
5	5	5	-	5	-	5	signal 5	pink	signal 5	pink	signal 5	grey	grey	grey
6	6	-	6	-	6	6	signal 6	blue	signal 6	blue	signal 6	pink	pink	pink
7	7	7	-	7	-	7	signal 7	violet	signal 7	violet	signal 7	blue	blue	-
8	8	-	8	-	8	8	signal 8	grey-pink	signal 8	grey-pink	signal 8	red	red	-
9	9	9	-	9	-	9	signal 9	red-blue	signal 9	red-blue	signal 9	black	black	-
10	10	-	10	-	10	10	signal 10	white-green	signal 10	white-green	signal 10	violet	violet	-
11	11	11	-	11	-	11	signal 11	brown-green	signal 11	brown-green	signal 11	grey-pink	-	-
12	12	-	12	-	12	12	signal 12	white-yellow	signal 12	white-yellow	signal 12	red-blue	-	-
13	13	13	-	13	-	13	signal 13	yellow-brown	signal 13	yellow-brown	signal 13	white-green	-	-
14	14	-	14	14-		14	signal 14	white-grey	signal 14	white-grey	signal 14	brown-green	-	-
15	15	15	-	15	-	15	signal 15	grey-brown	signal 15	grey-brown	signal 15	white-yellow	-	-
16	16	-	16	16	-	16	signal 16	white-pink	signal 16	white-pink	signal 16	yellow-brown	-	-
17	17	17	-	17	-	17	signal 17	pink-brown	signal 17	pink-brown	signal 17	white-grey	-	-
18	18	-	18	18	-	18	signal 18	white-blue	signal 18	white-blue	signal 18	grey-brown	-	-
19	19	19	-	19	-	19	signal 19	black-white	com. GND	black	signal 19	white-pink	-	
20	20	-	20	20	-	20	signal 20	yellow			signal 20	pink-brown	-	
21	21	21	-	21	-	21	signal 21	red	-	red	-	n.c.	-	
22	22	-	22	22	-	22	signal 22	brown-blue	-		-	n.c.	-	
23	23	23	-	23	-	23	signal 23	brown-red	com. GND	yellow	com. GND	white-red	grey-pink	blue
24	common	n.c.	n.c.	n.c.	-	24	com. GND	black-shield				brown-red	red-blue	red
25	24	-	24	24	-	25	signal 24	white-red	shield	shield	shield	shield	shield	shield

n.c. = not connected.