

# AVENTICS™ Spool Valves

ISO 15407-1 (18 mm) - pad mounting body - M12 connection

Series  
**502**

2x3/2 - 5/2 - 5/3

## Features and Benefits

- M12 connection on top of valve: reduces installation time, wiring costs and prevents wiring errors
- Modular assembly with joinable subbases
- Spool & Sleeve or rubber packed technology in the same dimension body
- High flow rate up to 500 l/min
- Internal or external pilot pressure supply capability and compliance with ISO standard 15407-1 18 mm
- Spool & sleeve technology for long service life, rubber-packed version for high flow combined with multi-functions

## General

**Operating pressure**

See «SPECIFICATIONS» [1 bar = 100 kPa]

**Ambient temperature range (TS)**

-10°C to +50°C

**Rated flow**

See «SPECIFICATIONS»

conforming to ISO 6358

C (5/2) =  $24.24 \times 10^{-9} \text{ m}^3/\text{s.Pa}$  (sonic conductance)

b (5/2) = 0.28 (critical pressure ratio)

ISO 15407-1 26 mm (M12 on the top)

**Pneumatic base**

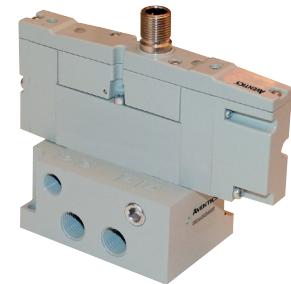
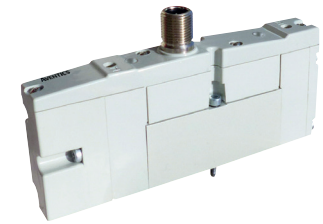
**Connection**

Single or manifold base

**Response time**

See «SPECIFICATIONS»

fluids (*)	temperature range (TS)	technology	seal materials (*)
air or inert gas ISO 8573 Level 7.4.4	-10°C to +50°C	rubber packed	NBR (nitrile) + PUR (polyurethane)
	-10°C to +50°C	spool & sleeve	metal-to-metal sealing



M12 on the top


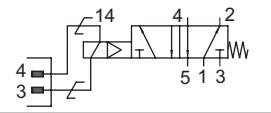
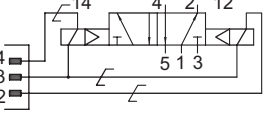
## Materials in contact with fluid

(\*) Ensure that compatibility of materials in contact with fluids is verified.

<b>Body</b>	Aluminium, E-coating treatment
<b>Spool</b>	Aluminium or st. steel (spool & sleeve)
<b>Piston</b>	POM (rubber packed)
<b>Spring</b>	Steel
<b>Other seals</b>	NBR
<b>Other materials</b>	PA (polyamide) GF 50% (glass fiber reinforced)
<b>Subbases</b>	Aluminium, E-coating treatment

## Electrical characteristics

<b>Coil insulation class</b>	F
<b>Round connector</b>	1 x 4 pin M12 male, IEC 61076-2-101
<b>PIN assignment</b>	ISO 20401
<b>Electrical safety</b>	IEC-EN 60730-1 / IEC-EN 60730-2-8
<b>Electrical enclosure protection</b>	IP65 (EN 60529)
<b>Standard voltages</b>	DC (=) : 24V
<b>Power ratings (hot / cold) (=)</b>	1.1 W / 1.3 W

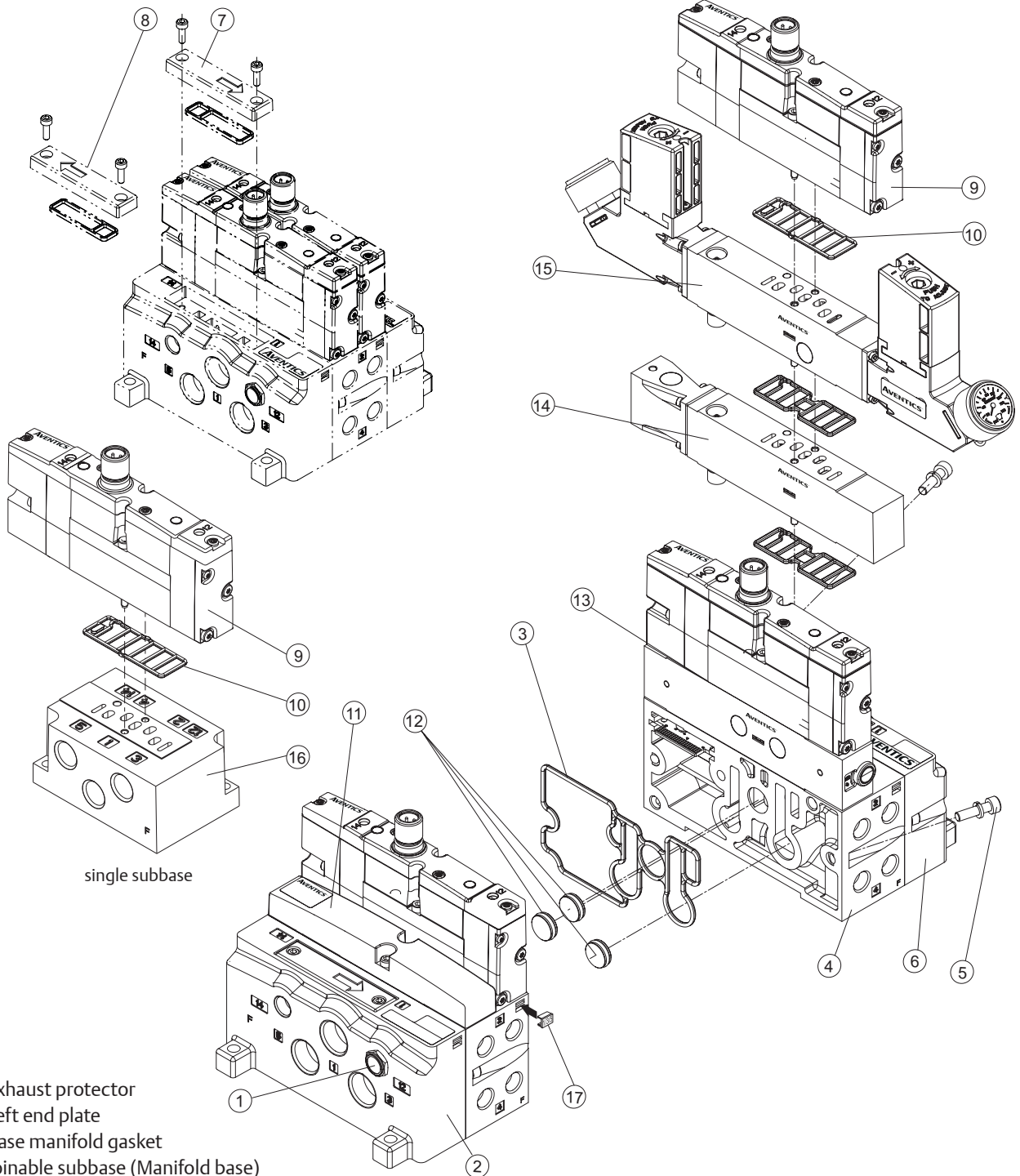
<b>M12</b> (ISO 20401) 		<b>1</b> not used <b>2</b> not used <b>3</b> common, 0 V <b>4</b> supply, coil 14
		<b>1</b> not used <b>2</b> supply, coil 12 <b>3</b> common, 0 V <b>4</b> supply, coil 14

## Accessories

<b>Straight M12 connector female</b>	With 5 m cable length (5 pin): catalogue number <b>88130212</b>
<b>Sandwich kits</b>	Shut off, pressure block, exhaust block, etc. (See following pages)
<b>Pressure regulator</b>	See following pages

**Product Overview**

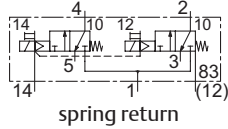
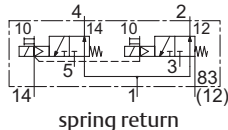
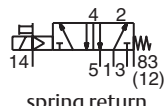
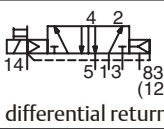
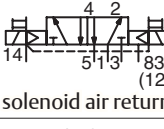
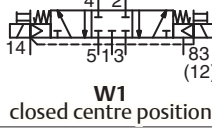
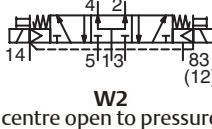
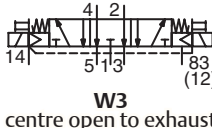
Internal/external pilot supply



- ① Exhaust protector
- ② Left end plate
- ③ Base manifold gasket
- ④ Joinable subbase (Manifold base)  
(one manifold base for 2 stations valve)
- ⑤ Screw with washer
- ⑥ Right end plate
- ⑦ Internal supply configuration (standard supply)
- ⑧ End plate modification for external supply
- ⑨ Valve with M12 connection on the top
- ⑩ Valve gasket
- ⑪ Blank station plate kit
- ⑫ Blocking disc kit
- ⑬ Speed control kit
- ⑭ Sandwich shut off (sandwich pressure block or sandwich exhaust block available)
- ⑮ Double regulator
- ⑯ Single subbase
- ⑰ Label (see page 305)

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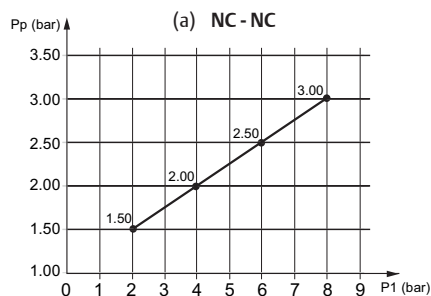
## SPECIFICATIONS

function	symbol	rated flow at 6,3 bar ΔP 1 bar l/min (ANR)		response time open / closed (ms)	pilot pressure at 23°C (bar) min. max.		operating pressure port 1 (bar)		dimensions / type	Catalog number
							min.	max. (PS)		ISO 15407-1
	pilot (14) return (12)	air (*)	=							
<b>SPOOL VALVE, RUBBER PACKED TECHNOLOGY, WITH IMPULSE MANUAL OPERATOR</b>										
2 x 3/2 NC	 spring return	500	440	39 / 19	(a)	10	2	10	01	R502A2BD0N83BF1 (R502A2BD0N82PF1) <sup>(c)</sup>
2 x 3/2 NO	 spring return	500	470	19 / 26	(b)	10	2	10	01	R502A2BA0N83BF1 (R502A2BA0N82PF1) <sup>(c)</sup>
5/2	 spring return	510	510	17 / 38	3	10	-0,95	10	01	R502A2B10N83BF1 (R502A2B10N82PF1) <sup>(c)</sup>
	 differential return	510	510	17 / 44	2	10	-0,95	10	01	R502A2BN0N83BF1 (R502A2BN0N82PF1) <sup>(c)</sup>
	 solenoid air return	510	510	14 / 14	2	10	-0,95	10	01	R502A2B40N83BF1 (R502A2B40N82PF1) <sup>(c)</sup>
5/3	 W1 closed centre position	490	490	18 / 18	3	10	-0,95	10	01	R502A2B60N83BF1 (R502A2B60N82PF1) <sup>(c)</sup>
	 W2 centre open to pressure	390	390	21 / 27	3	10	-0,95	10	01	R502A2B70N83BF1 (R502A2B70N82PF1) <sup>(c)</sup>
	 W3 centre open to exhaust	390	470	36 / 21	3	10	-0,95	10	01	R502A2B50N83BF1 (R502A2B50N82PF1) <sup>(c)</sup>

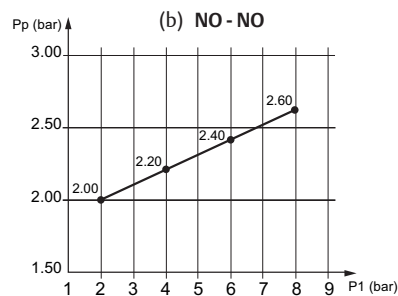
<sup>(c)</sup> Internal pilot supply from port 1.

(\*) Ensure that compatibility of materials in contact with fluids is verified.

Pp = Piloting pressure



Pp = Piloting pressure



SPOOL VALVE, SPOOL AND SLEEVE TECHNOLOGY, WITH IMPULSE MANUAL OPERATOR										
5/2		410	390	16 / 49	2	10	-0.95	10	01	R502A1B10N83BF1 (R502A1B10N82PF1) <sup>(a)</sup>
		410	390	11 / 26	1.5	10	-0.95	10	01	R502A1BN0N83BF1 (R502A1BN0N82PF1) <sup>(a)</sup>
		410	390	16 / 16	2	10	-0.95	10	01	R502A1B40N83BF1 (R502A1B40N82PF1) <sup>(a)</sup>
5/3		360	350	12 / 12	1.5	10	-0.95	10	01	R502A1B60N83BF1 (R502A1B60N82PF1) <sup>(a)</sup>
		370	350	13 / 23	1.5	10	-0.95	10	01	R502A1B70N83BF1 (R502A1B70N82PF1) <sup>(a)</sup>
		340	350	23 / 13	1.5	10	-0.95	10	01	R502A1B50N83BF1 (R502A1B50N82PF1) <sup>(a)</sup>

<sup>(a)</sup> Internal pilot supply from port 1.

### How to Order - Valves

**PRODUCT CODE**

**R 502 A 2 B N 0 N A00 F1**

**Thread connection**  
R = Pad mount

**Product series**  
502 (18 mm valve)

**Revision letter**  
A = Initial release

**Actuation**  
1 = Spool and sleeve  
2 = Rubber packed

**Valve type**  
B = Solenoid pilot  
(With impulse manual operator)

**Function**  
A = 2x3/2 NO, dual 3-way (Rubber packed)  
D = 2x3/2 NC, dual 3-way (Rubber packed)  
N = 5/2, Differential air return  
1 = 5/2, spring return  
4 = 5/2, solenoid air return  
5 = 5/3, W3, open center to exhaust  
6 = 5/3, W1, center closed  
7 = 5/3, W2, open center to pressure

Configurator - CAD Files

**Voltage - class**  
F1 = 24 V DC - class F

**Options**  
M12 valves  
(External piloting)<sup>(1)</sup>  
A00 = Standard (No option)  
With impulse manual operator  
11B = With maintained manual operator  
11M = Without manual operator  
14B = Internal pilot supply from port 1  
83B = 10 b max. pressure - non UL certified  
81G = 11B + 14B  
82M = 11B + 83B  
82N = 11M + 83B  
82K = 11M + 14B  
82P = 14B + 83B  
69N = 14B + 11M + 83B  
69P = 14B + 11B + 83B

**Electrical interface**  
N = M12 connector (on top of the valve)

<sup>(1)</sup> **Single subbases:**  
Used external spool valve (2 single subbases, internal or external supply).  
**Joinable subbase (manifold base):**  
Used external spool valves (internal/external supply configured in the end plate kits).  
For internal piloting, contact us.

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# AVENTICS™ Spool Valves

## Installation

- The spool valves can be mounted in any position without affecting operation
- Spool valve supplied with mounting screws and mounting pad gasket
- ISO 15407-1 pneumatic pad mounting body

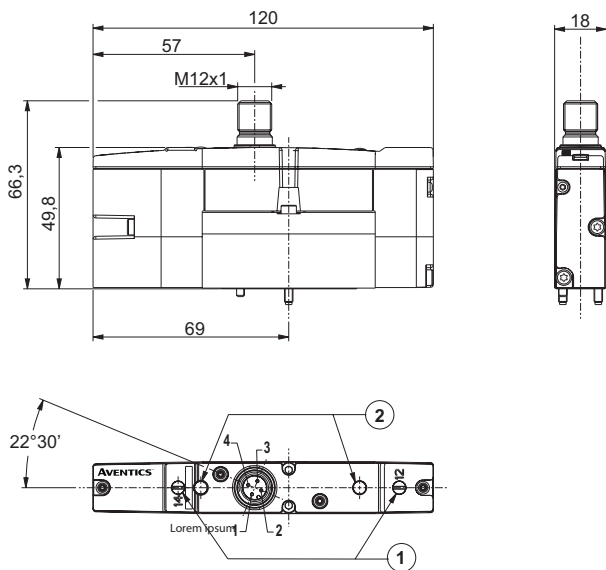
## Dimensions (mm), Weight (kg)

[Configurator - CAD Files](#)



### TYPE 01

Electrical interface "N"  
ISO 20401 / ISO 15407-1  
IP65

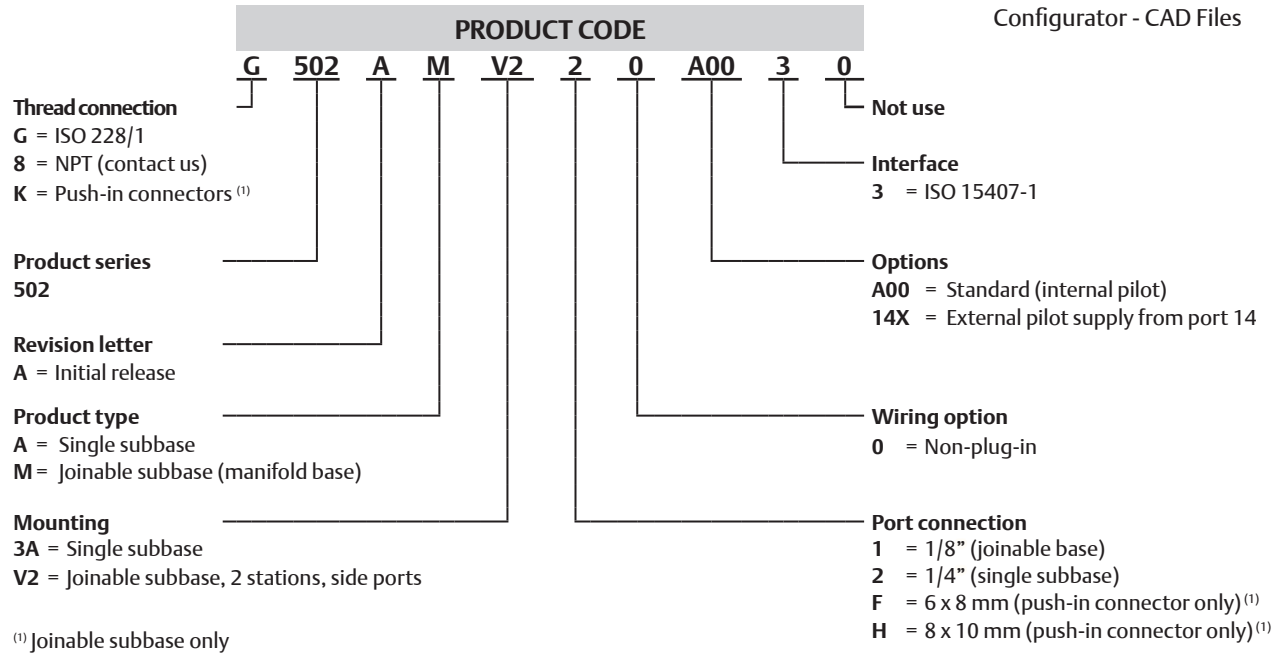


type	weight
01	0.17

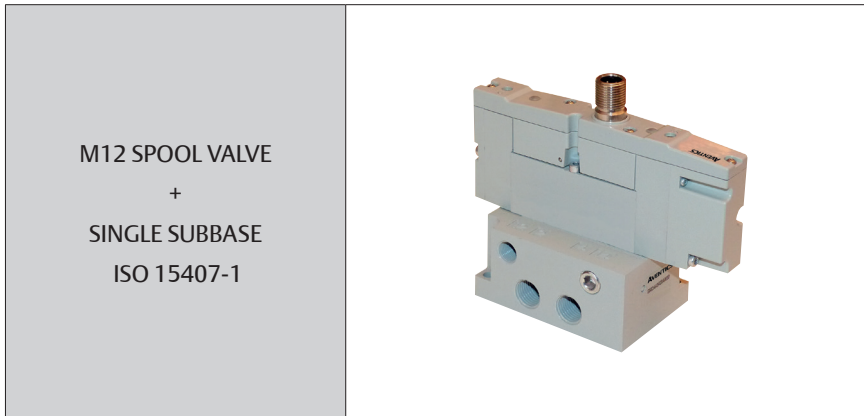
- ① Manual operator location
- ② LED indicator

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**How to Order - Single and Joinable Subbases**



## Single subbases (see following page for details)

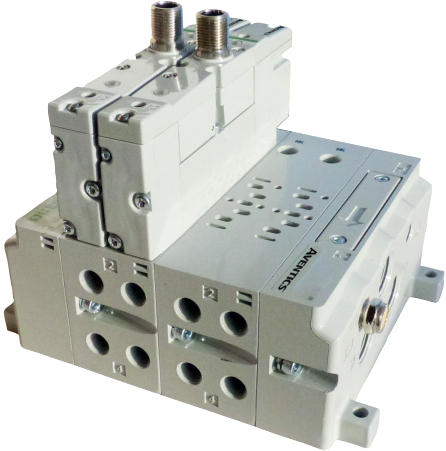


## Single subbases

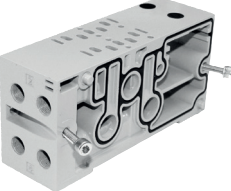

function	designation	thread type	dimensions / type <sup>(1)</sup>	Catalog number
<b>SINGLE SUBBASE (ISO 15407-1) FOR M12 ON THE TOP VALVE</b>				
		<p><b>internal supply</b> 1-2-3-4-5 = 1/4" 12 = 1/8 (pilot exhaust)</p>	G 02	<b>G502AA3A20A0030</b>
		<p><b>external supply</b> 1-2-3-4-5 = 1/4" 12 = 1/8 (pilot exhaust) 14 = 1/8 (pilot external supply)</p>	G 02	<b>G502AA3A2014X30</b>

<sup>(1)</sup> For dimensions, see drawing(s) for each construction type on the following page(s).

Joinable subbases (see following page for details)


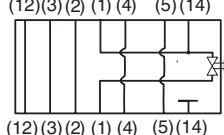
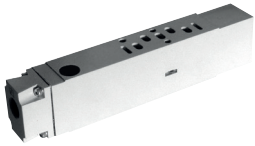
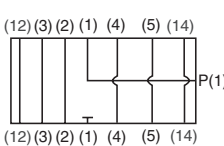

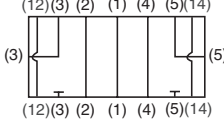

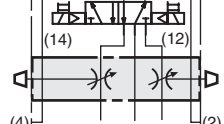
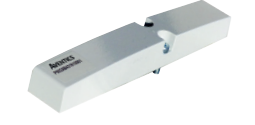
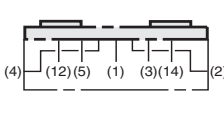








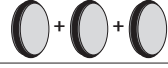

<p>M12 SPOOL VALVE + JOINABLE SUBBASE ISO 15407-1</p> <p>(one subbase for 2 stations valves)</p> <p>Accessories: pressure regulator, speed control, ...</p>	
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Joinable subbase ( Manifold base)

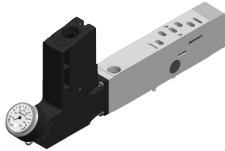
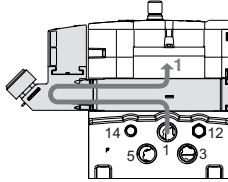
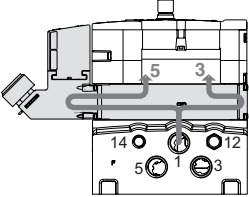
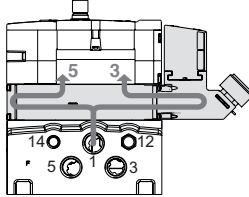
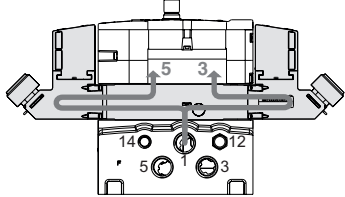
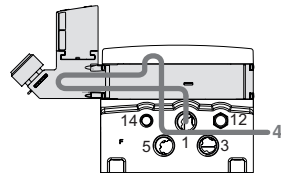
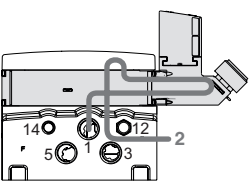
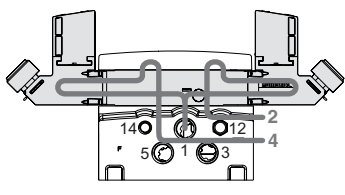
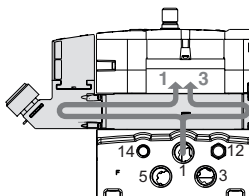
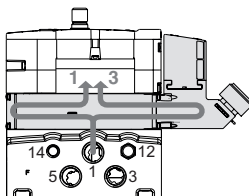
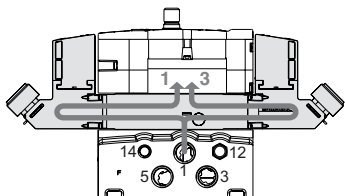
function	designation	thread type dimensions / type <sup>(1)</sup>		Catalog number
<b>DOUBLE JOINABLE SUBBASE (ISO 15407-1) FOR M12 ON THE TOP VALVE</b>				
	<p>one manifold base for 2 stations valve side ports, 4 x 3/8"</p>	G	03	<b>G502AMV210A0030</b>
<b>END PLATE KITS</b>				
	<p><b>horizontal supply</b> 3 x 3/8" (1/3/5 ports) 2 x 1/8" (12/14 ports)</p>	G	03	<b>G502AK431478004</b>

<sup>(1)</sup>For dimensions, see drawing(s) for each construction type on the following page(s).



			thread type	dimensions / type <sup>(1)</sup>	Catalog number
<b>SANDWICH SHUT OFF KIT</b>					
		<ul style="list-style-type: none"> <li>Used to shut-off pressure to the valve which is mounted above it</li> <li>Allows easy maintenance without the need to shut-off pressure to the whole manifold (specified for 2x3/2 NC-NC valve)</li> <li>⚠ Pay attention to residual pressures</li> <li>⚠ The valve should not be energised during disassembly</li> <li>Always internal piloting</li> </ul>	-	04	R502AY506752001
<b>SANDWICH PRESSURE BLOCK KIT</b>					
		<ul style="list-style-type: none"> <li>Used to supply a separate pressure to a single valve station without needing blocking disc</li> </ul>	G	05	G502AW506753002
<b>SANDWICH EXHAUST BLOCK KIT</b>					
		<ul style="list-style-type: none"> <li>Used to isolate the exhaust of the single valve station from the manifold base</li> <li>Allows faster exhaust response by re-routing</li> </ul>	G	06	G502AX506753001
<b>SANDWICH SPEED CONTROL KIT</b>					
		<ul style="list-style-type: none"> <li>Used to control double acting cylinder speed by restricting exhaust flow (3 and 5)</li> </ul>	-	08	R502AS4506755001
<b>BLANK STATION PLATE KIT</b>					
		<ul style="list-style-type: none"> <li>Used to block off a manifold station block for future use</li> </ul>	-	07	P502AB431813001
<b>BLOCKING DISCS KIT</b>					
	+ 	• Port 1	-	-	P502AD431914001
	+ 	• Port 3			P502AD431914002
	+ 	• Port 5			P502AD431914003
	+ 	• Ports 1 and 3			P502AD431914004
	+ 	• Ports 1 and 5			P502AD431914005
	+ 	• Ports 3 and 5	P502AD431914006		
	+ 	• Ports 1, 3 and 5	P502AD431914007		

<sup>(1)</sup> For dimensions, see drawing(s) for each construction type on the following page(s).

type	PRESSURE REGULATOR			dimensions / type <sup>(1)</sup>	Catalog number (pressure range 0.7 to 9 bar)
RS				09	R502ARS120A0030
		.....RS...A00.			
RD				10	R502ARD12016P30
	.....RD...16P..	.....RD...16N..	.....RD...A00..	11	R502ARD12016N30
				12	R502ARD120A0030
RE				13	R502ARE12016P00
	.....RE...16P..	.....RE...16N..	.....RE...A00..	14	R502ARE12016N00
				15	R502ARE120A0000
RT				10	R502ART12016P30
	.....RT...16P..	.....RT...16N..	.....RT...A00..	11	R502ART12016N30
				12	R502ART120A0030

<sup>(1)</sup>For dimensions, see drawing(s) for each construction type on the following page(s).

### How to Order - Pressure Regulator

Configurator - CAD Files

**PRODUCT CODE**

**R 502 A R - - 2 0 - - 0**

**Thread connection**  
R = Pad mount

**Product series**  
502

**Revision letter**  
A = Initial release

**Product type**  
R = Pressure regulator

**Regulator type**  
S = Single regulator - Pressure to port 1  
D = Single or double regulator - Pressure to ports 5 & 3  
E = Single or double regulator - External outlet regulator  
T = Single or double regulator - Two-pressure selector used for multi-pressure applications

**Interface**  
3 = ISO 15407-1  
0 = No interface


**Options**  
16N = Jumper on 14 end  
16P = Jumper on 12 end

**Wiring option**  
0 = Non-Plug-in

**Gauge type**  
2 = bar (standard)

**Pressure range**  
1 = 0.7 to 10 bar  
3 = 0.2 to 2 bar  
4 = 0.3 to 4 bar

Not used



## Dimensions (mm), Weight (kg)

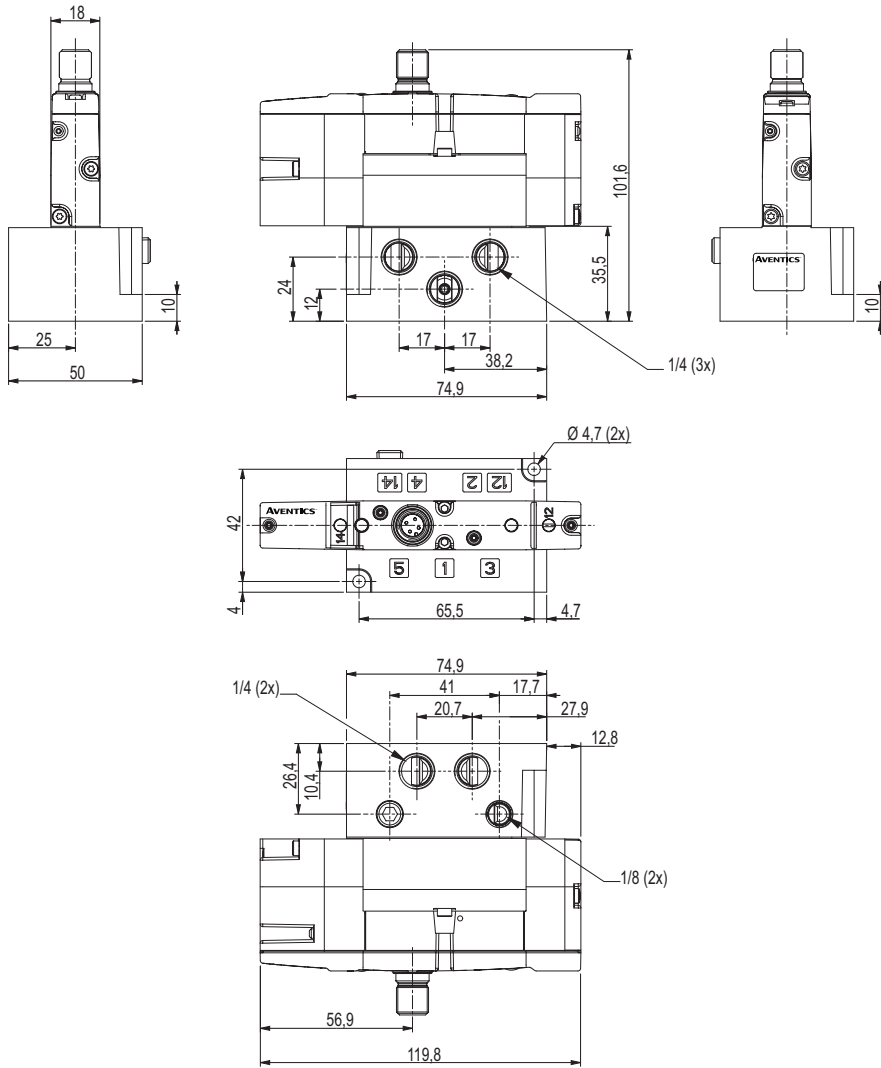
Configurator - CAD Files



### TYPE 02

Single subbases  
ISO 15407-1 (M12 on the top)  
3/8" = 1, 2, 3, 4, 5 ports  
1/8" = 12, 14 ports

G502AA3A20A0030 - G502AA3A2014X30



type	Catalog number	weight
02	G502AA3A20A0030	0.198
	G502AA3A2014X30	0.195

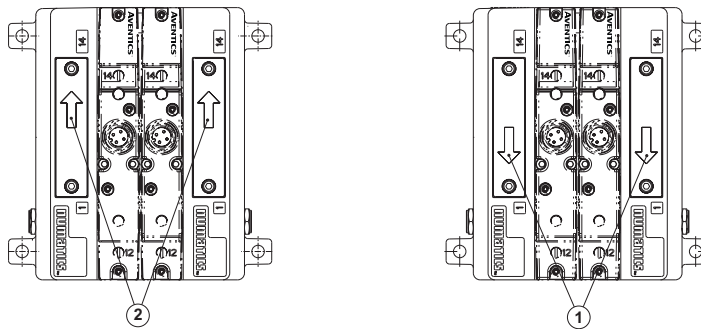
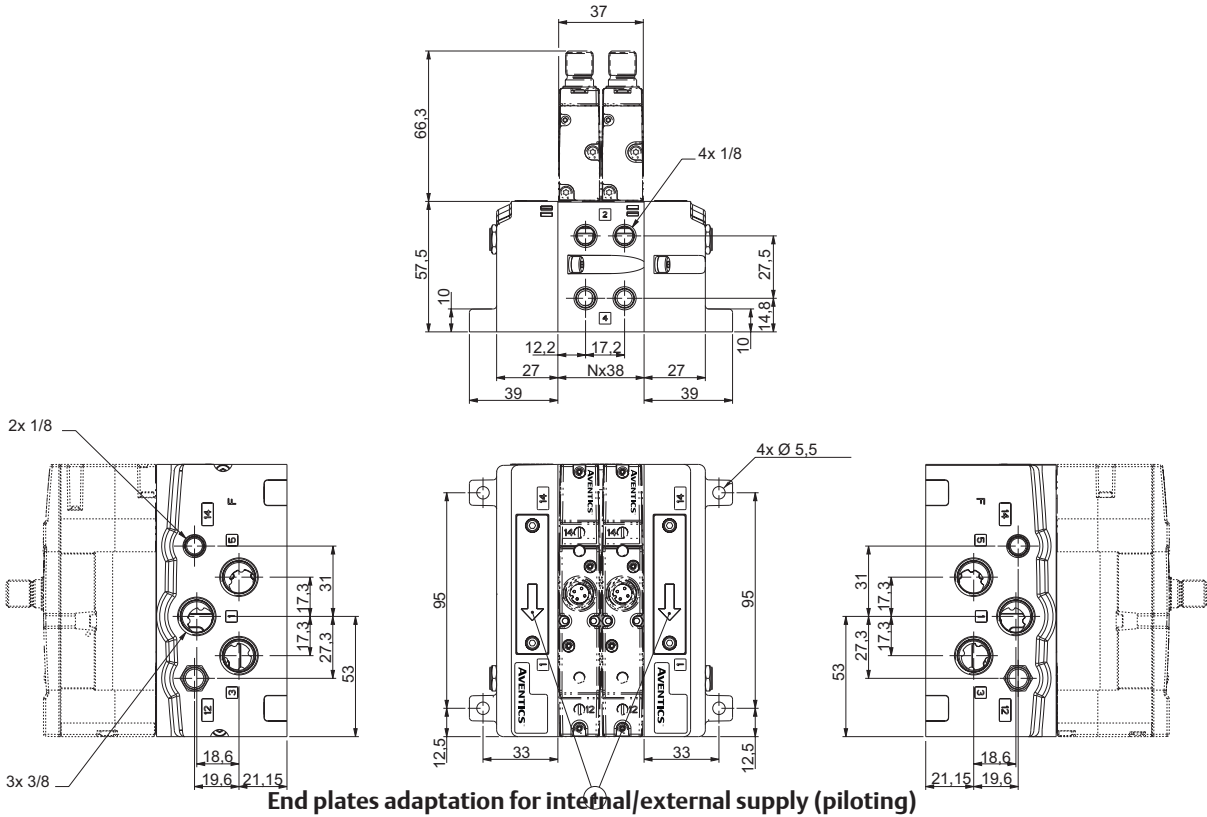
**Dimensions (mm), Weight (kg)**

Configurator - CAD Files



**TYPE 03**

Joinable subbase (manifold base), horizontal supply  
ISO 15407-1  
4 x 1/4" = 2 and 4 ports (dual subbase)  
3 x 1/2" = 1, 3, 5 ports; 2 x 1/8" = 12 and 14 ports (end plate kits)



**weight (kg)**  
1.21

type	Catalog number	weight
03	G502AMV210A0030 <sup>(1)</sup>	0.342
	G502AK431478004	0.525

- ① Internal supply (factory setting)
- ② External supply configuration

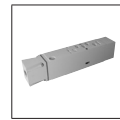
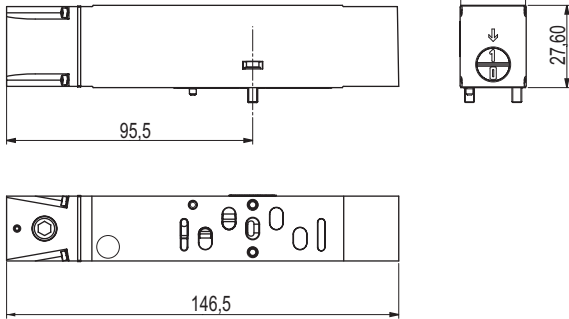
<sup>(1)</sup> For 2 stations.

## Dimensions (mm), Weight (kg)



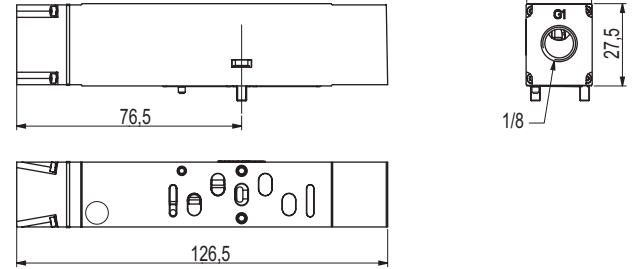
**TYPE 04**  
Sandwich shut off  
ISO 15407-1

R502AY429409001



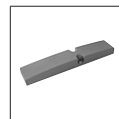
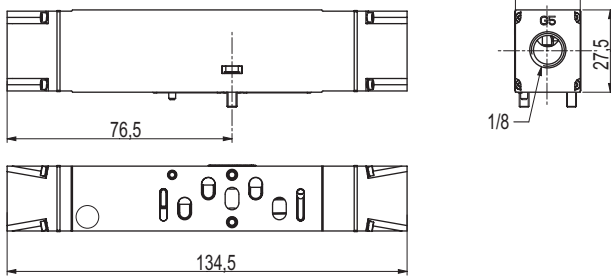
**TYPE 05**  
Sandwich pressure block  
ISO 15407-1

G502AW428685004



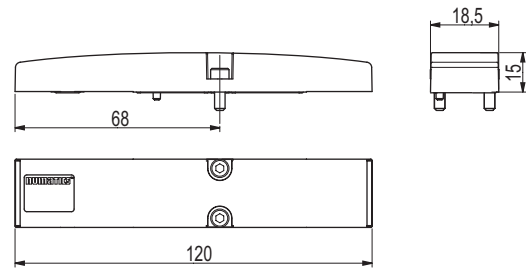
**TYPE 06**  
Sandwich exhaust block  
ISO 15407-1

G502AX428685001



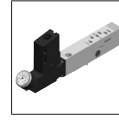
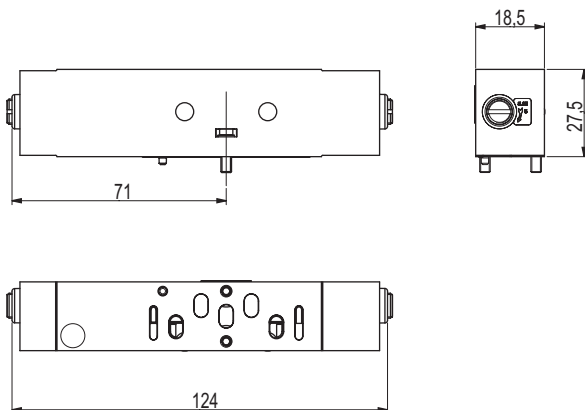
**TYPE 07**  
Blank station plate kit  
ISO 15407-1

P502AB431813001



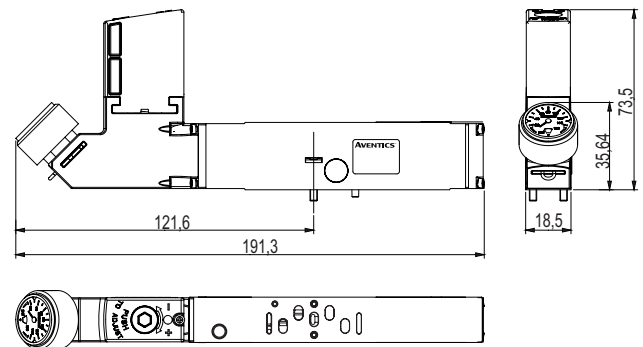
**TYPE 08**  
Speed control  
ISO 15407-1

R502AS429395001




**TYPE 09**  
Single regulator  
"RS" type  
ISO 15407-1

R502ARS120A0030



type	weight
04	0.145
05	0.118
06	0.133
07	0.058
08	0.139
09	- (1)

(1) Incl. gauge(s).

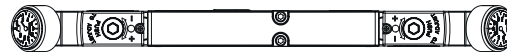
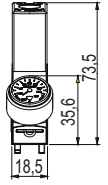
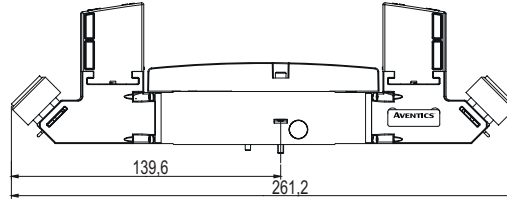
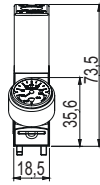
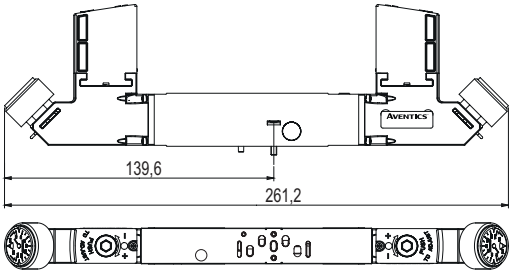
**Dimensions (mm), Weight (kg)** 



**TYPE 12 - 15**  
Double regulator  
ISO 15407-1

**R502ARD120A0030 / R502ARD120A0030**

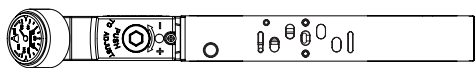
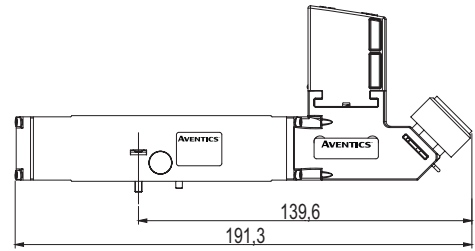
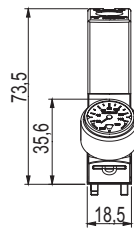
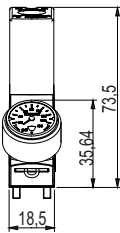
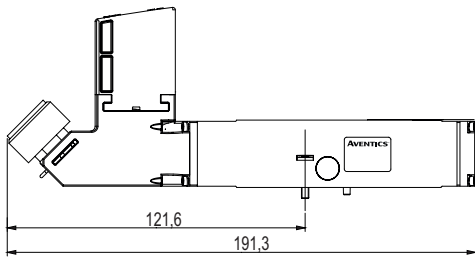
**R502ARE120A0000**



**TYPE 10 - 11 - 13 - 14**  
Single regulator  
ISO 15407-1

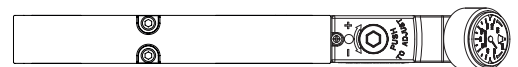
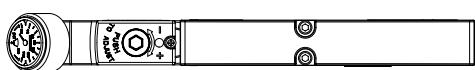
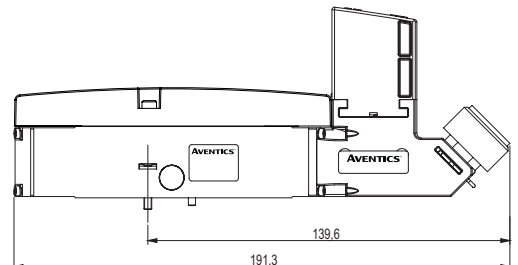
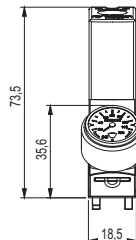
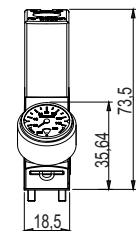
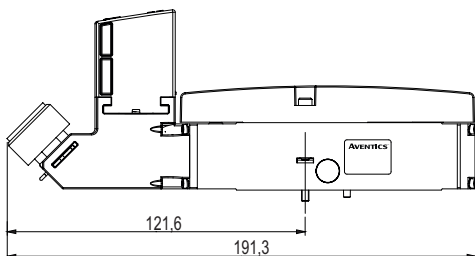
**R502ARD12016P30 / R502ART12016P30**

**R502ARD12016N30 / R502ART12016N30**



**R502ARE12016P00**

**R502ARE12016N00**



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