

- > Modular design - Maxseal valves
- > Bypass function enables valve removal online
- > Stainless steel visual status indicators and exhaust guards as standard
- > Cable terminations inside coil housing
- > SIL certified components and system
- > International approvals
- > Stainless steel construction
- > Utilizing industry proven technology



Technical features

Medium:
 Filtered, non-lubricated or dry compressed air, instrument air nitrogen and other non-flammable neutral dry fluids

Operation:
 3/2 Direct solenoid operated poppet valves

Bypass:
 5/2 Manual operated spool valve (lockable)

Mounting position:
 Valves vertical only

Operating pressure:
 1 ... 10 bar (14 ... 145 psi)

Flow:
 Standard valves 320 ... 490 l/min
 High flow valves 720 ... 810 l/min
 details see page 2

Port size:
 G 1/4, 1/4 NPT, G 1/2, 1/2 NPT

Additional filter:
 Installation of an in-line filter is recommended (in the direction of flow from the actuator to the RVM).

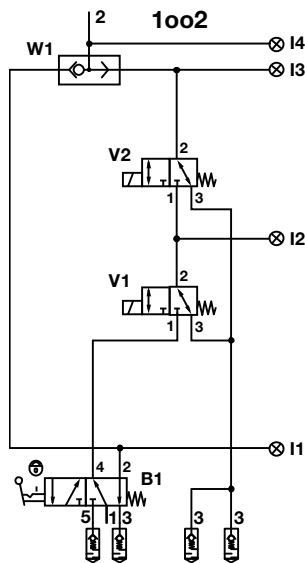
Temperature range:
 Up to -40 ... +80°C (-40 ... +176°F), see option selector page 2

Air supply must be dry enough to avoid ice formation at temperatures below 2°C (+35°F)

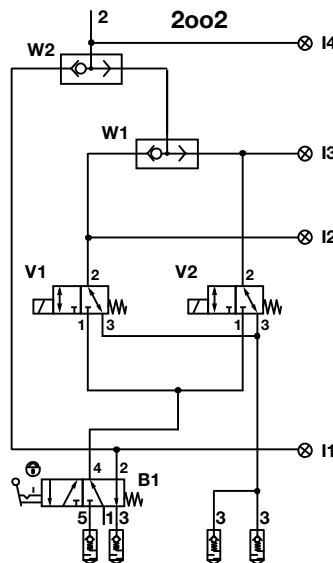
Temperature solenoid: See option selector and corresponding valve data sheets

Materials:
 Manifold and valve: stainless steel 1.4404 (316 L)
 Seals: NBR
 Internal parts: stainless steel 1.4404 (316 L)

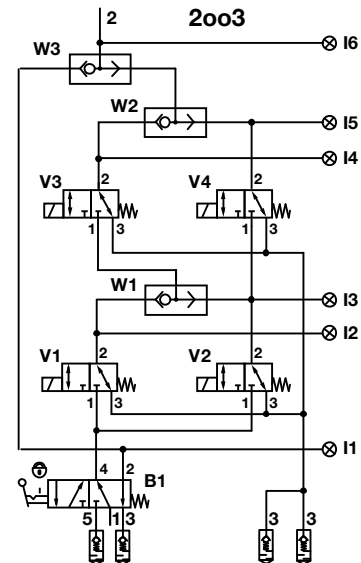
1oo2 with bypass valve exhaust guards and indicators



2oo2 with bypass valve exhaust guards and indicators



2oo3 with bypass valve *1) exhaust guards and indicators



B Bypass valve
 I Indicators
 V Solenoid actuated valves
 W Shuttle valves (DR function)

*1) for 2oo3
 V1 & V4 channel 1
 V2 channel 2
 V3 channel 3

*1) for 3oo4
 V1 channel 1
 V2 channel 2
 V3 channel 3
 V4 channel 4

Please have a look to instructions

Option selector

V83★★★★★000000

Valve function					Substitute	Country of manufacture					
1oo2 normally closed					1	Norgren internal use					
2oo2 normally closed					3	Indicators*1					Temperature / Pressure range
2oo3 normally closed					5	Visual valve status indicators in stainless steel - included in the scope of supply					-40°C... +80°C 2,5 ... 10 bar
Port sizes					Substitute	Silencers*2					Temperature
G1/4 (Standard flow)					11	Exhaust guard (standard)					-55°C...+80°C
1/4 NPT (Standard flow)					12	Manifold material					Substitute
G1/2 (High flow)					23	Stainless steel					2
1/2 NPT (High flow)					24	Aluminium					4
Valve type	Solenoid Protection	Voltage	Cable Entry	Substitute	Bypass valve					Temperature	Substitute
Standard flow					Stainless steel					-40°C... +60°C	2
YX13ANPHIBS	Exia	24 V d.c.	M20 x1,5	01	Stainless steel					-25°C... +80°C	4
Y013ANPHIBS	Excl	24 V d.c.	M20 x1,5	02							
Y13ANPHIBS	Embe	24 V d.c.	M20 x1,5	03							
Y013ANPHIMS	Excl	230 V a.c.	M20 x1,5	04							
Y13ANPHIMS	Embe	230 V a.c.	M20 x1,5	05							
YX13ANPH2BS	Exia	24 V d.c.	1/2 NPT	06							
Y013ANPH2BS	Excl	24 V d.c.	1/2 NPT	07							
Y13ANPH2BS	Embe	24 V d.c.	1/2 NPT	08							
Y013ANPH2MS	Excl	230 V a.c.	1/2 NPT	09							
Y13ANPH2MS	Embe	230 V a.c.	1/2 NPT	10							
Y013ANPHIBS-2W	Excl	24V d.c.	M20x1,5	22							
Y013ANPHIBS-2W	Excl	24V d.c.	M20x1,5	24							
Y013ANPH2BS-2W	Excl	24V d.c.	1/2 NPT	28							
Y013ANPH2ES	Excl	125V d.c.	1/2 NPT	30							
Y013ANPH2S	Excl	110V a.c.	1/2 NPT	31							
Y013ANPH2S	Excl	110V a.c.	M20x1,5	32							
Y13ANPH2ES	Embe	125V d.c.	1/2 NPT	42							
Y13ANPH2S	Embe	110V a.c.	1/2 NPT	43							
Y13ANPH2TS	Embe	120V a.c.	1/2 NPT	44							
Standard flow (PBMR)											
Y013PNPHIBS	Excl	24V d.c.	M20x1,5	21							
Y013PNPH2BS	Excl	24V d.c.	1/2 NPT	25							
Y013PNPH2S	Excl	110V a.c.	1/2 NPT	26							
Y013PNPH2BS-2W	Excl	24V d.c.	1/2 NPT	29							
Y013PNPHIBS-2W	Excl	24V a.c.	M20x1,5	33							
Y013PNPH2ES	Excl	125V d.c.	1/2 NPT	45							
High flow											
Y013AMMHIBS	Excl	24 V d.c.	M20 x1,5	12							
Y13AMMHIBS	Embe	24 V d.c.	M20 x1,5	13							
Y013AMMHIMS	Excl	230 V a.c.	M20 x1,5	14							
Y13AMMHIMS	Embe	230 V a.c.	M20 x1,5	15							
Y013AMMH2BS	Excl	24 V d.c.	1/2 NPT	17							
Y13AMMH2BS	Embe	24 V d.c.	1/2 NPT	18							
Y013AMMH2MS	Excl	230 V a.c.	1/2 NPT	19							
Y13AMMH2MS	Embe	230 V a.c.	1/2 NPT	20							
Y013AMMH2S	Excl	110V a.c.	M20x1,5	39							
Y013AMMH2ES	Excl	125V d.c.	1/2 NPT	41							
High flow (PBMR)											
Y013PMMH2S	Excl	110V a.c.	1/2 NPT	27							
Y013PMMHIBS	Excl	24V d.c.	M20x1,5	46							

*1) other indicators or plugs can be ordered separately, see page 3
 *2) other silencers can be ordered separately, see page 3

Flow rates and valve combinations

Flow direction (port to port)	Standard flow systems		High flow systems	
	Bypass mode	Operation mode	Bypass mode	Operation mode
1oo2	97109	2 x Y*13ANPHIBS	97109	2 x Y*13AMMHIBS
1 » 2 *1) [l/min]	950	330	1450	740
2 » 3 *2) [l/min]	∅	1740 ... 2200	∅	3200 ... 4600
2oo2	97109	2 x Y*13ANPHIBS	97109	2 x Y*13AMMHIBS
1 » 2 *1) [l/min]	950	490	1450	810
2 » 3 *2) [l/min]	∅	1640 ... 2200	∅	2500 ... 4600
2oo3	97109	4 x Y*13ANPHIBS	97109	4 x Y*13AMMHIBS
1 » 2 *1) [l/min]	950	320	1450	720
2 » 3 *2) [l/min]	∅	1640 ... 2200	∅	2500 ... 4600

*1) Flow characteristics conforms to ISO6358 from port 1 (bypass valve) to port 2 (sub-base) [6 » 5 bar], see page 1
 *2) Flow characteristics conforms to ISO6358 from port 2 (sub-base) to port 3 (sub-base or bypass valve) [10 » 0 bar], see page 1

Standard and optional accessories



Accessories - Standard
 (Included in the scope of supply)

Exhaust guard *2)

1



Page 14

0613422 (G1/4, 1/4 NPT)

☐

0613423 (G1/2, 1/2 NPT)

Visual indicators
 (stainless steel)

8



Page 14

74749-61 (G1/4)

☐

74749-60 (1/4 NPT)

*1) For indoors use

*2) For outdoors use

Accessories - can be ordered separately
 Other silencers, plastic indicator and plugs

Silencer
 (stainless steel) *1)

2



Page 14

0014613 (G1/4)

0613678 (1/4 NPT)

0014813 (G1/2)

0613679 (1/2 NPT)

Silencer
 (plastic) *1)

4



Page 14

M/S2 (G1/4)

C/S2 (1/4 NPT)

M/S4 (G1/2)

C/S4 (1/2 NPT)

Visual indicators (plastic)
 Adaptor

9 10



Page 14

5VS-212-000 (1/8 NPT)

Adaptor (1/8 NPT to 1/4 NPT) *3)

0613659 (stainless steel)

Plug plus
 Sealing washer

11



Page 14

0663943 (G1/4, stainless steel)

0682082 (1/4 NPT, stainless steel)

Sealing washer *4)

0660835 (plastic)

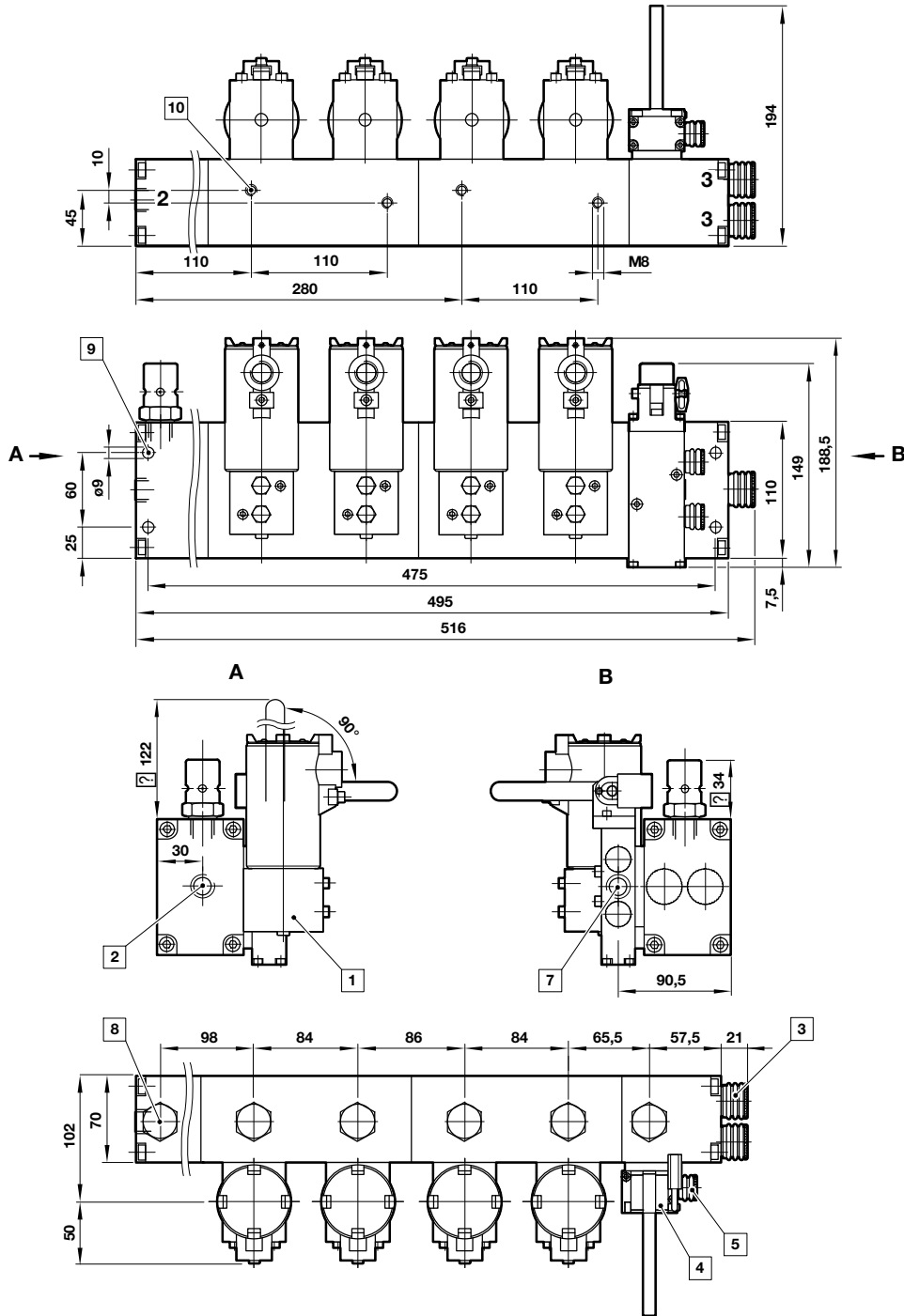
*1) For indoors use ☐ *2) For outdoors use ☐ *3) Must be ordered separately ☐

*4) Must be ordered separately for G thread only



2oo3 with bypass (standard flow)

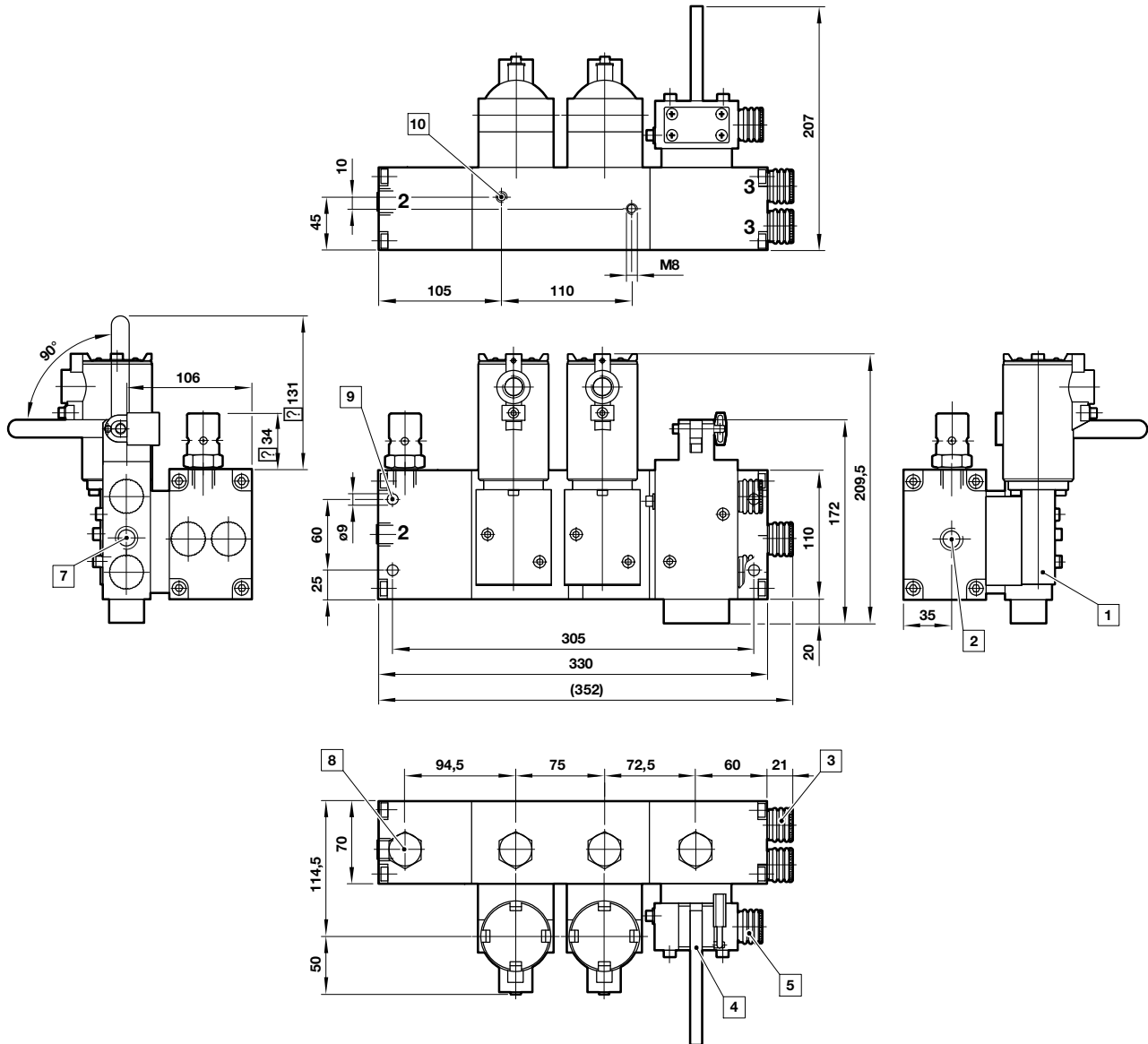
Weight: 10,3 kg aluminium (27,5 kg stainless steel) sub-base only, valves and accessories see refer page 8 & 12



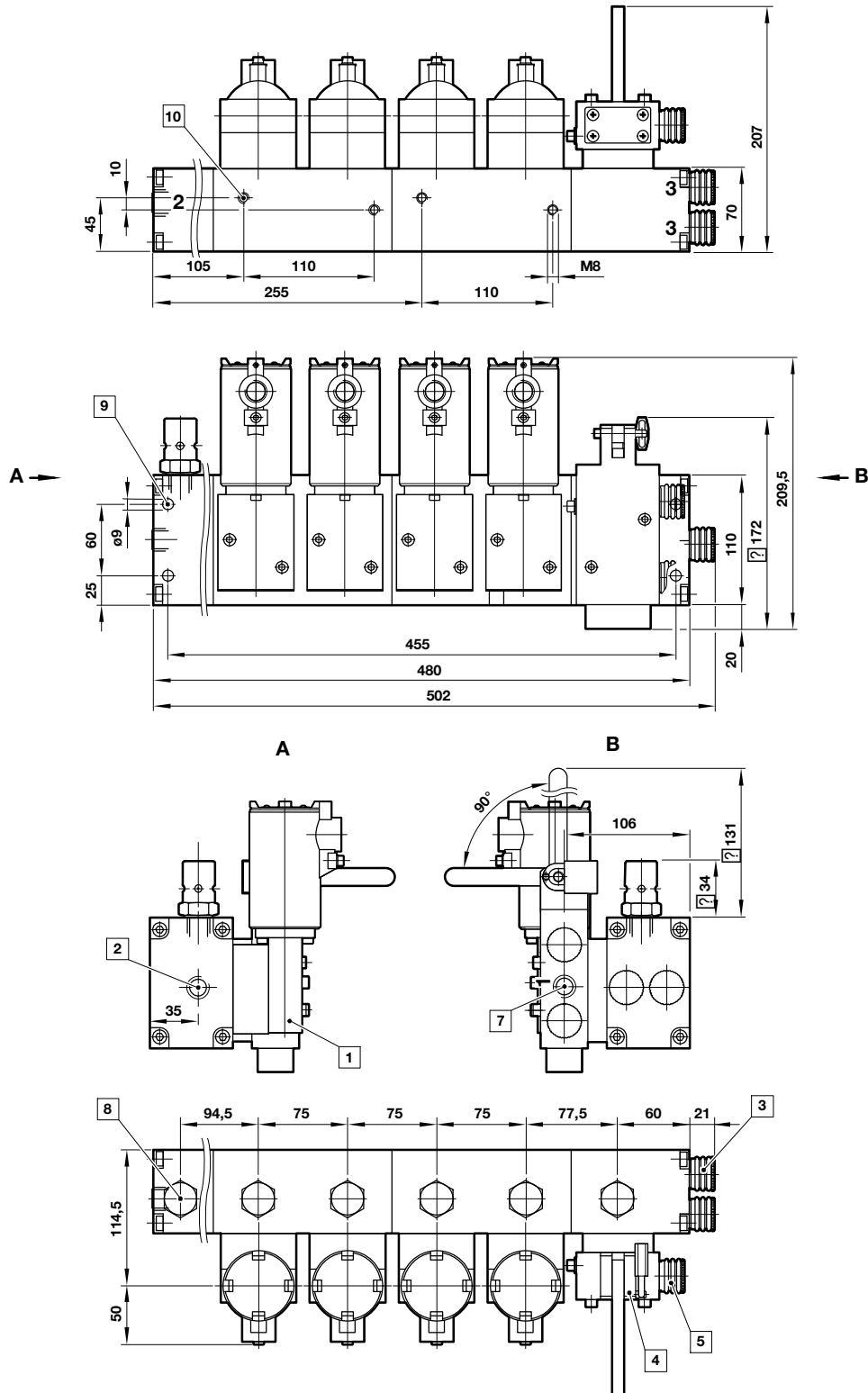
- 1 Valve Y*13ANPH1BS and Y*13ANPH2BS series
- 2 Outlet port G 1/4 or 1/4 NPT
- 3 Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT
- 4 Bypass valve 97109 series
- 5 Exhaust guard (bypass valve), ports G 1/4 or 1/4 NPT
- 7 Inlet port G 1/4 or 1/4 NPT
- 8 Visual indicator, stainless steel as standard
- 9 Mounting holes
- 10 Mounting threads

1oo2 and 2oo2 with bypass (high flow)

Weight: 6,8 kg aluminium (18,5 kg stainless steel) sub-base only, valves and accessories see refer page 10 & 12



- 1 Valve Y*13AMMH1BS and Y*13AMMH2BS series
- 2 Outlet port G 1/2 or 1/2 NPT
- 3 Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT
- 4 Bypass valve 97109 series
- 5 Exhaust guard (bypass valve), ports G 1/2 or 1/2 NPT
- 7 Inlet port G 1/2 or 1/2 NPT
- 8 Visual indicator, stainless steel as standard
- 9 Mounting holes
- 10 Additional mounting threads

2oo3 with bypass (high flow)
Weight: 9,9 kg aluminium (26,6 kg stainless steel) sub-base only, valves and accessories see refer page 10 & 12


- | | |
|--|---|
| 1 Valve Y*13AMMH1BS and Y*13AMMH2BS series | 7 Inlet port G 1/2 or 1/2 NPT |
| 2 Outlet port G 1/2 or 1/2 NPT | 8 Visual indicator, stainless steel as standard |
| 3 Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT | 9 Mounting holes |
| 4 Bypass valve 97109 series | 10 Mounting threads |
| 5 Exhaust guard (bypass valve), ports G 1/2 or 1/2 NPT | |

- > Standard flow range (600 l/min)
- > Direct acting 3/2 spring return to safe condition
- > Suited for outdoor use under critical environment conditions (see solenoid list)

- > Certifications: IECEx, ATEX, FM, CSA, GOST-R, GOST-K, CCOE, IN-METRO, KOSHA



Technical features

Medium:
 Filtered, non-lubricated or dry compressed air, instrument air nitrogen and other non-flammable neutral dry fluids
Operation:
 3/2 Direct solenoid operated poppet valves

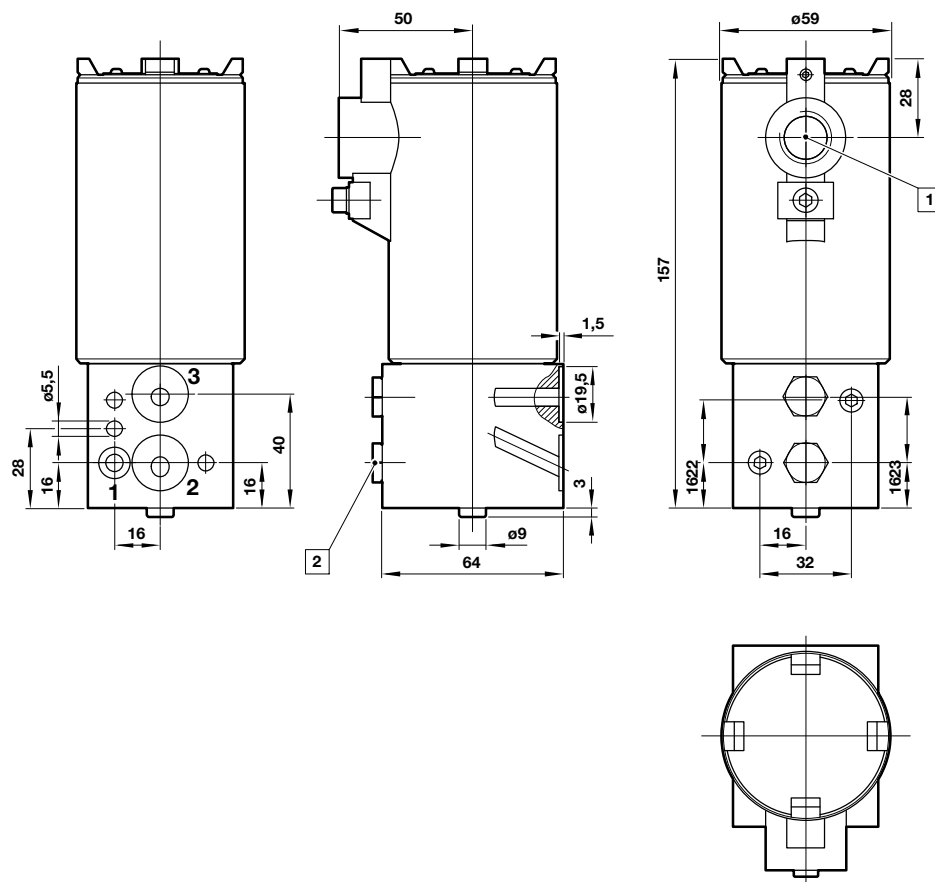
Port size:
 Flanged
Orifice:
 5 mm
Operating pressure:
 0 ... 12 bar (0 ... 174 psi)
 0 ... 10 bar (0 ... 145 psi) with CSA certification)

Fluid/Ambient Temperature:
 See table below
 Air supply must be dry enough to avoid ice formation at temperatures below 2°C (+35°F)
 For outdoor installation please protect all connections against moisture ingress

Materials:
 Body: stainless steel 1.4404 (316 L)
 Coil housing: stainless steel 1.4404 (316 L)
 Seals: NBR
 Internal parts: stainless steel 1.4404 (316 L)

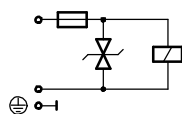
Technical data

Symbol	Power consumption		Rated current		Certifications		Temperature range		Electrical connection (conduit)	Model	Substitute
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (mA)	230 V a.c. (mA)	FM	ATEX	Media (°C)	Ambient (°C)			
	0,43	⊘	35	⊘	⊘	Ex II 1 GD Ex ia IIC	-55 ⊘ +69°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +69°C)	M20	Y013ANPH1ES	01
	3	⊘	125	⊘	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ⊘ +90°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +90°C)	M20	Y013ANPH1ES	02
	3	⊘	125	⊘	⊘	Ex mb II 2 GD Ex mb IIC	-55 ⊘ +90°C	T4 (-55 ⊘ +80°C)	M20	Y013ANPH1ES	03
	⊘	3,5	⊘	20	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ⊘ +90°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +90°C)	M20	Y013ANPH1MS	04
	⊘	3,5	⊘	20	⊘	Ex mb II 2 GD Ex mb IIC	-55 ⊘ +90°C	T4 (-55 ⊘ +80°C)	M20	Y013ANPH1MS	05
	0,43	⊘	35	⊘	⊘	Ex II 1 GD Ex ia IIC	-55 ⊘ +69°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +69°C)	1/2 NPT	Y013ANPH2ES	06
	3	⊘	125	⊘	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ⊘ +90°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +90°C)	1/2 NPT	Y013ANPH2ES	07
	3	⊘	125	⊘	⊘	Ex mb II 2 GD Ex mb IIC	-55 ⊘ +90°C	T4 (-55 ⊘ +80°C)	1/2 NPT	Y013ANPH2ES	08
	⊘	3,5	⊘	20	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ⊘ +90°C	T6 (-55 ⊘ +50°C), T4 (-55 ⊘ +90°C)	1/2 NPT	Y013ANPH2MS	09
	⊘	3,5	⊘	20	⊘	Ex mb II 2 GD Ex mb IIC	-55 ⊘ +90°C	T4 (-55 ⊘ +80°C)	1/2 NPT	Y013ANPH2MS	10



- 1 Electrical connection M20 x 1,5 or 1/2 NPT
- 2 Ports plugged
- 3 G 1/4: Hexagon head plug
1/4 NPT: Hexagon socket set plug

Circuit diagrams



- > High flow range (1500 l/min)
- > Direct acting 3/2 spring return to safe condition
- > Suited for outdoor use under critical environment conditions (see solenoid list)
- > Certifications: IECEx, ATEX, FM, CSA, GOST-R, GOST-K, CCOE, IN-METRO, KOSHA



Technical features

Medium:
 Filtered, non-lubricated or dry compressed air, instrument air nitrogen and other non-flammable neutral dry fluids
Operation:
 3/2 Direct solenoid operated poppet valves

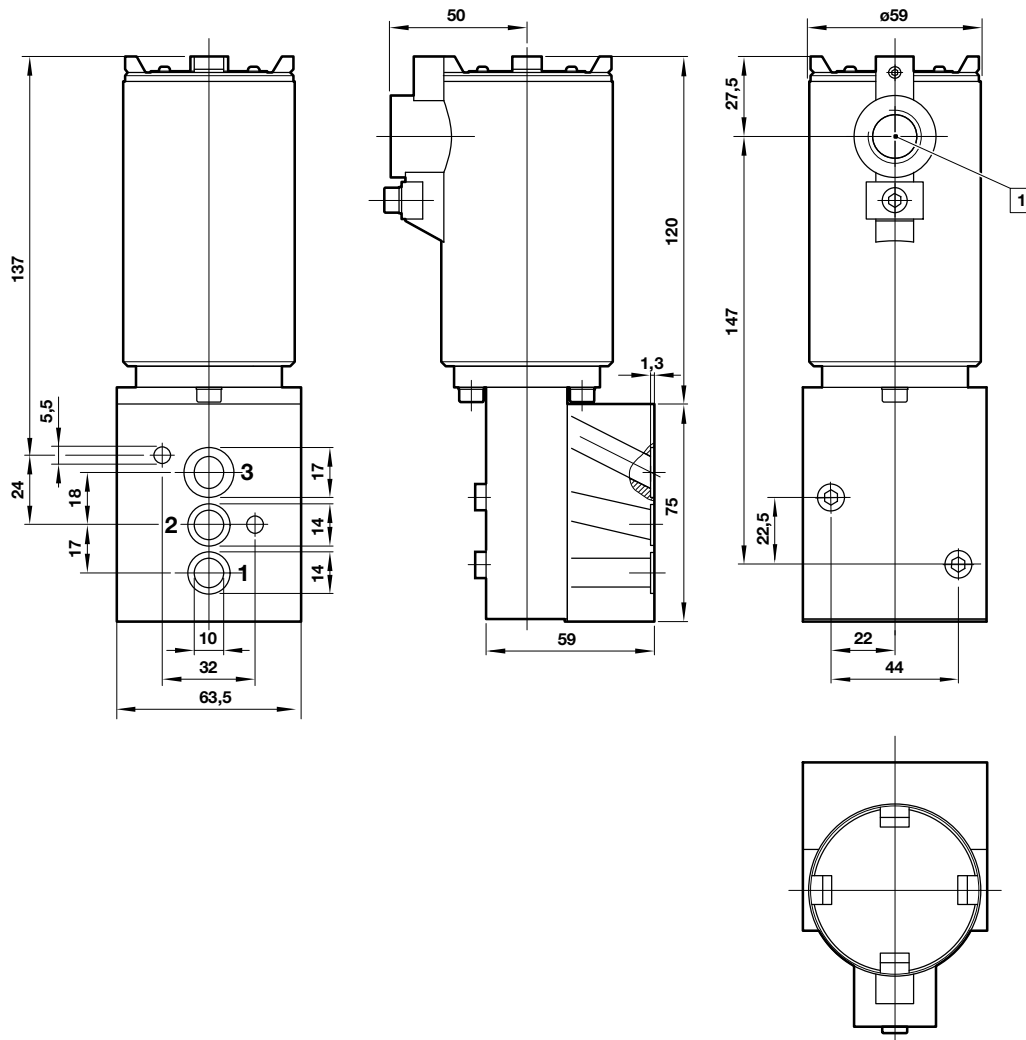
Port size:
 Flanged
 Orifice:
 8 mm
Operating pressure:
 0 ... 12 bar (0 ... 174 psi)
 (0 ... 10 bar (0 ... 145 psi) CSA)

Fluid/Ambient temperature:
 See table below
 Depending on solenoid system
 Air supply must be dry enough to avoid ice formation at temperatures below 2°C (+35°F)
 For outdoor installation please protect all connections against moisture ingress

Materials:
 Body: stainless steel 1.4404 (316 L)
 Coil housing: stainless steel 1.4404 (316 L)
 Seals: NBR
 Internal parts: stainless steel 1.4404 (316 L)

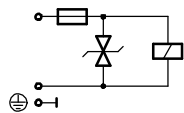
Technical data

Symbol	Power consumption		Rated current		Certifications		Temperature range		Electrical connection (conduit)	Model	Substitute
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (mA)	230 V a.c. (mA)	FM	ATEX	Media (°C)	Ambient (°C)			
	7,8	325	325	79	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ... +90°C	T6 (-55 ... +50°Q), T4 (-55 ... +90°Q)	M20	Y013AMMHBS	12
	7,8	325	325	79		Ex mb II 2 GD Ex mb IIC	-55 ... +90°C	T4 (-55 ... +80°Q)	M20	Y013AMMHBS	13
	8,5	79	79	79	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ... +90°C	T6 (-55 ... +50°Q), T4 (-55 ... +90°Q)	M20	Y013AMMHBS	14
	8,5	79	79	79		Ex mb II 2 GD Ex mb IIC	-55 ... +90°C	T4 (-55 ... +80°Q)	M20	Y013AMMHBS	15
	7,8	325	325	79	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ... +90°C	T6 (-55 ... +50°Q), T4 (-55 ... +90°Q)	1/2 NPT	Y013AMMHBS	17
	7,8	325	325	79		Ex mb II 2 GD Ex mb IIC	-55 ... +90°C	T4 (-55 ... +80°Q)	1/2 NPT	Y013AMMHBS	18
	8,5	79	79	79	Class 1, Division 1, Groups B, C and D	Ex II 2 GD Ex d IIC	-55 ... +90°C	T6 (-55 ... +50°Q), T4 (-55 ... +90°Q)	1/2 NPT	Y013AMMHBS	19
	8,5	79	79	79		Ex mb II 2 GD Ex mb IIC	-55 ... +90°C	T4 (-55 ... +80°Q)	1/2 NPT	Y013AMMHBS	20



1 Electrical connection M20 x 1,5 or 1/2 NPT

Circuit diagrams



- > No open port cross over position during lever movement
- > Reliable operation even with minimal air flow
- > Lockable manual operator with detent as standard
- > Simple design of soft seal spool system
- > Padlock with two keys



Technical features

Medium:

Filtered, non-lubricated or dry compressed air, instrument air nitrogen and other non-flammable neutral dry fluids

Operation:

Manual actuated spool valves

Port size:

see below, according to select system (standard flow or high flow)

Operating pressure:

0 ... 10 bar

Fluid/Ambient temperature:

-40 ... +80°C (-40 ... +176°F), Air supply must be dry enough to avoid ice formation at temperatures below 2°C (+35°F)

For outdoor installation please protect all connections against moisture ingress

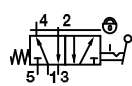
Materials:

Housing: stainless steel 1.4404 (316 L)

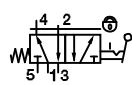
Seals: NBR (special perbunan) or HNBR

Technical data

Housing: Stainless steel, Seals: NBR -40 ... +65°C (-40 ... +149°F)

Symbol	Port size	Orifice (mm)	Actuation/return	Flow (l/min)	Operating pressure (bar) (psi)		Weight (kg) (lbs)		Drawing No.	Model
	NAMLRG1/4	6	Lever/spring	1300	0 ... 10	0 ... 145	1,40	3,08	5	9710907
	NAMLR1/4 NPT	6	Lever/spring	1300	0 ... 10	0 ... 145	1,40	3,08	5	9710912
	NAMLRG1/2	8	Lever/spring	2600	0 ... 10	0 ... 145	3,20	7,05	6	9710909
	NAMLR1/2 NPT	8	Lever/spring	2600	0 ... 10	0 ... 145	3,20	7,05	6	9710914

Housing: Stainless steel, Seals: HNBR -25 ... +80°C (-13 ... +176°F)

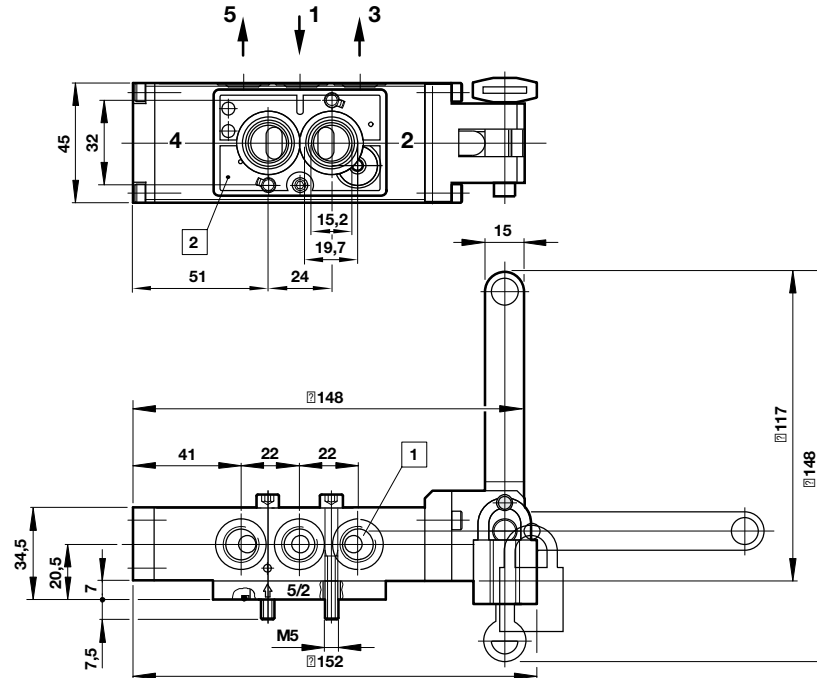
Symbol	Port size	Orifice (mm)	Actuation/return	Flow (l/min)	Operating pressure (bar) (psi)		Weight (kg) (lbs)		Drawing No.	Model
	NAMLRG1/4	6	Lever/spring	1300	0 ... 10	0 ... 145	1,40	3,08	5	9710916
	NAMLR1/4 NPT	6	Lever/spring	1300	0 ... 10	0 ... 145	1,40	3,08	5	9710920
	NAMLRG1/2	8	Lever/spring	2600	0 ... 10	0 ... 145	3,20	7,05	6	9710918
	NAMLR1/2 NPT	8	Lever/spring	2600	0 ... 10	0 ... 145	3,20	7,05	6	9710922

Accessories

<p>U-lock with two keys (brass)</p>  <p>0613633</p>	<p>U-lock with two keys (stainless steel)</p>  <p>0613836</p>
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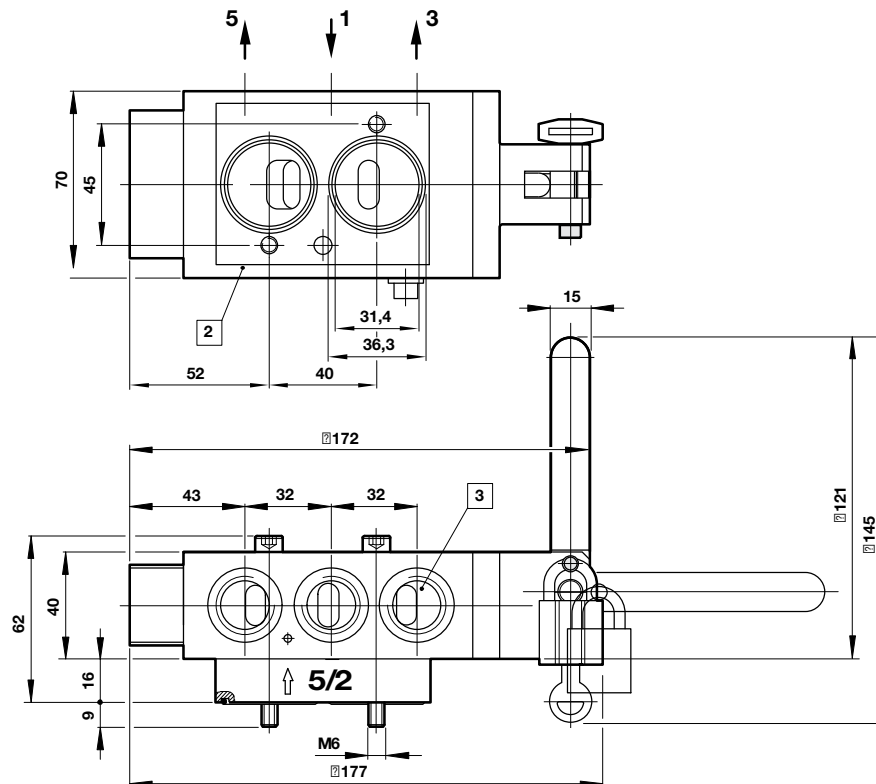
Standard flow valves

1



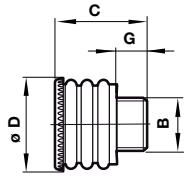
High flow valves

2



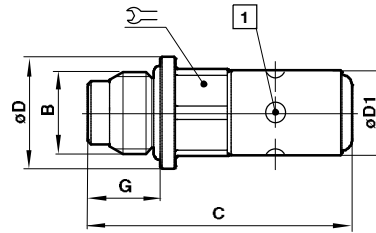
- 1 Inlet and exhaust ports G 1/4 or 1/4 NPT
- 2 Namur flange plate
- 3 Inlet and exhaust ports G 1/2 or 1/2 NPT

Exhaust guard (plastic) - standard option



B	Suitable for	G	C	Ø D	Weight (g)	Model
1/4"	G1/4, 1/4 NPT	10	26,5	21	5	0613422
1/2"	G1/2, 1/2 NPT	12	33,5	29	11	0613423

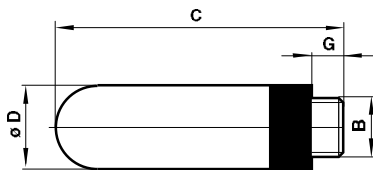
Visual indicator (stainless steel) - standard option



1 Visual colour
 Red (unactuated)
 Green (actuated)

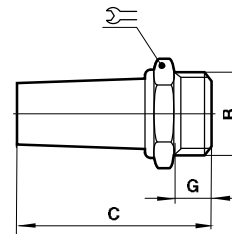
B	C	Ø D	Ø D1	G	Symbol	Weight (g)	Model
G1/4	42	18	14	11,5	14	35	74749-61
1/4 NPT	42	18	14	16	14	35	74749-60

Silencer (plastic)



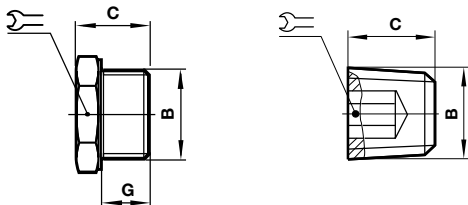
B	G	C	Ø D	Weight (g)	Model
G1/4	7	35,5	15,5	2,9	MS2
1/4 NPT	7	35,5	15,5	2,9	C/S2
G1/2	12	67	23	11,5	MS4
1/2 NPT	12	67	23	11,5	C/S4

Silencer (stainless steel)



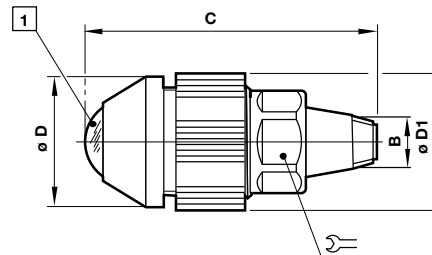
B	C	G	Symbol	Weight (g)	Model
G1/4	36	8	16	23	0014613
1/4 NPT	36	8	16	67	0613678
G1/2	49	12	24	81	0014813
1/2 NPT	49	12	24	235	0613679

Plug (stainless steel)



B	C	G	Symbol	Weight (g)	Model
G1/4	21	12	13	24	0663943
1/4 NPT	10	12	7	8	0682082

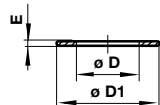
Visual indicator (plastic)



1 Visual colour
 Red (unactuated)
 Green (actuated)

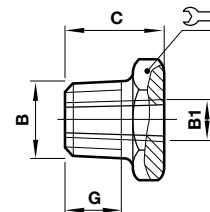
B	C	Ø D	Ø D1	Symbol	Weight (g)	Model
1/8 NPTF	46	20	21	14	25	5VS-221-000

Sealing washer (plastic)



For plug	Ø D	Ø D1	E	Weight (g)	Model
G1/4	13,5	17	1,5	2	0660835

Adapter (stainless steel)



B	B1	C	G	Symbol	Weight (g)	Model
1/4 NPT	1/8 NPT	21,5	14	14	10	0613659

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47400 Petaling Jaya, Selangor Darul Ehsan, Malaysia.

Email: nog@nog.com.my

Web access: <http://www.nog.com.my>

Warning

These products are intended for use in industrial compressed air and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the

event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Functional safety (SIL):

Suitable for certain applications can only be evaluated through examination of each safety-related overall system with regard to the requirements of IEC 61508/61511.