

- > Compact design - Maxseal valves
- > SIL certified components and system
- > Exhaust guards as standard
- > Cable terminations inside coil housing

- > 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

#### Mounting position:

Valves vertical only

#### Operating pressure:

12 bar (174 psi) (10 bar (145 psi) with CSA approval)

#### Flow:

Standard valves 300 ... 470 l/min  
High flow valves 860 ... 1250 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 RVM).

#### Temperature range:

Up to -55 to +80°C (-67 ... +176°F), see option selector page 2  
Air supply must be dry enough to avoid ice formation at temperatures below 2°C (+35°F)

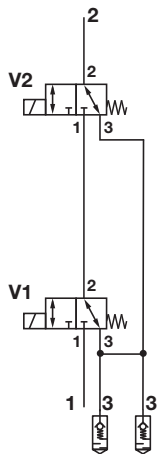
#### Temperature range of solenoid valve:

See option selector and corresponding valve data on pages 10 & 12

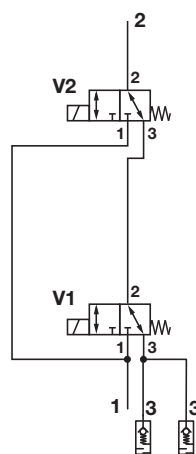
#### Materials:

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

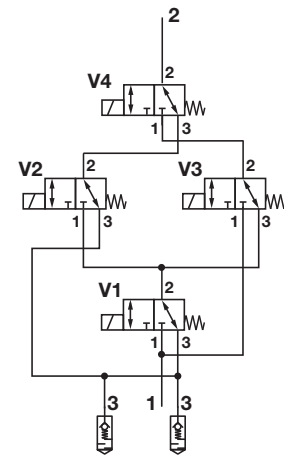
### 1oo2 with exhaust guards



### 2oo2 with exhaust guards



### 2oo3 with exhaust guards \*1)



V Solenoid actuated valves

\*1) for 2oo3

V1 = channel 1  
V2 & V3 = channel 2  
V4 = 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

V84\*\*\*\*\*0\*000000

<b>Valve function</b>					<b>Substitute</b>						<b>Country of manufacture</b>	
1oo2 normally closed					1						Norgren internal use	
2oo2 normally closed					3						<b>Silencers*1)</b>	<b>Temperature</b>
2oo3 normally closed					5						Exhaust guard (standard)	-55°C ...+80°C
<b>Port sizes</b>					<b>Substitute</b>						<b>Manifold material</b>	<b>Substitute</b>
G1/4 (Standard flow)					11						Stainless steel	2
1/4 NPT (Standard flow)					12						Aluminium	4
G1/2 (High flow)					23							
1/2 NPT (High flow)					24							
<b>Valve type</b>	<b>Solenoid Protection</b>	<b>Voltage</b>	<b>Cable Entry</b>	<b>Substitute</b>								
<b>Standard flow</b>												
YX13ANPH1BS	Exia	24 V d.c.	M 20 x 1,5	01								
Y013ANPH1BS	Exd	24 V d.c.	M 20 x 1,5	02								
YZ13ANPH1BS	Exmbe	24 V d.c.	M 20 x 1,5	03								
Y013ANPH1MS	Exd	230 V a.c.	M 20 x 1,5	04								
YZ13ANPH1MS	Exmbe	230 V a.c.	M 20 x 1,5	05								
YX13ANPH2BS	Exia	24 V d.c.	1/2 NPT	06								
Y013ANPH2BS	Exd	24 V d.c.	1/2 NPT	07								
YZ13ANPH2BS	Exmbe	24 V d.c.	1/2 NPT	08								
Y013ANPH2MS	Exd	230 V a.c.	1/2 NPT	09								
YZ13ANPH2MS	Exmbe	230 V a.c.	1/2 NPT	10								
Y013ANPH1BS-2W	Exd	24V d.c.	M20x1,5	22								
Y013ANPV1BS-2W	Exd	24V d.c.	M20x1,5	24								
Y013ANPH2BS-2W	Exd	24V d.c.	1/2 NPT	28								
Y013ANPH2ES	Exd	125V d.c.	1/2 NPT	30								
Y013ANPH2JS	Exd	110V a.c.	1/2 NPT	31								
Y013ANPH2JS	Exd	110V a.c.	M20x1,5	32								
YZ13ANPH2ES	Exmbe	125V d.c.	1/2 NPT	42								
YZ13ANPH2JS	Exmbe	110V a.c.	1/2 NPT	43								
YZ13ANPH2TS	Exmbe	120V a.c.	1/2 NPT	44								
<b>Standard flow (PBMR)</b>												
Y013PNPH1BS	Exd	24V d.c.	M20x1,5	21								
Y013PNPH2BS	Exd	24V d.c.	1/2 NPT	25								
Y013PNPH2JS	Exd	110V a.c.	1/2 NPT	26								
Y013PNPH2BS-2W	Exd	24V d.c.	1/2 NPT	29								
Y013PNPH1BS-2W	Exd	24V a.c.	M20x1,5	33								
Y013PNPH2ES	Exd	125V d.c.	1/2 NPT	45								
<b>High flow</b>												
Y013AMMH1BS	Exd	24 V d.c.	M 20 x 1,5	12								
YZ13AMMH1BS	Exmbe	24 V d.c.	M 20 x 1,5	13								
Y013AMMH1MS	Exd	230 V a.c.	M 20 x 1,5	14								
YZ13AMMH1MS	Exmbe	230 V a.c.	M 20 x 1,5	15								
Y013AMMH2BS	Exd	24 V d.c.	1/2 NPT	17								
YZ13AMMH2BS	Exmbe	24 V d.c.	1/2 NPT	18								
Y013AMMH2MS	Exd	230 V a.c.	1/2 NPT	19								
YZ13AMMH2MS	Exmbe	230 V a.c.	1/2 NPT	20								
Y013AMMH1JS	Exd	110V a.c.	M20x1,5	39								
Y013AMMH2ES	Exd	125V d.c.	1/2 NPT	41								
<b>High flow (PBMR)</b>												
Y013PMMH2JS	Exd	110V a.c.	1/2 NPT	27								
Y013PMMH1BS	Exd	24V d.c.	M20x1,5	46								

\*1) other silencers can be ordered separately, see page 3

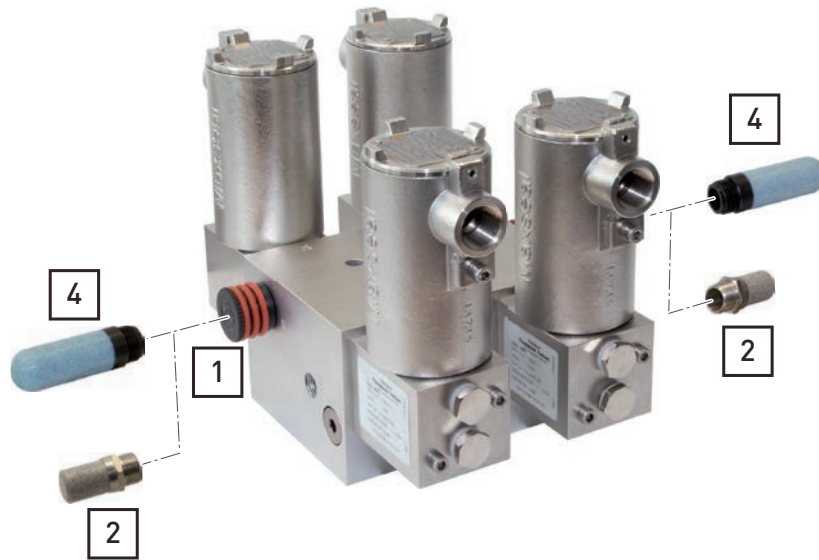
Flow rates and valve combinations

Flow direction (port to port)	Standard flow systems	High flow systems
<b>1oo2</b>	2 x Y*13ANPH*BS	2 x Y*13AMMH*BS
<b>1 » 2 *1) [l/min]</b>	300	870
<b>2 » 3 *2) [l/min]</b>	1830	3720
<b>2oo2</b>	2 x Y*13ANPH*BS	2 x Y*13AMMH*BS
<b>1 » 2 *1) [l/min]</b>	470	1250
<b>2 » 3 *2) [l/min]</b>	1420	2690
<b>2oo3</b>	4 x Y*13ANPH*BS	4 x Y*13AMMH*BS
<b>1 » 2 *1) [l/min]</b>	320	860
<b>2 » 3 *2) [l/min]</b>	1400	2430

\*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

Note; Please advise when ordering if CSA certification is required

**Standard and optional accessories**

**Accessories - Standard  
(Included in the scope of supply)**
**Exhaust guard \*2)**

**Page 14**

0613422 (G 1/4, 1/4 NPT)

0613423 (G 1/2, 1/2 NPT)

\*1) For indoors use

\*2) For outdoors use

**Accessories - can be ordered separately  
Other silencers, plastic indicator and plugs**
**Silencer  
(stainless steel) \*1)**

**Page 14**

0014613 (G 1/4)

0613678 (1/4 NPT)

0014813 (G 1/2)

0613679 (1/2 NPT)

**Silencer  
(plastic) \*1)**

**Page 14**

M/S2 (G 1/4)

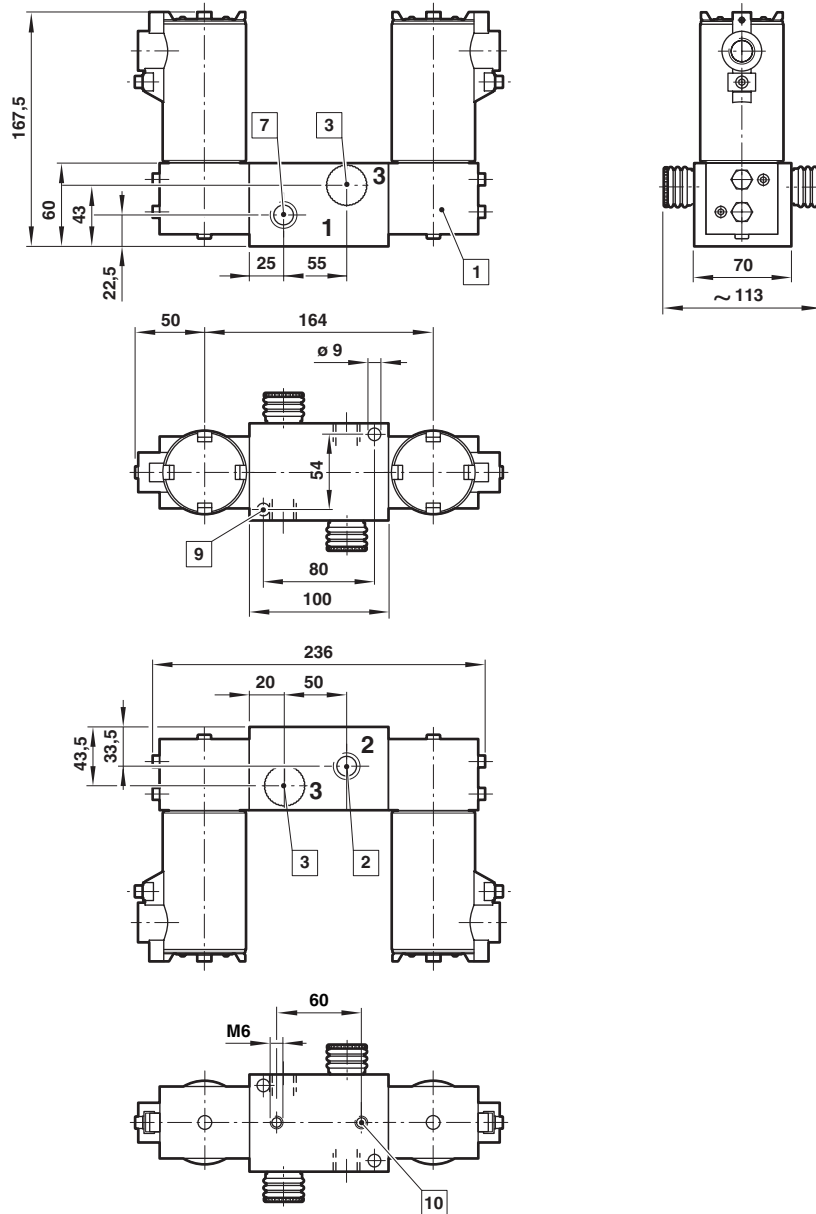
C/S2 (1/4 NPT)

M/S4 (G 1/2)

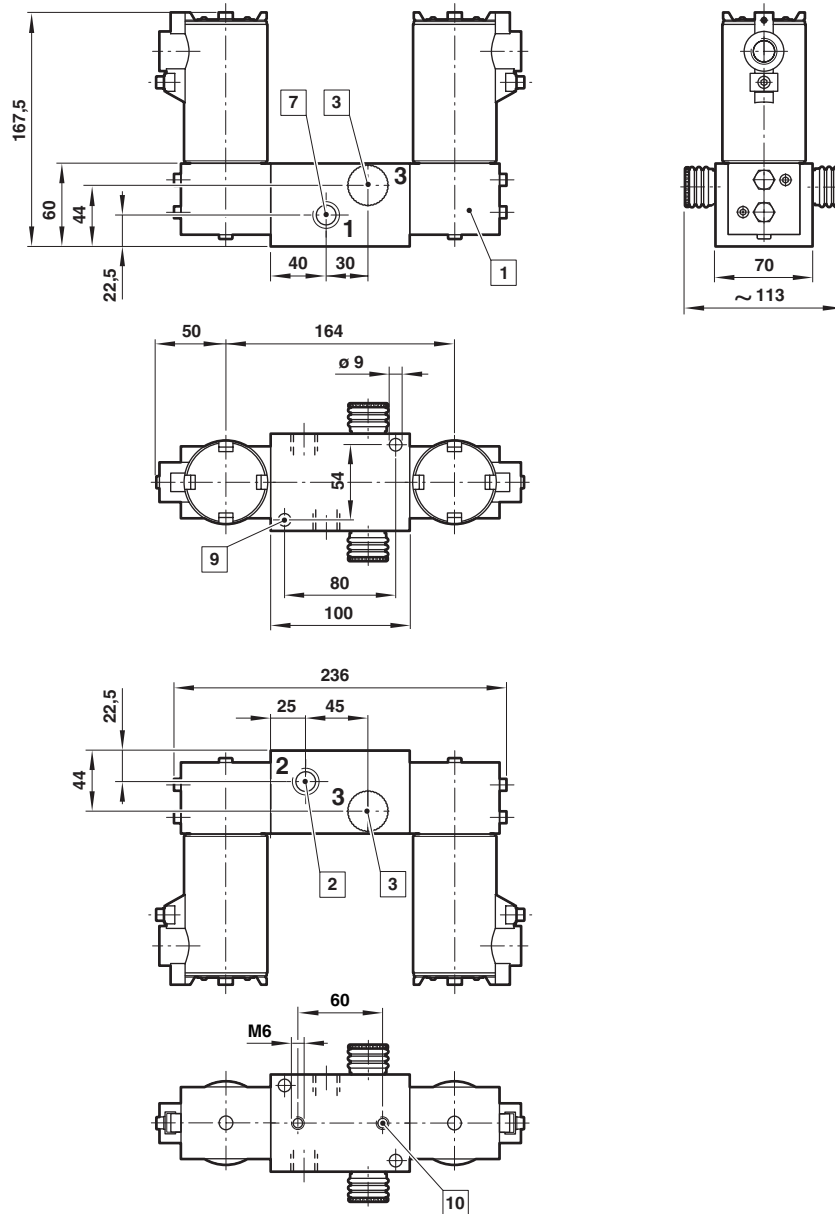
C/S4 (1/2 NPT)

1oo2 (standard flow)

Weight: 1,0 kg aluminium (2,8 kg stainless steel) sub-base only, valves and accessories see refer page 10



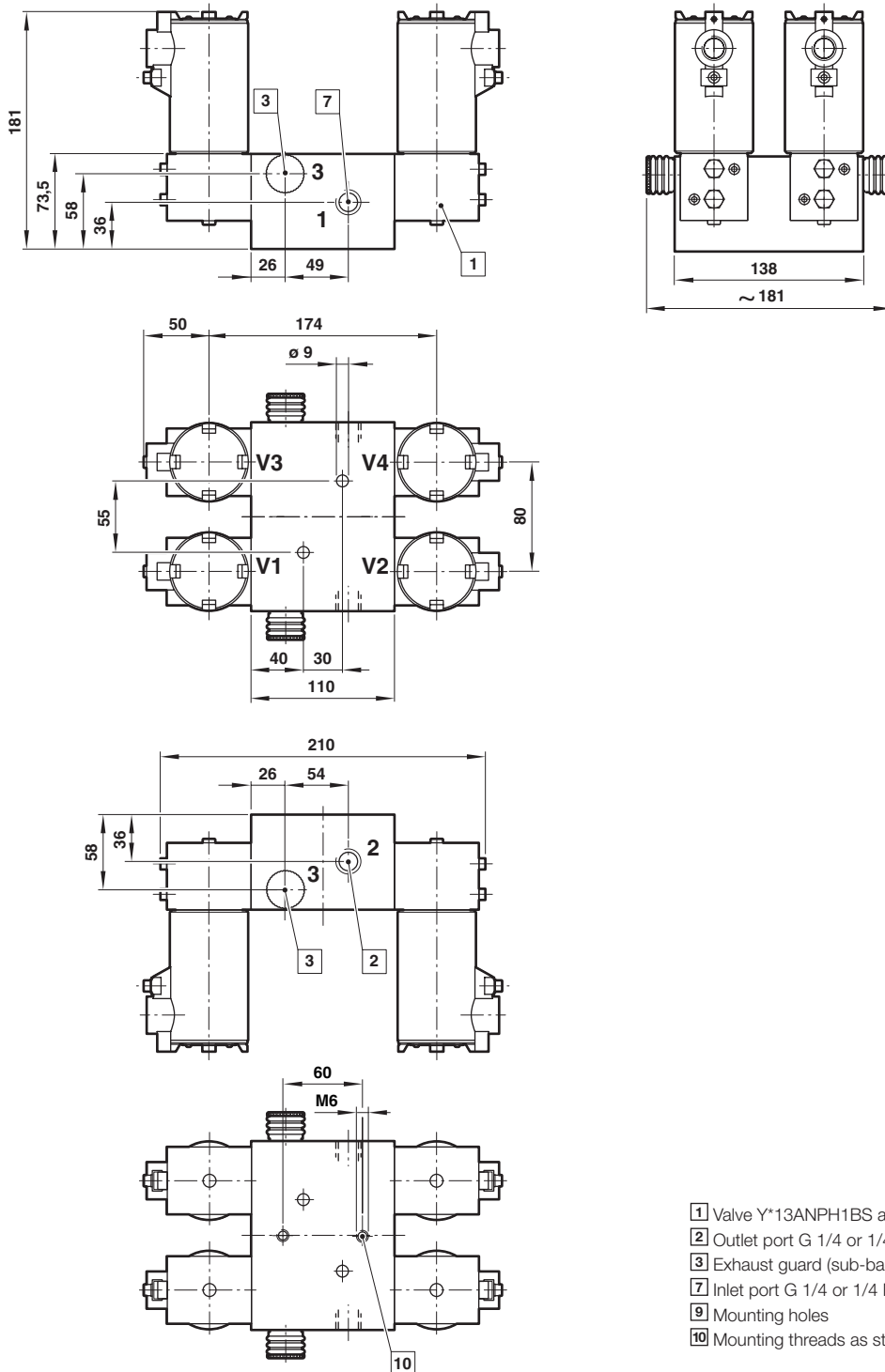
- 1 Valve Y\*13ANPH1BS and Y\*13ANPH2BS series
- 2 Outlet port G 1/4 or 1/4 NPT
- 3 Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT
- 7 Inlet port G 1/4 or 1/4 NPT
- 9 Mounting holes
- 10 Mounting threads as standard or alternative to fix the bracket

**2oo2 (standard flow)**
**Weight: 1,0 kg aluminium (2,8 kg stainless steel) sub-base only, valves and accessories see refer page 10**


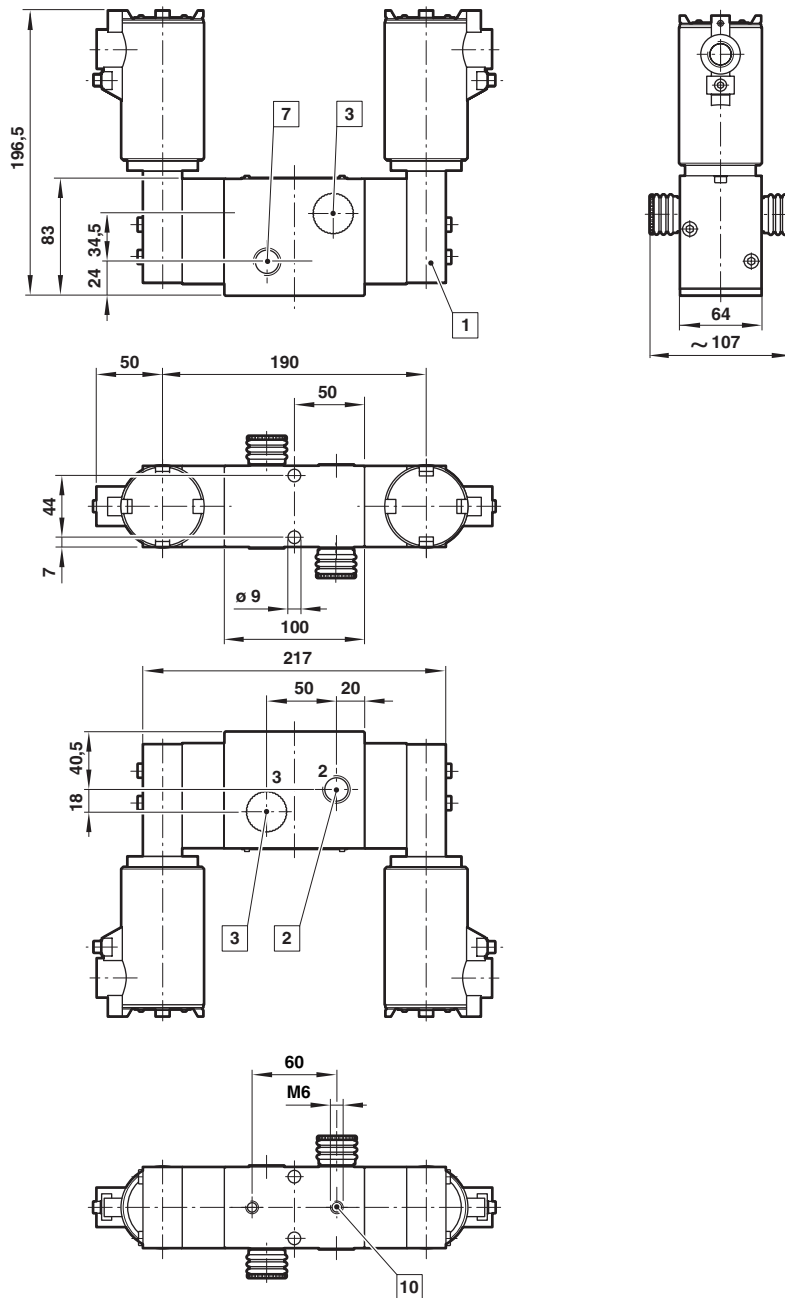
- 1** Valve Y\*13ANPH1BS and Y\*13ANPH2BS series
- 2** Outlet port G 1/4 or 1/4 NPT
- 3** Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT
- 7** Inlet port G 1/4 or 1/4 NPT
- 9** Mounting holes
- 10** Mounting threads as standard or alternative to fix the bracket

2oo3 (standard flow)

Weight: 2,8 kg aluminium (8,0 kg stainless steel) sub-base only, valves and accessories see refer page 10



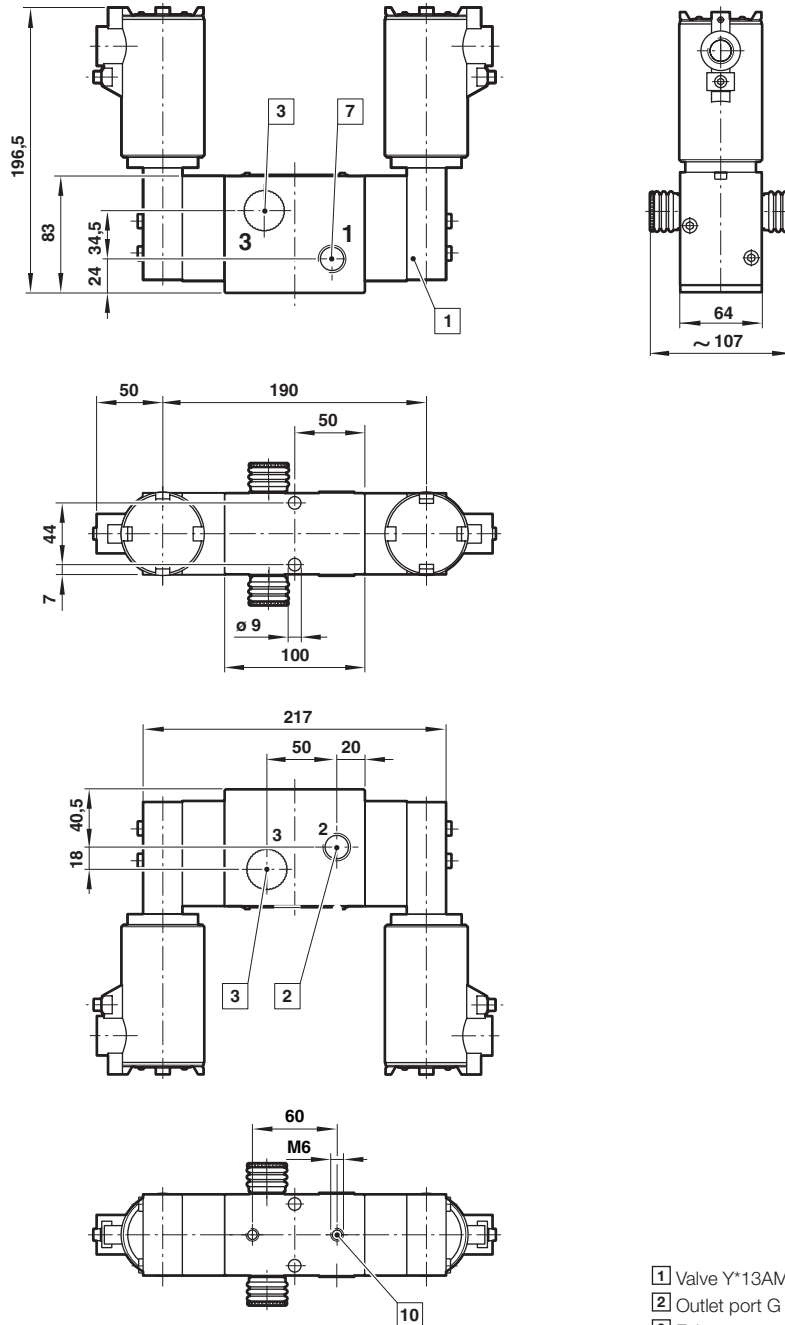
- 1 Valve Y\*13ANPH1BS and Y\*13ANPH2BS series
- 2 Outlet port G 1/4 or 1/4 NPT
- 3 Exhaust guard (sub-base), ports G 1/2 or 1/2 NPT
- 7 Inlet port G 1/4 or 1/4 NPT
- 9 Mounting holes
- 10 Mounting threads as standard or alternative to fix the bracket

**1oo2 (high flow)**
**Weight: 1,4 kg aluminium (4,0 kg stainless steel) sub-base only, valves and accessories see refer page 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
- 7 Inlet port G 1/2 or 1/2 NPT
- 9 Mounting holes
- 10 Mounting threads as standard or alternative to fix the bracket

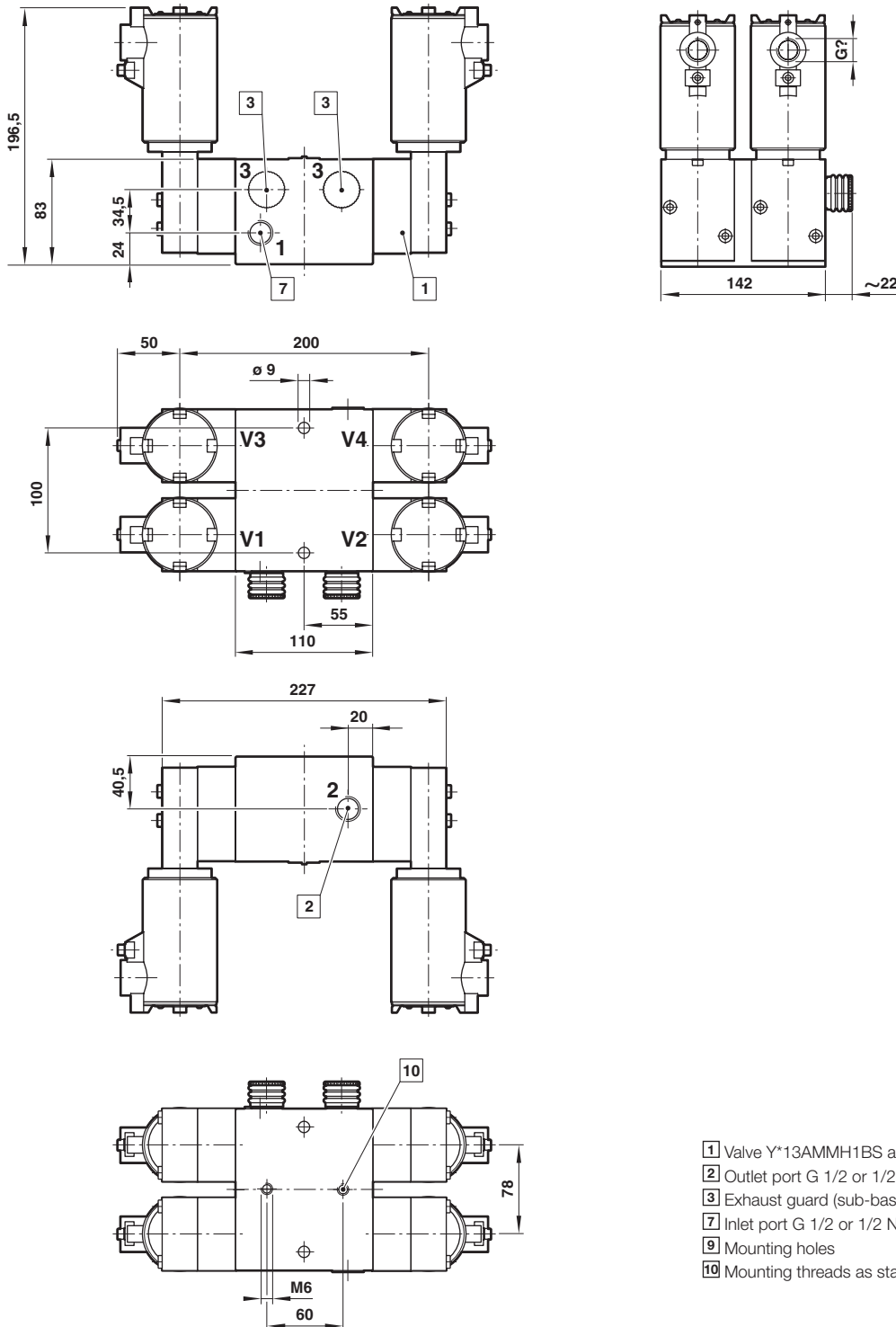
2oo2 (high flow)

Weight: 1,4 kg aluminium (4,0 kg stainless steel) sub-base only, valves and accessories see refer page 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
- 7 Inlet port G 1/2 or 1/2 NPT
- 9 Mounting holes
- 10 Mounting threads as standard or alternative to fix the bracket



**2oo3 (high flow)**
**Weight: 3,3 kg aluminium (9,3 kg stainless steel) sub-base only, valves and accessories see refer page 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
- 7 Inlet port G 1/2 or 1/2 NPT
- 9 Mounting holes
- 10 Mounting threads as standard or alternative to fix the bracket

- > 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

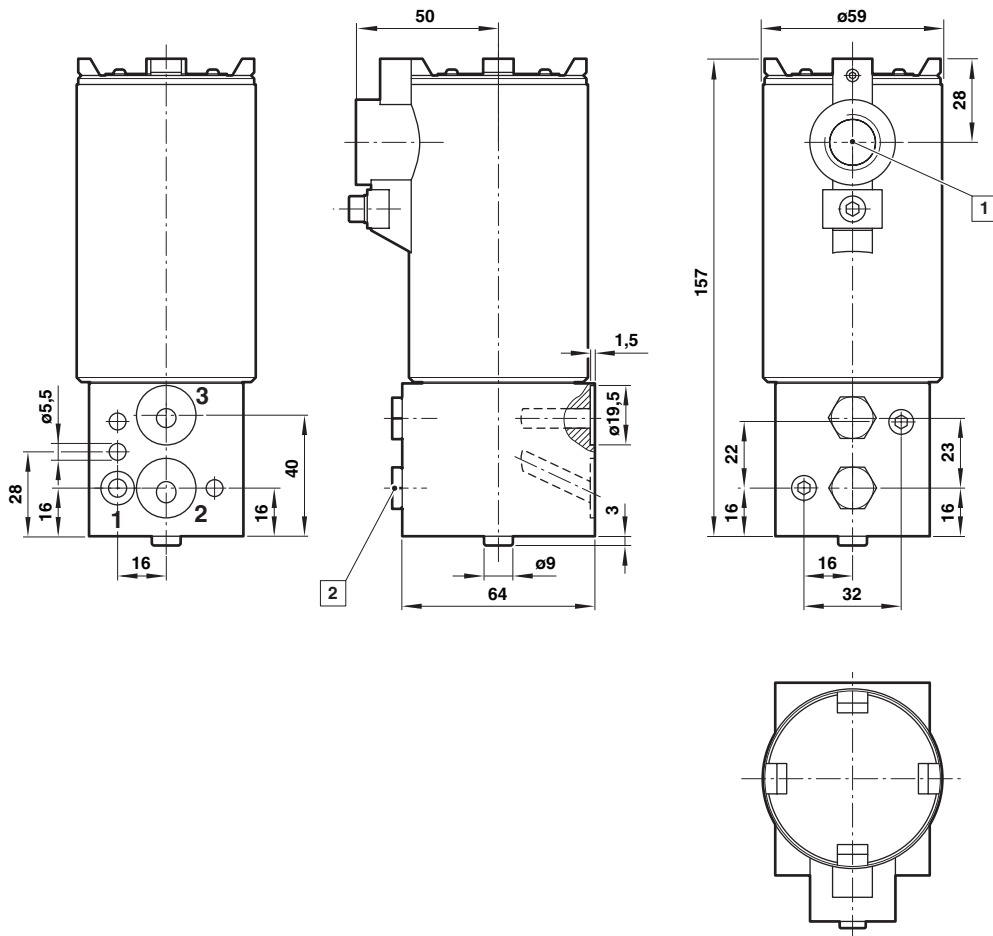
**Operating pressure:**  
 0 ... 12 bar (0 ... 174 psi) (0 ... 10 bar (0 ... 145 psi) with CSA certification)

**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)

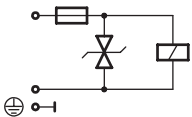
**Technical data**

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)	M 20	YX13ANPH1BS	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)	M 20	Y013ANPH1BS	02
	3	—	125	—	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	M 20	YZ13ANPH1BS	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)	M 20	Y013ANPH1MS	04
	—	3,5	—	20	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	M 20	YZ13ANPH1MS	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	YX13ANPH2BS	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	Y013ANPH2BS	07
	3	—	125	—	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	1/2 NPT	YZ13ANPH2BS	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 mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	1/2 NPT	YZ13ANPH2MS	10



- 1 Electrical connection M20 x 1,5 or 1/2 NPT
- 2 Ports plugged
- 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

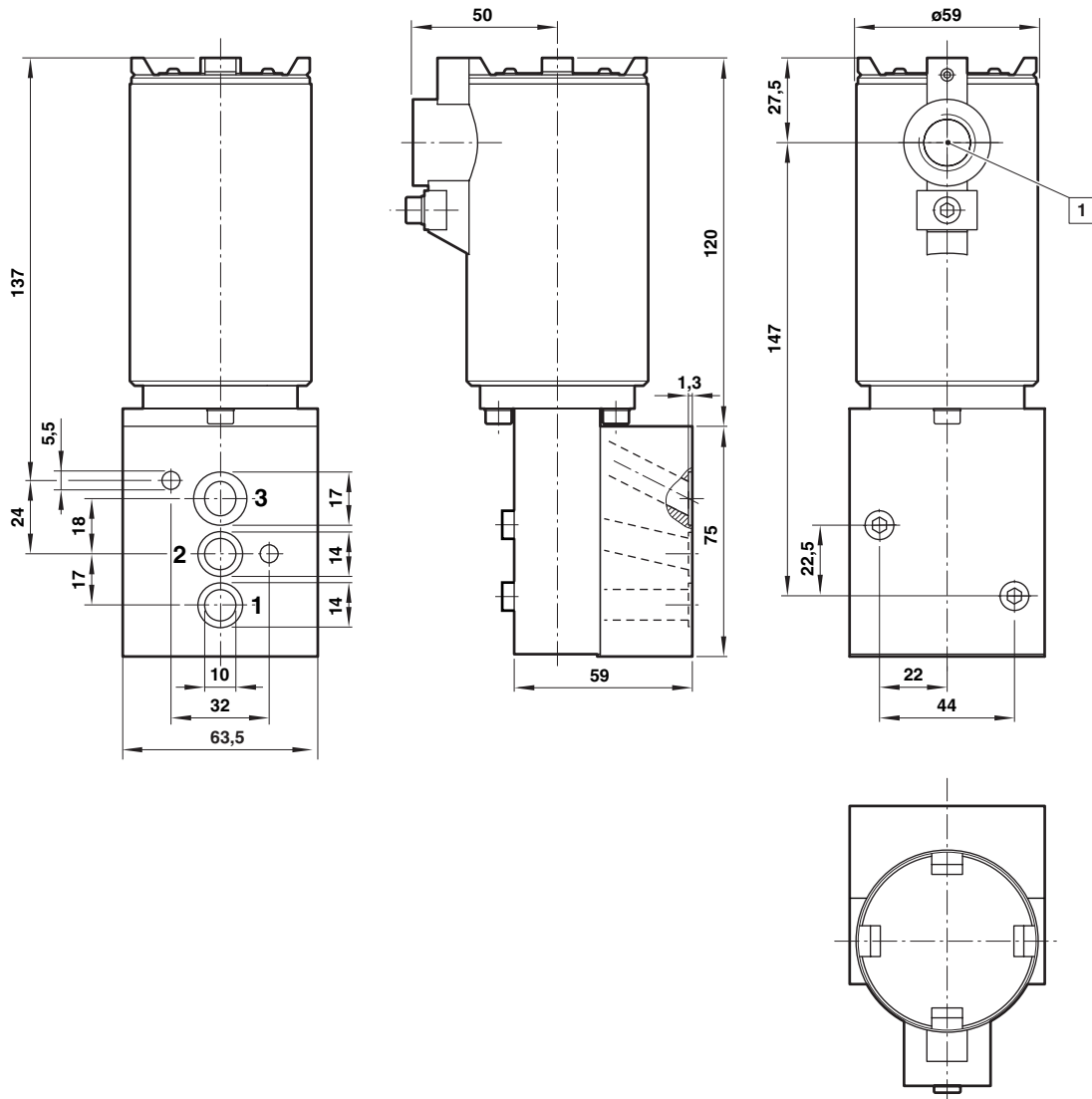
**Operating pressure:**  
 0 ... 12 bar (0 ... 174 psi)  
 (0 ... 10 bar (0 ... 145 psi) CSA)

**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)

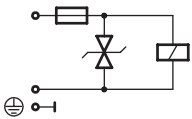
**Technical data**

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	—	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)	M 20	Y013AMMH1BS	12
	7,8	—	325	—	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	M 20	YZ13AMMH1BS	13
	—	8,5	—	79	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)	M 20	Y013AMMH1MS	14
	—	8,5	—	79	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	M 20	YZ13AMMH1MS	15
	7,8	—	325	—	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	Y013AMMH2BS	17
	7,8	—	325	—	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	1/2 NPT	YZ13AMMH2BS	18
	—	8,5	—	79	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	Y013AMMH2MS	19
	—	8,5	—	79	—	Ex mbe II 2 GD, Ex mbe IIC	-55 ... +90°C	T4 (-55 ... +80°C)	1/2 NPT	YZ13AMMH2MS	20

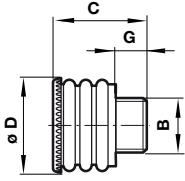


1 Electrical connection M20 x 1,5 or 1/2 NPT

**Circuit diagrams**

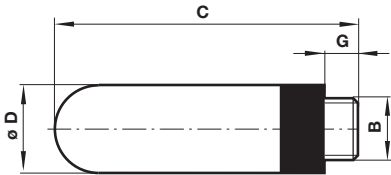


### Exhaust guard (plastic) - standard option



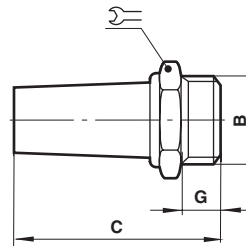
B	Suitable for	G	C	Ø D	Weight (g)	Model
1/4"	G 1/4, 1/4 NPT	10	26,5	21	5	0613422
1/2"	G 1/2, 1/2 NPT	12	33,5	29	11	0613423


### Silencer (plastic)



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

### Silencer (stainless steel)



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

### 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.