98015
3/2 poppet valves electromagnetic actuated, directly controlled G 1/2, 1/2 NPT or flanged with NAMUR Interface

Main application: single operated actuators for plants

Valves for safety systems up to SIL 4 (IEC 61508)

Add-on manual override or inductive limit switches

Valve switches at power failure into starting position (mechanical spring return)

Suited for outdoor use under critical environment conditions (see solenoid list)

These solenoid valves are applicable in Ex protection class ATEX (categories II 2 GD and II 3 GD) and other international approvals





TÜV
DIN EN 61508
IEC 61508
up to SIL 4

Approval depends on magnetic system, see page 2!

Technical features

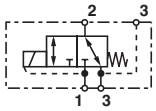
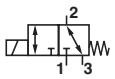
Medium:
Compressed air, filtered, non-lubricated and dry
Operation:
Direct solenoid operated poppet valves
Mounting position:
Any, but preferably with solenoid vertical

Orifice:
8 mm
Port size:
G 1/2, 1/2 NPT or flanged with NAMUR Interface
Operating pressure:
0 ... 10 bar
Flow:
1000 l/min
(1 bar pressure differential)

Flow direction:
Optional
Fluid/Ambient temperature:
-40 ... +60°C
Depending on solenoid system
Air supply must be dry enough to avoid ice formation at temperatures below +2°C.
For outdoor installation please protect all connections against the penetration of moisture!

Materials:
Housing: stainless steel 1.4404/316, brass 2.0401, aluminium anodized 3.0615
Seal: SNBR (special perbunan)
Inner parts: stainless steel, brass

Technical data

Symbol	Port size 1, 3	2 (3)	Operating pressure (bar)	Materials	Weight (kg)	Dimension No.	Model *1)
	G 1/4, G1/2	NAMUR, G1/4	0 ... 10 bar	Aluminium	0,7	1	9801505
	1/4 NPT, 1/2 NPT	NAMUR, 1/4 NPT	0 ... 10 bar	Aluminium	0,7	1	9801515
	G 1/2	G 1/2	0 ... 10 bar	Stainless steel	0,9	2	9801755
	1/2 NPT	1/2-NPT	0 ... 10 bar	Stainless steel	0,9	2	9801765
	G 1/2	G 1/2	0 ... 10 bar	Brass	0,9	2	9801655
	1/2 NPT	1/2-NPT	0 ... 10 bar	Brass	0,9	2	9801665

*1) When ordering please indicate solenoid, voltage and current Modele (frequency).

Option selector

9801★★5.★★★★.★★★.★★

Materials	Substitute
Aluminium	5
Brass	6
Stainless steel	7
Port size	**Substitute**
NAMUR, G1/4	0
NAMUR, 1/4 NPT	1
G1/2	5
1/2 NPT	6

Voltage	Substitute
24 V d.c.	024.00
230 V a.c.	230.50
Solenoids	**Substitute**
See table above	

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

Solenoid operators

	Power consumption		Rated current		Ex-Protection (ATEX-Category)	Protection class *7)	Temperature Ambient/ Fluid (°C)	Electrical connection	Weight	Dimension	Circuit diagram	Model
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (m A)	230 V a.c (m A)					(kg)	No.	No.	
	16,9	-	703	-	-	IP 65 (with connector) *5)	-25 ... +60 Fluid: max. 80	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0800
	-	17,3	-	75	-	IP 65 (with connector) *5)	-25 ... +60 Fluid: max. 80	Connector DIN EN 175301-803 Form A *6)	0,35	4	6	3803
	8,9	-	369	-		IP65	-30...+90 Fluid: 110	Terminals, cable gland Pg 13,5	0,5	9	2	4120
	-	10,0	-	43		IP65	-30...+90 Fluid: 110	Terminals, cable gland Pg 13,5	0,5	9	6	4121
	8,9		369	-		IP67	-30...+90 Fluid: 110	3 m cable, encapsulated in EP resin	0,7	9	2	4122
	-	10,0	-	43		IP67	-30...+90 Fluid: 110	3 m cable, encapsulated in EP resin	0,7	9	6	4123
	8,9	-	369	-	II2G II2D	Ex emb II T4/T5 Ex tD A21 IP66 T130°C *2), *10)	-40 ... +65 T4 -40 ... +55 T5 -40 ... +65	M20 x 1,5 *6)	0,5	6	4	4270 *8)
	-	10,0	-	43	II2G II2D	Ex emb II T4/T5 Ex tD A21 IP66 T130°C *2), *10)	-40 ... +65 T4 -40 ... +55 T5 -40 ... +65	M20 x 1,5 *6)	0,5	6	7	4271 *8)
	8,9	-	369	-	II2G Ex emb II T4/T6 II2D	Ex dmb IIC T4/T6 Ex tD A21 IP66 T130°C *3)	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	1/2 - 14 NPT *6)	0,8	7	4	4670 *8)
	-	10,0	-	43	II2G Ex emb II T4/T6 II2D	Ex dmb IIC T4/T6 Ex tD A21 IP66 T130°C *3	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	1/2 - 14 NPT *6)	0,8	7	7	4671 *8)
	8,9	-	369	-	II2G Ex emb II T4/T6 II2D	Ex dmb IIC T4/T6 Ex tD A21 IP66 T130°C *3	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	M20 x 1,5 *6)	0,8	7	4	4672 *8)
	-	10,0	-	43	II2G Ex emb II T4/T6 II2D	Ex dmb IIC T4/T6 Ex tD A21 IP66 T130°C *3	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	M20 x 1,5 *6)	0,8	7	7	4673 *8)
Stainless steel 	8,9	–	369	–	II2G Ex mb e II T4/T6 II2D	Ex mb d IIC T4/T6 Ex mbD 21 tD A21 IP66 T100°C Ex tD A21 IP66 T100°C *1) *10)	-40 ... +50 T4 -40 ... +40 T6 -40 ... +50	M20x1,5 *6)	1,2	10	4	4872 *8), *11)
	–	10	–	43	II2G Ex mb e II T4/T6 II2D	Ex mb d IIC T4/T6 Ex mbD 21 tD A21 IP66 T100°C Ex tD A21 IP66 T100°C *1) *10)	-40 ... +50 T4 -40 ... +40 T6 -40 ... +50	M20x1,5 *6)	1,2	10	7	4873 *8), *11)
	13,6	-	567	-	-	XP/DIP, Div. 1 & 2 Cl. I, Gr. A-D Cl. II/III, Gr. E-G T3 (160°C) *4) NEMA 4, 4X, 6, 6P, 7, 9 *4)	-20 ... +60	Flying leads 450 mm long	0,5	9	1	3826
	-	15,7	-	68	-	XP/DIP, Div. 1 & 2 Cl. I, Gr. A-D Cl. II/III, Gr. E-G T3 (160°C) *4) NEMA 4, 4X, 6, 6P, 7, 9 *4)	-20 ... +60	Flying leads 450 mm long	0,5	9	5	3827

Standard voltages 24 V d.c., 230 V a.c., other voltages on request.
Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

*1) EG-Type-Examination-Certificate KEMA 02 ATEX 1347 X
*2) EG-Type-Examination-Certificate KEMA 98 ATEX 4452 X
*3) EG-Type-Examination-Certificate PTB 02 ATEX 2085 X
*4) CSA-LR 57643-6, FM Approval
*5) Required connector: type 0570275
*6) Connector cable gland not supplied, see table »Accessories«
*7) IP-Protection class according to EN60529
*8) Suitable for outdoor installation
*10) IEC Ex Certificate of Conformity
*11) EG-Type-Examination-Certificate PTB 06 ATEX 2054 X

Attention:

The protection class for coil series 46xx and 48xx is determined by the choice of cable gland.

Example: if an ATEX-certified cable gland is used that has Ex d type of protection, the solenoid will have the protection class Ex dmb; if a cable gland with Ex e type of proteciton is used, the solenoid will have protection class Ex emb.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

Accessories

Cable gland
Protection class Ex e, Ex d (ATEX),
Nickel plated brass/stainless steel



Thread	Cable Ø	Material	Protection class (ATEX)	Model
M 20x1,5	5,0...8,0 mm	Nickel plated brass	II2GD Ex e	0588819
M 20x1,5	10...14 mm	Nickel plated brass	II2GD Ex d	0588851
1/2-14-NPT	7,5...11,9 mm	Nickel plated brass	II2GD Ex d, Ex e	0588925
M 20x1,5	9,0...13 mm	Stainless steel 1.4571	II2GD Ex e	0589385
M 20x1,5	7,0...12 mm	Stainless steel 1.4404	II2GD Ex d	0589395
M 20x1,5	10...14 mm	Stainless steel 1.4404	II2GD Ex d	0589387

Accessories

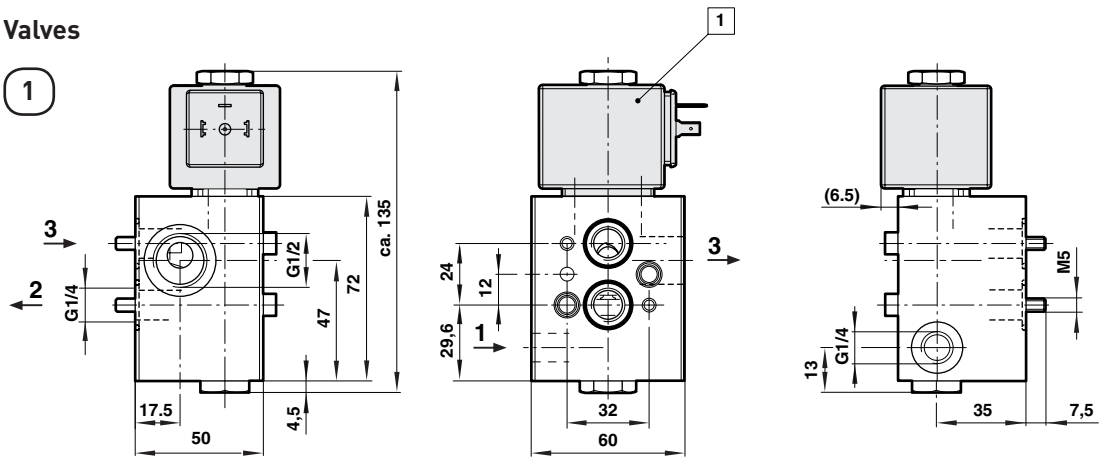
Connector	Silencer *1)	Exhaust guard *2)	Throttle control plate	Flange plate	Yoke
					
	Page 7	Page 7	Page 6	Page 6	Page 6
0570275	C/S2 (1/4 NPT)	0613422 (G1/4, 1/4NPT)	4040239 (for G1/4 only)	0612790 (NAMUR single connection plate, for G1/4 only)	0540593
	M/S2 (G 1/4)	0613423 (G1/2, 1/2NPT)		0612791 (NAMUR-rip use in combination with 0612790, Alu)	
	C/S4 (1/2 NPT)				
	M/S4 (G 1/2)				

*1) For indoors use
*2) For outdoors use

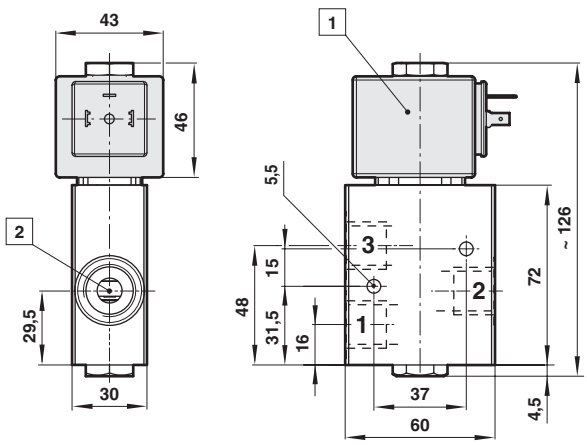
Dimensions

Valves

1



2



1 Solenoid optional turnable, for dimensions see page 4

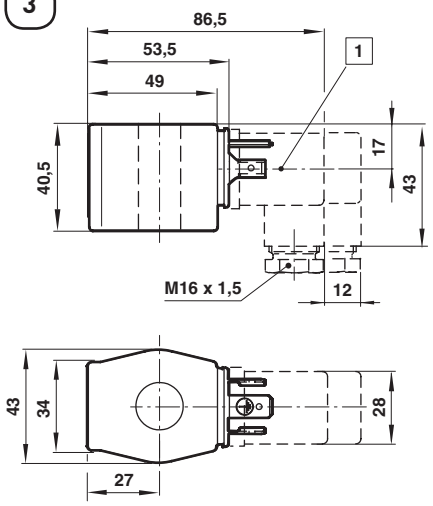
2 Working port G 1/2 or 1/2 NPT

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

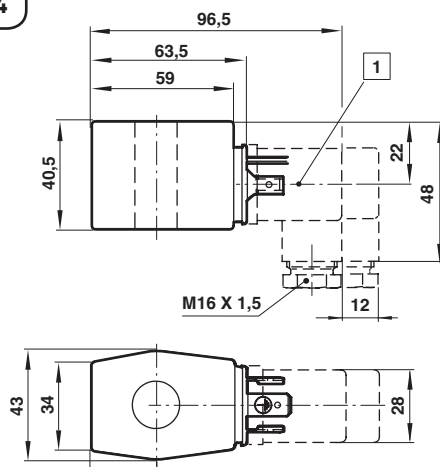
Dimensions

Solenoids

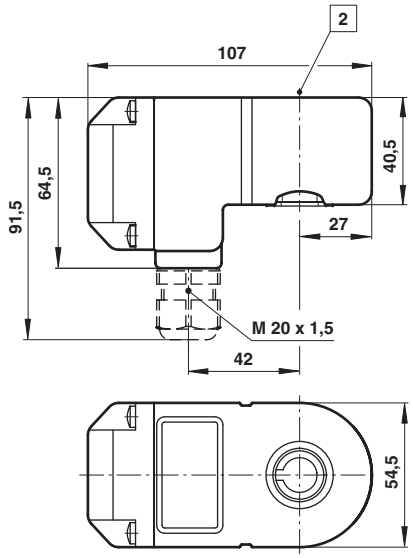
3



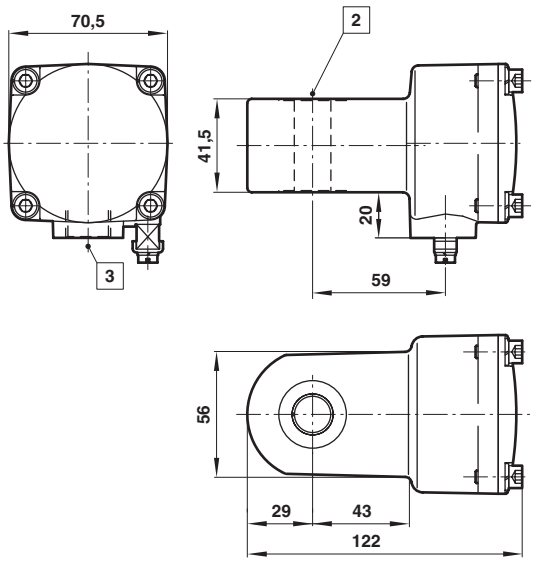
4



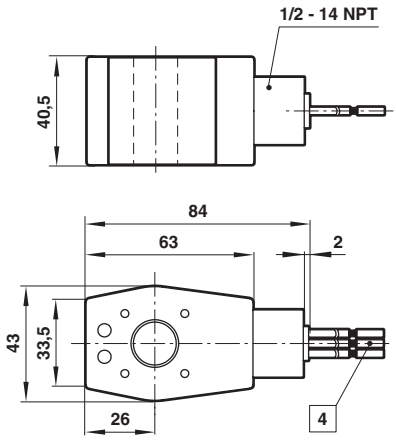
6



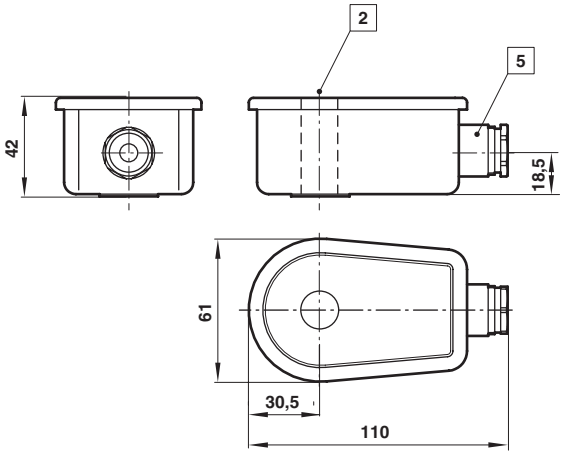
7



8



9



1 Connector can be indexed by 4x90°

2 Ø 16 or 13 (with spacer tube)

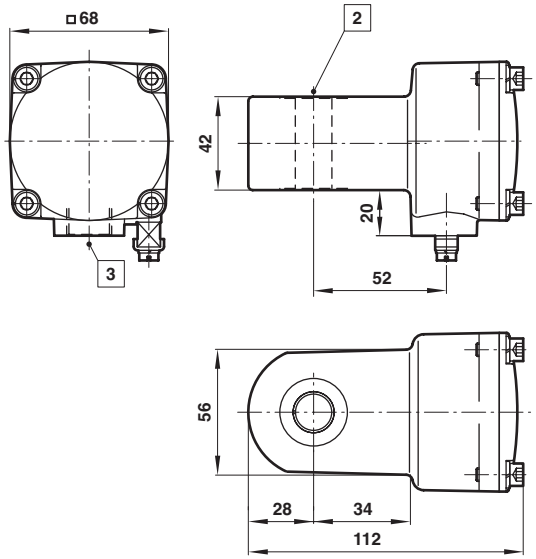
3 M20 x 1,5 or 1/2 - 14 NPT

4 Flying leads AWG 18 (450 mm long)

5 With cable gland, Pg 13,5

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

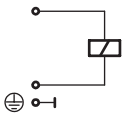
10



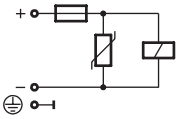
2 Ø 16 or 13 (with spacer tube)

Circuit diagrams

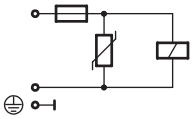
1



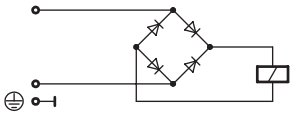
2



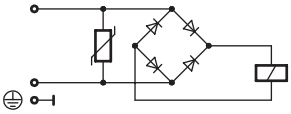
4



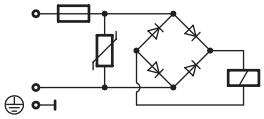
5



6

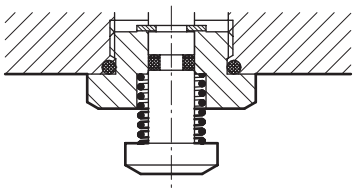


7

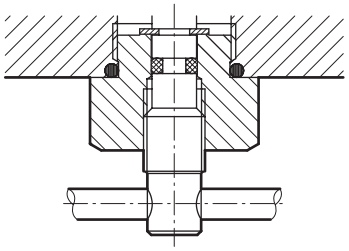


Add-on manual override

Without detent
Model: 0600205



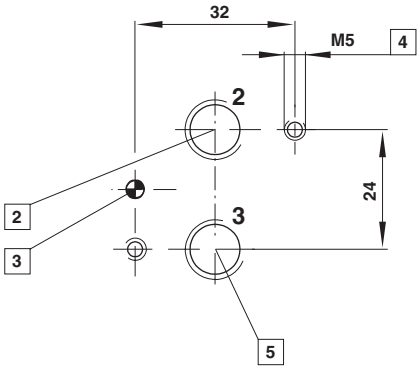
With detent
Model: 0601765



Please note: add-on manual override for NAMUR valves provided only for commissioning and tests

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

NAMUR hole pattern



2 Port 2 (A)

3 Coding stud threaded

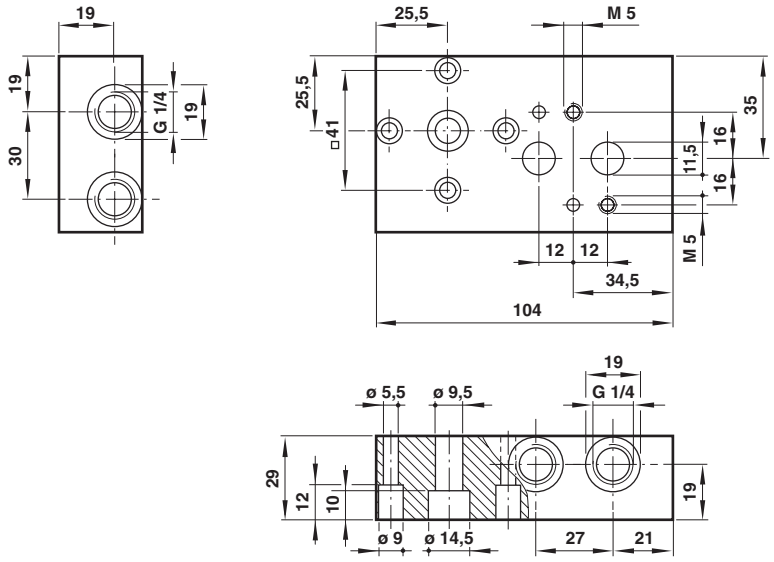
4 M5 (10 deep)

5 Port 3 (R)

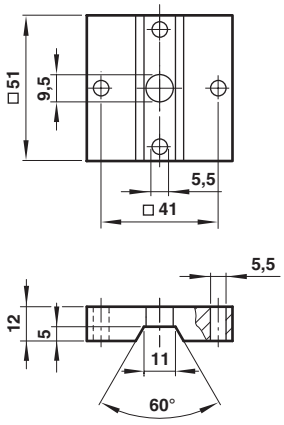
NAMUR quick exhaust module for a better kv-value by exhaust see data sheet 5.4.820

NAMUR interlinking plates in redundancy design for »safety exhausting« and »safety ventilating« see data sheet 5.4.830

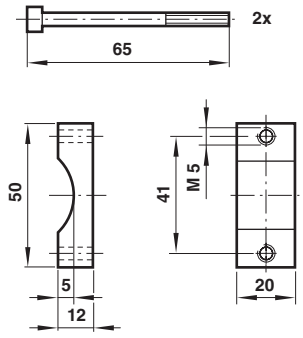
Single connection plate
Model: 0612790



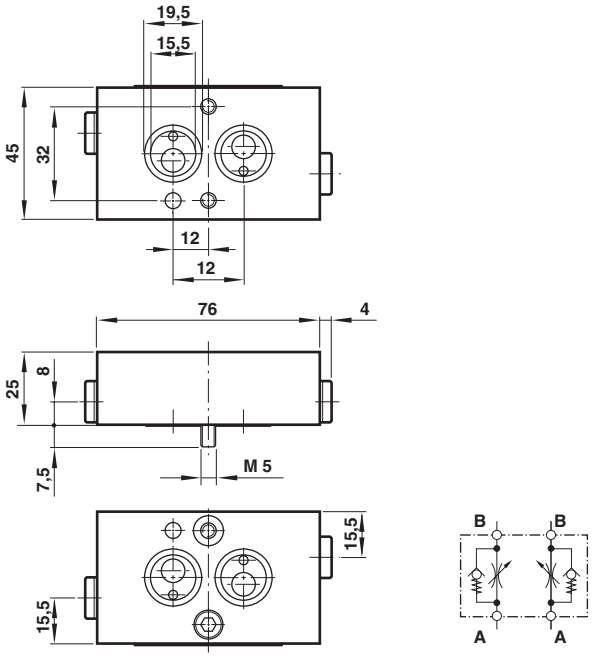
NAMUR slot
Model: 0612791



Yoke
Model: 0540593

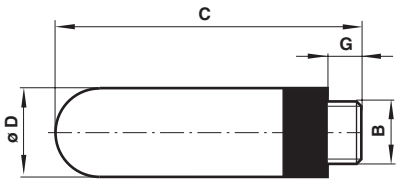


Throttle control plate
Model: 4040239



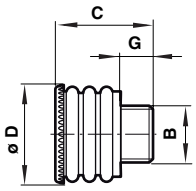
Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

Silencer
Model: M/S2, M/S4, C/S2, C/S4



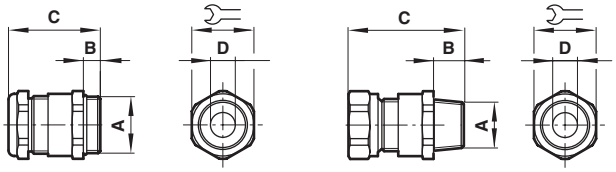
B	G	C	Ø D	Weight (g)	Model
G1/4	7	35,5	15,5	2,9	M/S2
1/4 NPT	7	35,5	15,5	2,9	C/S2
G1/2	12	67	23	11,5	M/S4
1/2 NPT	12	67	23	11,5	C/S4

Exhaust guard
Model: 0613422, 061323



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

Cable gland



0588925 only

A	B	C	ø D		Model
M20 x 1,5	9	36	5 ... 8	22	0588819
M20 x 1,5	6,5	27,5	9 ... 13	22	0589385
M20 x 1,5	14	39	10 ... 14	24	0588851
1/2-14 NPT	15	58	7,5 ... 11,9	24	0588925
M20 x 1,5	14	39	7 ... 12	24	0589395
M20 x 1,5	10	34	10 ... 14	24	0589387

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«**.

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 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.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.