NORGREN
ENERGY SECTOR

98015
3/2 poppet valves
electromagnetic actuated, directly controlled
G 1/4, 1/4 NPT, 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)

Optional add-on manual override or inductive limit switches on request

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

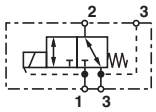
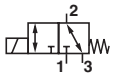
Medium:
Compressed air, filtered, non-lubricated and dry
Operation:
Direct solenoid operated poppet valves
Mounting position:
Any, but preferably with solenoid vertical

Orifice:
8 mm
Port size:
G 1/4, 1/4 NPT, G 1/2, 1/2 NPT or flanged with NAMUR Interface
Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Flow:
1/4: 900 l/min; 1/2: 1000 l/min (1 bar pressure differential)

Flow direction:
Optional
Fluid/Ambient temperature:
-40 ... +60°C (-40 ... +140°F)
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 the penetration of moisture!

Materials:
Housing: stainless steel 1.4404 (316L), 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	Manual override*2)	Test certificate IEC 61 508 *3)	Weight (kg)	Dimension No.	Model *1)
	G 1/4, G1/2	NAMUR, G1/4	0 ... 10	Aluminium	Without	x	0,7	1	9801505
	1/4 NPT, 1/2 NPT	NAMUR, 1/4 NPT	0 ... 10	Aluminium	Without	-	0,7	1	9801515
	G 1/4	G 1/4	0 ... 10	Stainless steel	Without	-	0,9	2	9801735
	1/4 NPT	1/4 NPT	0 ... 10	Stainless steel	Without	-	0,9	2	9801745
	G 1/2	G 1/2	0 ... 10	Stainless steel	Without	x	0,9	2	9801755
	1/2 NPT	1/2-NPT	0 ... 10	Stainless steel	Without	-	0,9	2	9801765
	G 1/2	G 1/2	0 ... 10	Brass	Without	x	0,9	2	9801655
	1/2 NPT	1/2-NPT	0 ... 10	Brass	Without	-	0,9	2	9801665

*1) When ordering please indicate solenoid, voltage and current Modele (frequency).
*2) Add-on manual override see page
*3) IEC 61 508 Temperature range -25 ... +70 °C

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
G 1/4	3
1/4 NPT	4
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	

Solenoid operators

	Power consumption 24 V d.c. (W)	Power consumption 230 V a.c. (VA)	Rated current 24 V d.c. (m A)	Rated current 230 V a.c. (m A)	Ex-Protection (ATEX-Category)	Protection class *7)	Temperature Ambient/ Fluid (°C)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model
	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 e mb IIC T4/T5 Gb Ex tb IIIC T 130°C Db IP66 *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 e mb IIC T4/T5 Gb Ex tb IIIC T 130°C Db IP66 *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 II2D	Ex d mb IIC T4/T6 Gb Ex e mb IIC T4/T6 Gb Ex tb IIIC T130°C Db *3) *10)	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	1/2 - 14 NPT *6)	0,8	7	20	4670 *8)
	—	10,0	—	43	II2G II2D	Ex d mb IIC T4/T6 Gb Ex e mb IIC T4/T6 Gb Ex tb IIIC T130°C Db *3) *10)	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	1/2 - 14 NPT *6)	0,8	7	21	4671 *8)
	8,9	—	369	—	II2G II2D	Ex d mb IIC T4/T6 Gb Ex e mb IIC T4/T6 Gb Ex tb IIIC T130°C Db *3) *10)	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	M20 x 1,5 *6)	0,8	7	20	4672 *8)
	—	10,0	—	43	II2G II2D	Ex d mb IIC T4/T6 Gb Ex e mb IIC T4/T6 Gb Ex tb IIIC T130°C Db *3) *10)	-40 ... +70 T4 -40 ... +40 T6 -40 ... +70	M20 x 1,5 *6)	0,8	7	21	4673 *8)
Stainless steel 	8,9	–	369	–	II2G II2D	Ex mb d IIC T4/T6 Ex mb e II 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 II2D	Ex mb d IIC T4/T6 Ex mb e II 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	8	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	8	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.

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

Connector	Silencer *1)	Exhaust guard *2)	Add-on manual override /manual reset *3) Without detent	with detent
				
	Page 8	Page 8	Page 4	
0570275	C/S2 (1/4 NPT)	0613422 (G1/4, 1/4NPT)	0600205	0601765
	M/S2 (G 1/4)			
	C/S4 (1/2 NPT)	0613423 (G1/2, 1/2NPT)		
	M/S4 (G 1/2)			

*1) For indoors use
*2) For outdoors use
*3) Manual override
Solenoid not energized with button actuation valve is connected and reset by spring. (For testing only prior to commissioning) Manual reset
Solenoid energized. When button operation valve is switched and remains switched to magnetic current.

Throttle control plate	Flange plate	Yoke
		
Page 6	Page 6	Page 6
4040239 (for G1/4 only)	0612790 (NAMUR single connection plate, for G1/4 only)	0540593
	0612791 (NAMUR-rip use in combination with 0612790, Alu)	

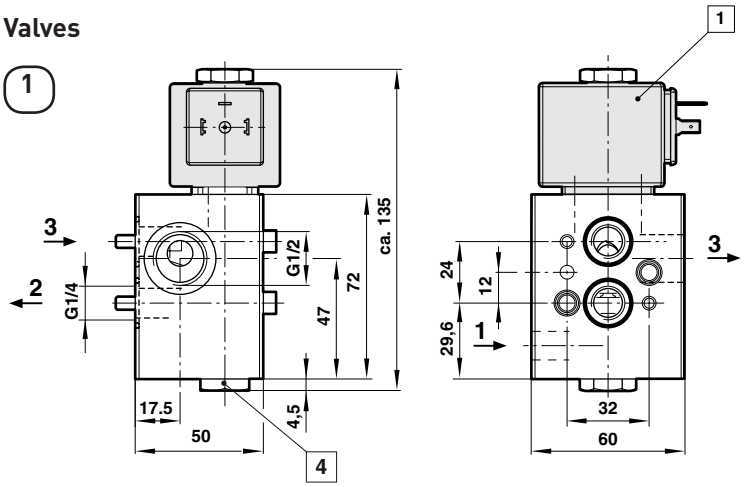
Dimensions

Dimensions shown in mm

Projection/First angle

Valves

1



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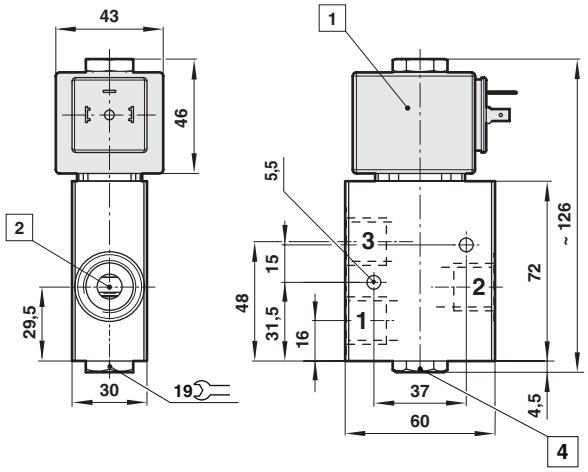
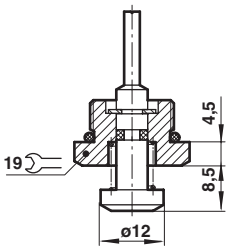


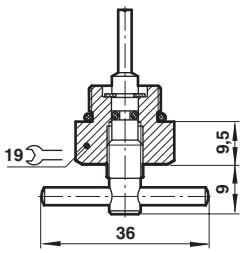
1 Solenoid optional turnable, for dimensions see page 5
2 Working port G 1/2 or 1/2 NPT
4 Add on manual override, see below

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

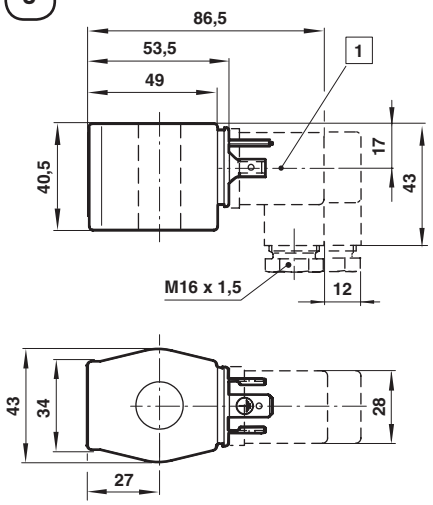
Dimensions

Dimensions shown in mm

Projection/First angle

Solenoids

3



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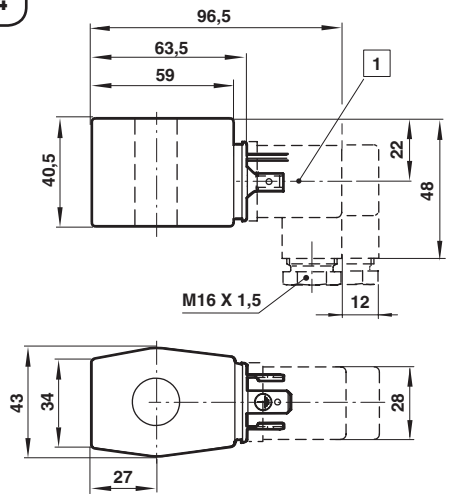

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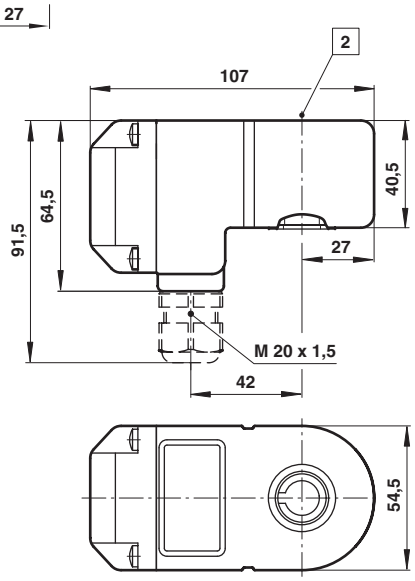

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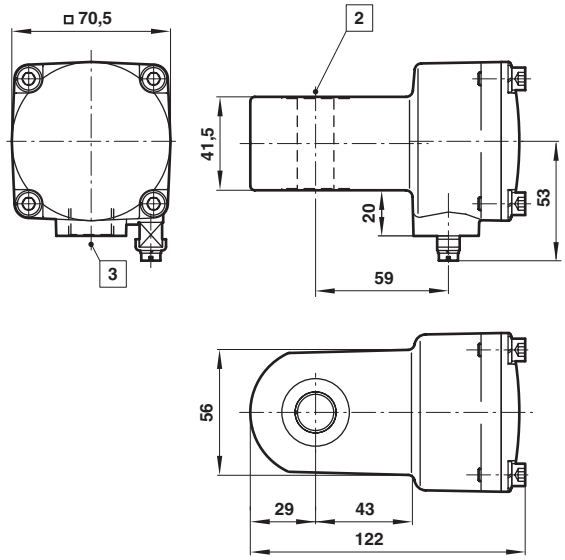

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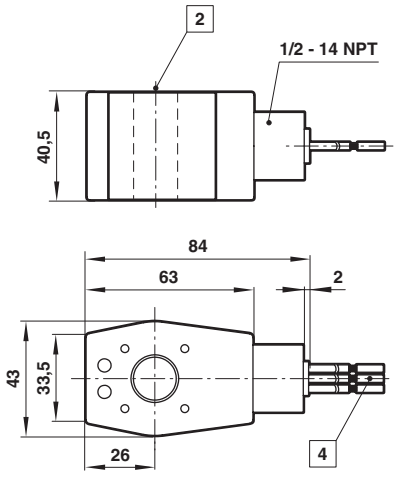

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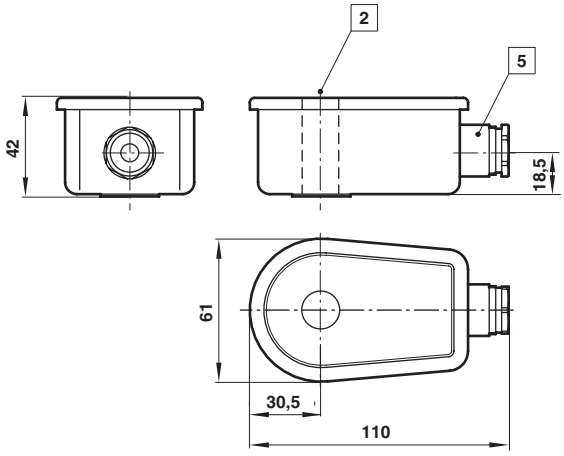
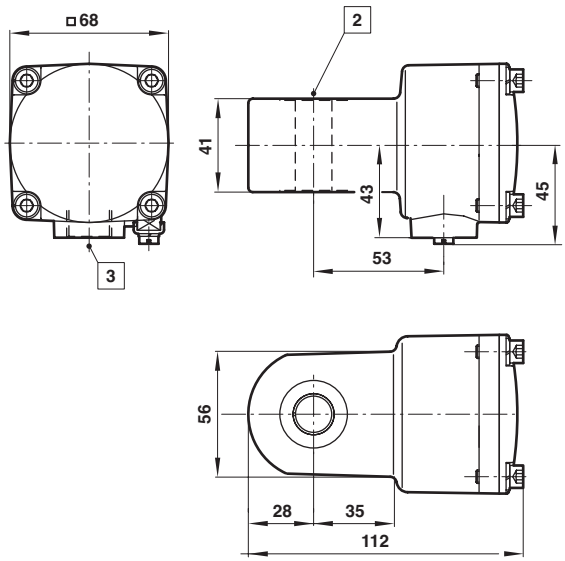


1 Connector can be indexed by 4x90°
2 Ø 16 or 13 (with spacer tube)
3 M20 x 1,5 or 1/2 - 14 NPT
4 Flying leads AWG 18 (450 mm long)
5 With cable gland, Pg 13,5

10

Dimensions shown in mm

Projection/First angle

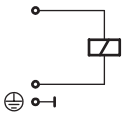


2 Ø 16 or 13 (with spacer tube)

3 M20 x 1,5

Circuit diagrams

1



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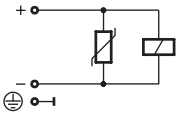

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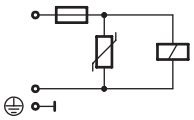

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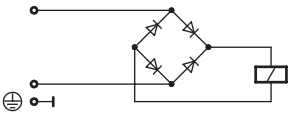

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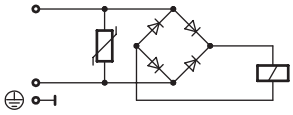

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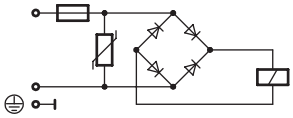

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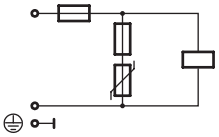

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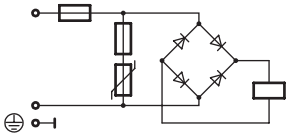
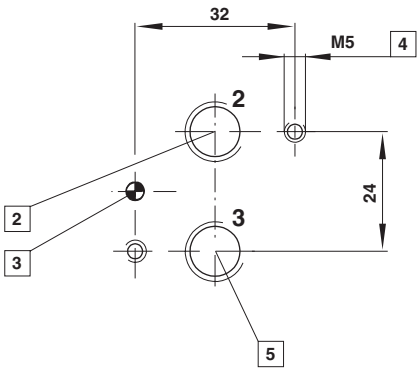


NAMUR hole pattern (driving side)

Dimensions shown in mm

Projection/First angle



2 Port 2 (A)

3 Coding stud threaded

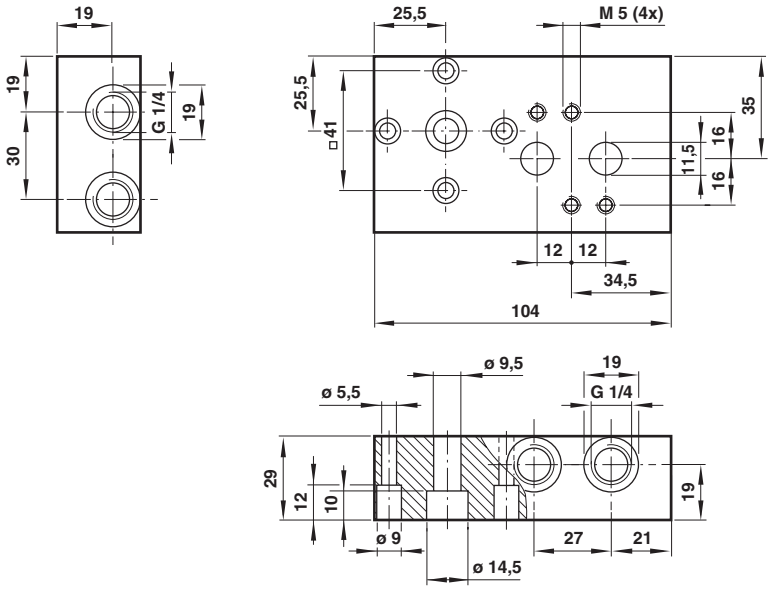
4 M5 (10 deep)

5 Port 3 (R)

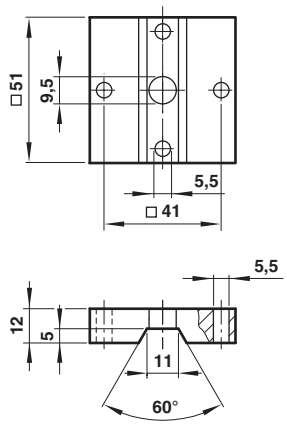
NAMUR quick exhaust module for a better kv-value by exhaust see data sheet 5.4.820

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

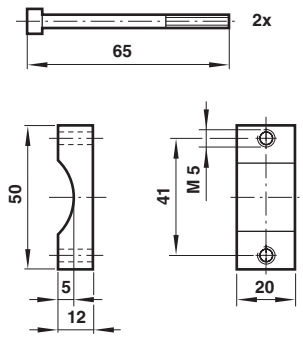
Single connection plate
Model: 0612790



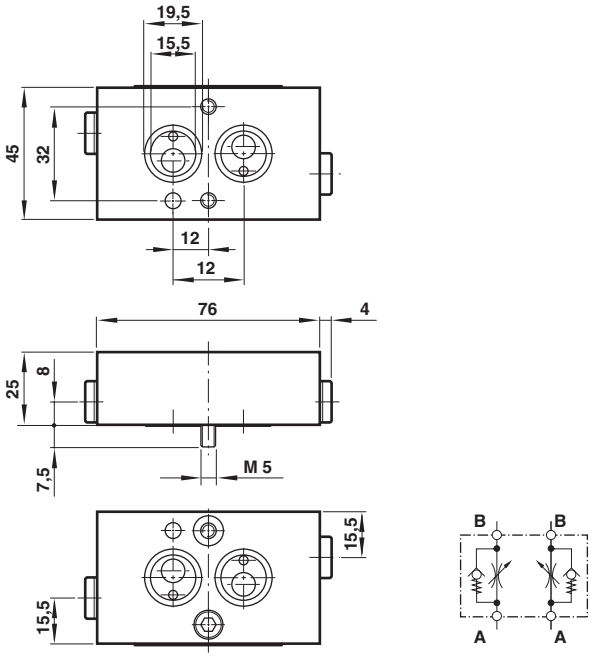
NAMUR slot
Model: 0612791



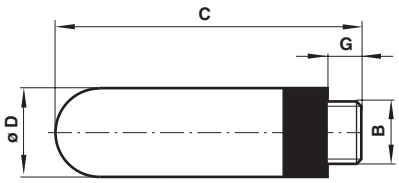
Yoke
Model: 0540593



Throttle control plate
Model: 4040239



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

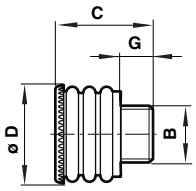


B	G	C	Ø D	Weight (g)	Model
G1/4	7	35,5	15,5	2,9	M/S2
1/4 NPT	7	35,5	15,5	2,9	C/S2
G1/2	12	67	23	11,5	M/S4
1/2 NPT	12	67	23	11,5	C/S4

Exhaust guard
Model: 0613422, 061323

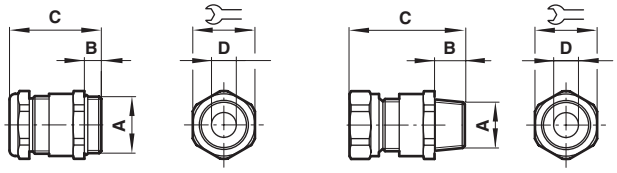
Dimensions shown in mm

Projection/First angle



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 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 pneumatic 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.