

3/2 Directional control valves, s/steel
Operation: elektromagnetic
Directly controlled poppet valves
Port size: G 1/2 and 1/2 NPT

Working from 0 bar up

**Suitable for vacuum range down
to 1.33·10⁻² mbar·l/s**

**Protection class IP 65, EEx me, EEx d,
ATEX approved (see solenoid table)**



Technical data

Medium:

For aggressive fluids

With contaminated fluids, upstream installation of a dirt trap is recommended.

Operation:

Direct solenoid operated poppet valves

Mounting position:

Optional, preferably vertical

Flow direction:

Optional

Nominal size:

8 and 12 mm

Connection:

G 1/2 and 1/2 NPT

Operating pressure:

0 to 40 bar

Ambient temperature:

Depending on solenoid system

-10* (-40*) to +90°C

Fluid temperature:

Depending on the seals

-10* (-40*) to +140°C

*Please consult our technical service for use below +2°C. If installed
in the open protect all connections against the penetration of moisture!

Materials:

Housing: 1.4571

Seat seal: FKM (Viton), PTFE (Teflon), Stahl 1.4112

Inner part: Steel 1.4104, 1.4571

Sleeves: FKM (Viton), PTFE (Teflon)

Ordering information

3/2 directional control valve, connection G 1/2,
voltage 24 V DC, protection class IP 65

Type: 2413306.1300.024.00

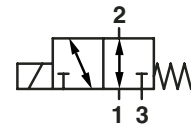
Further versions

With manual override

Switching-position monitoring:

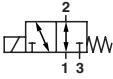
Mechanical/electrical, contactless (inductive)

Semi-automatic designs

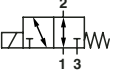


General information

Valves in protection class IP 65 and EEx me II T4/T5

Symbol	Type *1) Valve	Solenoid Groupe	Connection	Nominal size	Operating pressure (bar)			kv-value (Cv (US) ≈ kv x 1,2)		Material Seal	Weight (kg)	Dimensions No.
					Min.	Max. gaseous	liquid	Way 1-2	Way 2-3			
	2413306	30,5A	G 1/2	12	0	12	12	1,25	1,69	FKM *2)	3,2	1
	2413332	30,5A	1/2 NPT	12	0	10	–	1,25	1,69	FKM *2)	3,2	1
	2413350	38,5A	G 1/2	12	0	–	12	1,25	1,69	PTFE *3)	3,2	1
	2413404	38,5A	G 1/2	12	0	25	25	1,65	2,17	FKM *2)	4,2	2
	2413450	38,5A	G 1/2	12	0	–	25	1,65	2,17	PTFE *3)	4,2	2
	2413504	38,5A	G 1/2	12	0	40	40	1,25	1,69	FKM *2)	4,2	2
	2413550	38,5A	G 1/2	12	0	–	40	1,25	1,69	PTFE *3)	4,2	2

Valves in protection clas EEx d IIC T4

Symbol	Type *1) Valve	Solenoid Groupe	Connection	Nominal size	Operating pressure (bar)			kv-value (Cv (US) ≈ kv x 1,2)		Material Seal	Weight (kg)	Dimensions No.
					Min.	Max. gaseous	liquid	Way 1-2	Way 2-3			
	2413109	30,5B	G 1/2	8	0	15	15	0,78	1,10	FKM *2)	5,8	1
	2413309	30,5B	G 1/2	12	0	10	12	1,25	1,69	FKM *2)	6,2	1
	2413331	30,5B	1/2 NPT	12	0	12	12	1,25	1,69	FKM *2)	6,2	1
	2413351	30,5B	G 1/2	12	0	–	12	1,25	1,69	PTFE *3)	6,2	1
	2413406	38,5B	G 1/2	12	0	25	25	1,65	2,17	FKM *2)	6,4	2
	2413451	38,5B	G 1/2	12	0	–	25	1,65	2,17	PTFE *3)	6,4	2
	2413506	38,5B	G 1/2	12	0	40	40	1,25	1,69	FKM *2)	6,4	2
	2413551	38,5B	G 1/2	12	0	–	40	1,25	1,69	PTFE *3)	6,4	2

* When ordering please indicate solenoid, voltage and current type (frequency)

*2) Sleeves and O-rings FKM

*3) Sleeves, PTFE, O-rings FKM

The valves can be used in combination with a connector piece

Type: **0655013** as 2/2 directional control valves, normally closed or normally open

Solenoid operators
Solenoids group 30,5A

	Type	Power consumption		Rated current		Ex- Protection Categorie	Protection class	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimensions	Circuit diagram No.
		24 V DC (W)	230 V AC (VA)	24 V DC (mA)	230 V AC (mA)						No.	
	1300	21,4	-	891	-	-	IP65 with cable gland	-25...+60	M20x1,5	1,35	7	2
	1301	-	22,8	-	99	-	IP65 with cable gland	-25...+60	M20x1,5	1,35	7	6
	1440	21,4	-	891	-	II2G	EEx me II T4 *1) EEx me II T5 *1)	-20...+80 -40...+60	M20x1,5 *6)	2,0	8	4
	1441	-	22,8	-	99	II2G	EEx me II T4 *1) EEx me II T5 *1)	-20...+80 -40...+60	M20x1,5 *6)	2,0	8	7

Solenoids group 30,5B

	Type	Power consumption		Rated current		Ex- Protection Categorie	Protection class	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimensions	Circuit diagram No.
		24 V DC (W)	230 V AC (VA)	24 V DC (mA)	230 V AC (mA)						No.	
	1480	21,4	-	891	-	II2G II2D	EEx d IIC T4 *2 IP66 T90°C	-40...+60	1/2 NPT *6)	3,3	9	2
	1481	-	22,8	-	99	II2G II2D	EEx d IIC T4 *2 IP66 T90°C	-40...+60	1/2 NPT *6)	3,3	9	6

Solenoids group 38,5A

	Type	Power consumption		Rated current		Ex- Protection Categorie	Protection class	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimensions	Circuit diagram No.
		24 V DC (W)	230 V AC (VA)	24 V DC (mA)	230 V AC (mA)						No.	
	1500	35,9	-	1497	-	-	IP65 with cable gland	-25...+60 Fluid max. +80	M20x1,5	2,5	10	2
	1501	-	38,9	-	169	-	IP65 with cable gland	-25...+60 Fluid max. +80	M20x1,5	2,5	10	6
	1570	35,9	-	1497	-	II2G	EEx me II T5 *3)	-20...+40	M20x1,5 *6)	3,6	11	2
	1571	-	38,9	-	169	II2G	EEx me II T5 *3)	-20...+40	M20x1,5 *6)	3,6	11	6

Solenoids group 38,5B

	Type	Power consumption		Rated current		Ex- Protection Categorie	Protection class	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimensions	Circuit diagram No.
		24 V DC (W)	230 V AC (VA)	24 V DC (mA)	230 V AC (mA)						No.	
	1680	35,9	-	1497	-	II2G II2D	EEx d IIC T4 *2) IP66 T105°C	-40...+60	1/2 NPT *6)	4,2	9	2
	1681	-	38,9	-	169	II2G II2D	EEx d IIC T4 *2) IP66 T105°C	-40...+60	1/2 NPT *6)	4,2	9	6

Standard voltages 24V DC, 230V AC. Other voltages on request
Design acc. to VDE 0580, EN 50014/50028. 100% duty cycle.

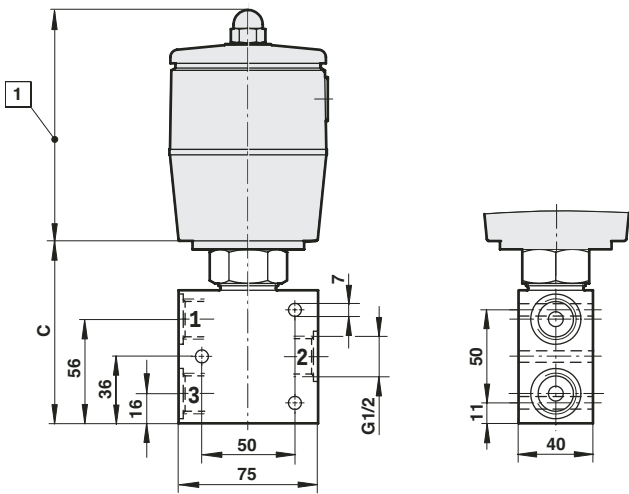
- *1) EC-Type-Examination-Certificate KEMA 03 ATEX 1016 X
- *2) EC-Type-Examination-Certificate EXAM BVS 03 ATEX E295
- *3) EC-Type-Examination-Certificate PTB ATEX 2032 X
- *6) Cable gland is not indicated in delivery, see assembly parts

Accessories

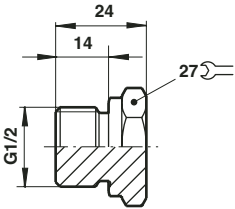
Port size	Cable gland protection class IP65 Ms nickel plated brass	Cable gland protection class EEx e, EEx d (ATEX), Ms nickel plated brass
		
M20 x 1,5	0589241 (ø 6,5...9,5 mm)	EEx e 0588819
M20 x 1,5	0589242 (ø 9,0...13 mm)	EEx d 0588851
1/2 NPT		EEx d, EEx e 0588925

Basic dimensions for valves

①, ②



Accessories



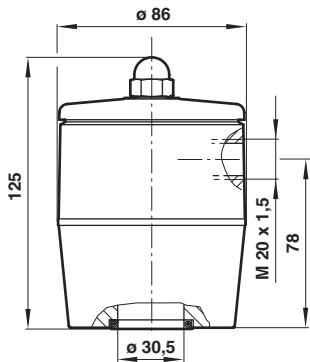
Plug type: **0655013**
Internal thread G 1/2
(material s/steel 1.4571, with sealing edge)

① Dimensions see page 5

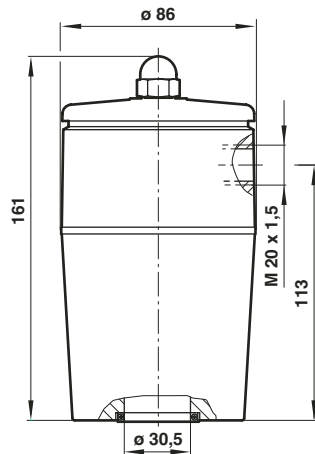
Dimensional drawing No.	C
1	98
2	107

Basic dimensions for solenoid operators

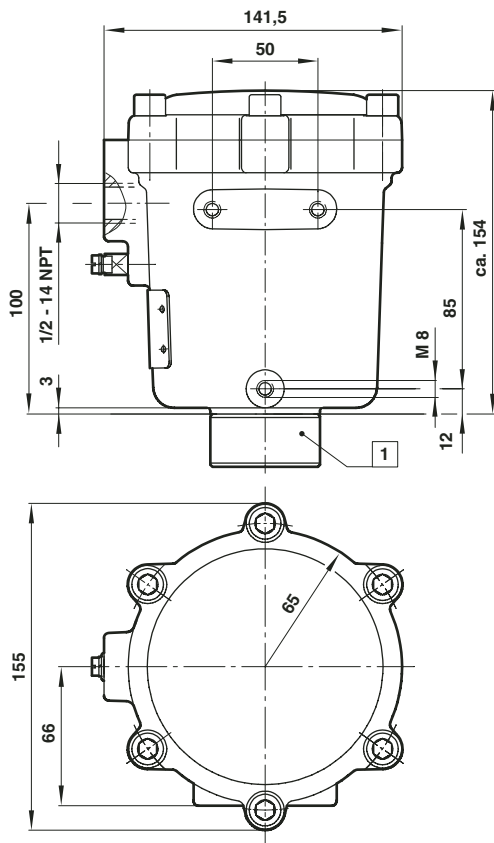
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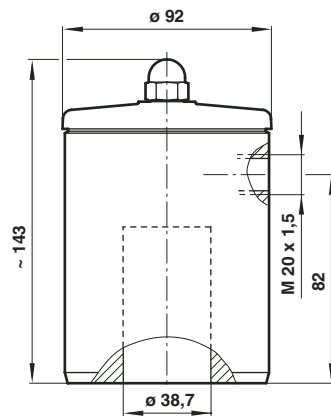
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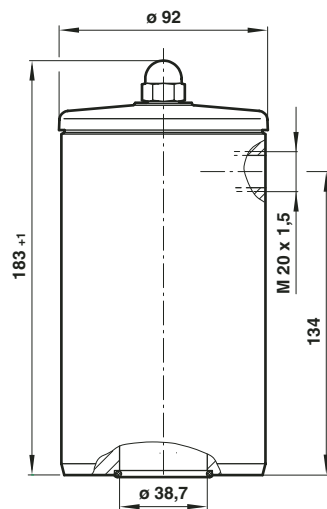
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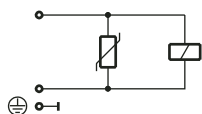
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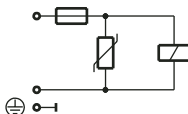
1 Core tube

Circuit diagram

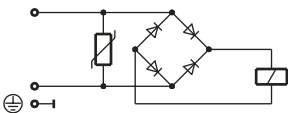
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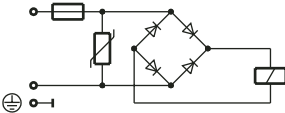
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Warning

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 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 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.