DATA SHEET

T 6116 EN

Type 6116 i/p Converter

Electropneumatic Converter for Direct Current Signals

Ex certified

Application

Conversion of a direct current input signal into a pneumatic output signal for measuring and control tasks. Particularly suitable as intermediate element between electric measuring devices and pneumatic controllers or between electric control devices and pneumatic control valves



Fig. 1: *Type 6116 i/p Converter*

The Type 6116 i/p Converter is used to convert a direct current input signal into a pneumatic output signal for measuring and control tasks. The converter consists of a Type 6109 or Type 6112 i/p Converter Module and a downstream volume booster. The input signal of the device is a load-dependent direct current from 4 to 20 mA or 0 to 20 mA. The output signal is a signal pressure from 0.2 to 1 bar or other ranges up to max. 8 bar.

Depending on the signal range, the Type 6116 is equipped with a Type 6109 or Type 6112 i/p Converter module (see Table 1).

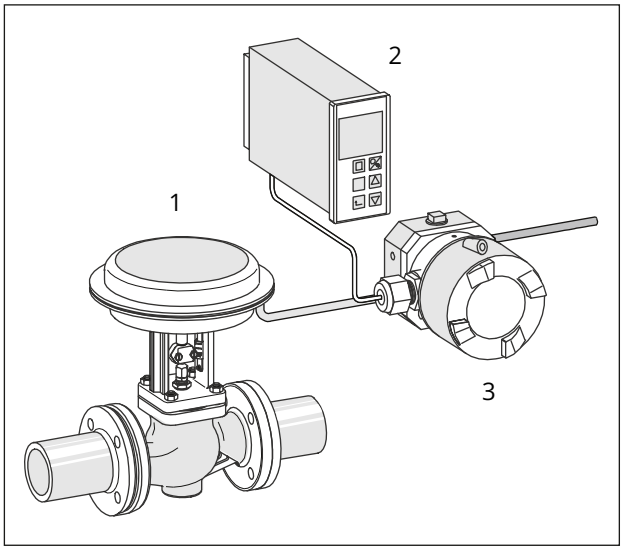


Fig. 2: *Application*

1 Type 3241-1
2 TROVIS 6493
3 Type 6116

Special features

- Continuous, linear characteristic
- High accuracy and excellent dynamic response
- Extremely low air consumption
- Operation without supply pressure regulator possible
- Switch-off electronics guarantee venting at zero point.

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · samson@samsongroup.com · www.samsongroup.com

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Versions

- For safe areas:
  - Type 6116-0

- For hazardous areas:
  - Type 6116-1, Ex i according to ATEX and EAC Ex
  - Type 6116-2, Ex d according to ATEX, IECEx and EAC Ex
  - Type 6116-3, explosion-proof acc. to CSA and FM standards
  - Type 6116-4, intrinsically safe according to CSA and FM standards
  - Type 6116-5, explosion-proof/IECEx/Korea
  - Type 6116-6, intrinsically safe/IECEx

Further versions

- Type 6116-x2xxxxxxxxx2xxx for temperatures down to -45 °C
- Type 6116-0
  - AS-interface connection with Type 6150 Slave
  - Voltage input (e.g. 0 to 10 V) with Type 6151 u/i Module
  - Electropneumatic converter without booster or switch-off electronics; converters can be combined with Type 3760, Type 3766-000 (model index .02 and higher) and Type 4765 Pneumatic Positioners.
- Type 6116-xx060111000xxxx for attachment to p/p positioners (½ NPT electrical connection)
- Type 6116-xx060112000xxxx for attachment to p/p positioners (M20x1.5 electrical connection)

Principle of operation

The electropneumatic converter consists of an i/p converter module, which operates according to the force-balance principle and a downstream volume booster.

When operated, the supplied direct current i flows through the plunger coil (2) located in the field of a permanent magnet (3). At the balance beam (1), the force of the plunger coil, which is proportional to the current, is balanced against the force of the dynamic backpressure p_K. It is created at the flapper (6) by the air jet leaving the nozzle.

The nozzle is supplied with air from the pneumatic output (36). With an input signal of 0 mA, an output pressure of approximately 100 mbar is already issued due to the offset spring.

The supply air (SUPPLY 8) flows to the bottom chamber of the volume booster (8). A certain amount of air determined by the diaphragm position flows past the plug sleeve (9) and leaves through the output (OUTPUT 36).

When the current increases, the flapper moves closer to the nozzle. The force of the resulting backpressure pushes both the diaphragm (10) and sleeve (9) downwards, allowing additional air to enter the bottom chamber. The passing air volume increases until the forces on the diaphragm obtain a state of equilibrium.

When the current decreases, this action is reversed. The backpressure created by the nozzle and flapper decreases and the diaphragm is pressed upwards. In this process, it releases the sleeve, if applicable and opens the vent (EXHAUST) until the forces on the diaphragm are balanced again.

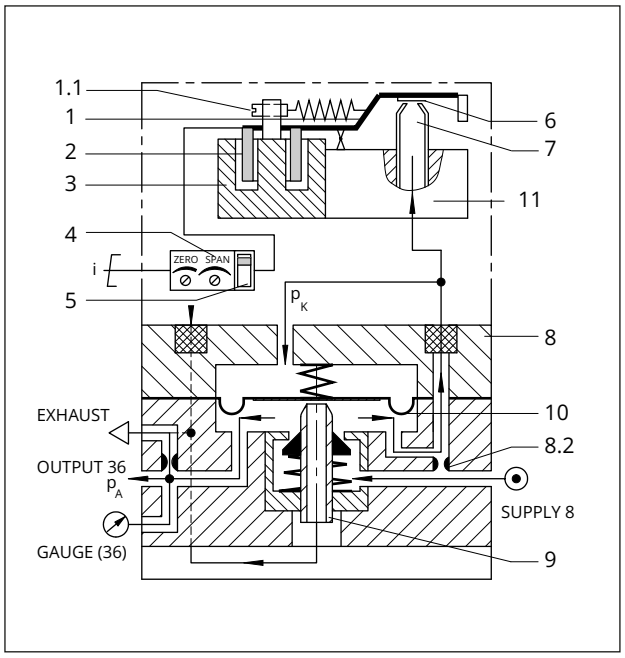


Fig. 3: *Functional diagram*

1 Balance beam
1.1 Zero point adjuster (Type 6112; only in version without electronics)
2 Plunger coil
3 Permanent magnet
4 Zero and span potentiometers (only in version with electronics)
5 Slide switch for switch-off electronics (only in version with electronics)
6 Flapper plate
7 Nozzle
8 Volume booster
8.2 Fixed restriction
9 Sleeve
10 Diaphragm
p_A Output pressure
p_K Backpressure (cascade pressure)
11 Type 6109/6112 i/p Module
⊙ Supply air

Switch-off electronics

Devices with an input range from 4 to 20 mA have a slide switch which activates the switch-off electronics.

This function allows the input signal to be set to 0 mA when the signal falls below the switching point of 4.08 mA. This causes the pneumatic output to be vented to approximately 100 mbar. This guarantees, for example the tight shut-off function of a valve. This function requires a characteristic which passes through the zero point, for example at an output signal of 0.2 to 1 bar.

⇨ See Fig. 4.

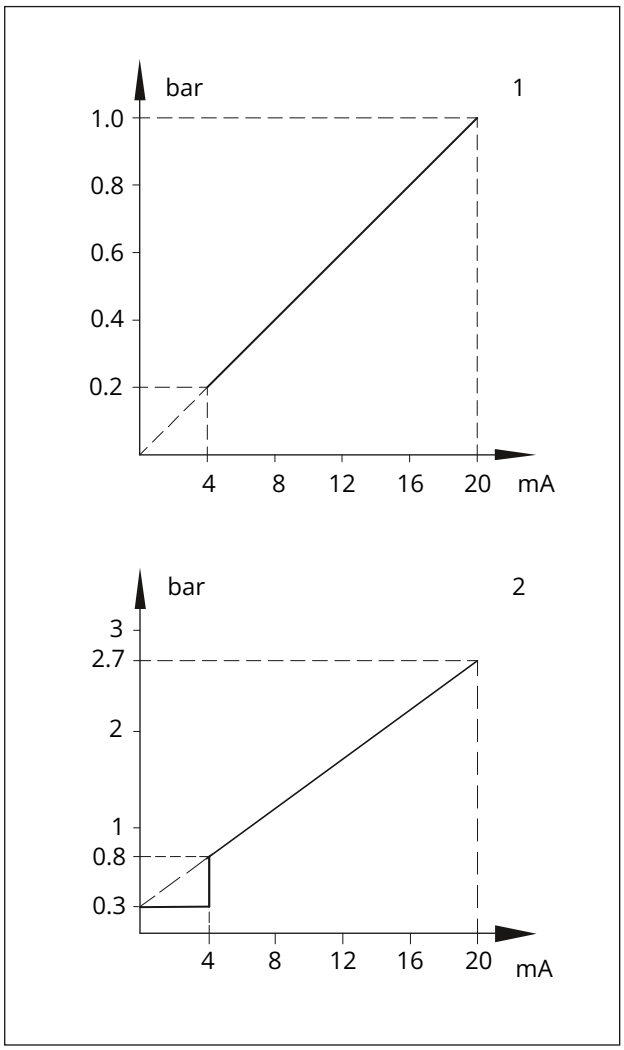


Fig. 4: *Output and remaining pressure*

1 0.2 to 1 bar output, remaining pressure approx. 0.1 bar
2 0.8 to 2.7 bar output, remaining pressure approx. 0.3 bar

Combined with pneumatic positioners

The Type 6116-xx06011x000xxxx i/p Converter without booster or switch-off electronics can be combined with a Type 3760, 3766-000 or 4765 Positioner to form a version in a flameproof enclosure (Ex d). With Type 3760 and Type 4765 Positioners, the i/p converter is attached to the control valve according to NAMUR and hooked up to the positioner (see Fig. 6).

The Type 3766-000 Positioner can be connected directly to the i/p converter. The required accessories can be ordered specifying the positioner model.

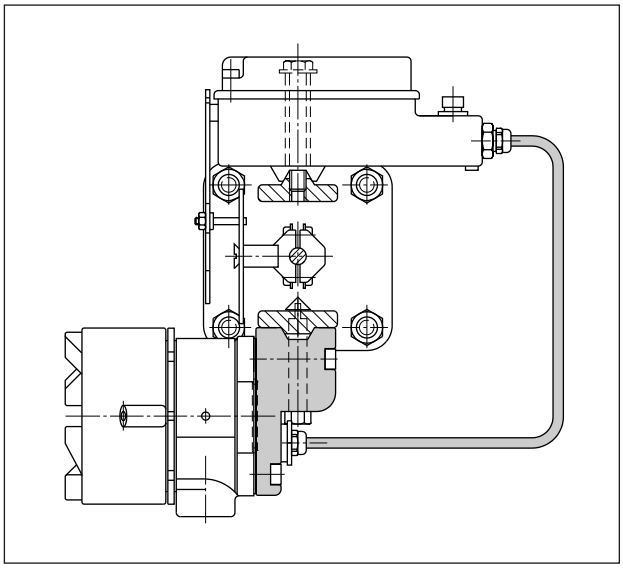


Fig. 5: *NAMUR attachment to valve with Type 4765 Positioner*

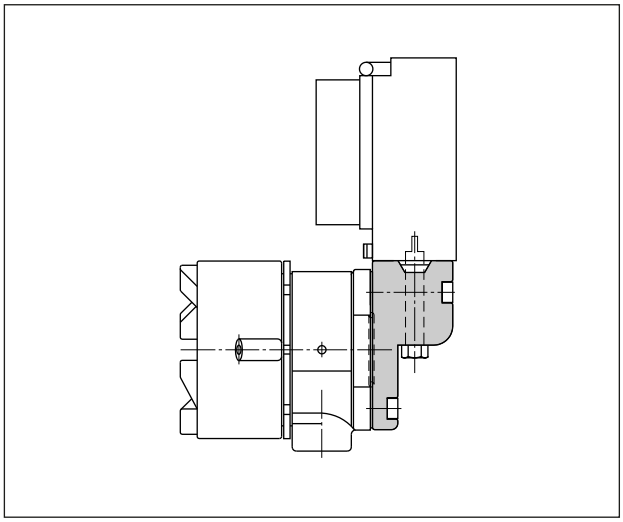


Fig. 6: *Direct attachment to Type 3766-000 Positioner*

Attachment

The converter can be mounted to a wall, pipe or directly to the control valve according to NAMUR.

⇨ Install the converter horizontally with the pressure gauge (or screw plug) facing upward.

If a different mounting position is used, the zero point must be corrected using the ZERO adjuster.

⇨ For devices with IP54 rating, make sure the vent plug is installed facing downward to the floor.

Electrical connection

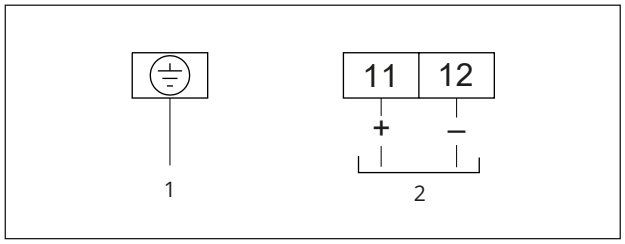


Fig. 7: *Electrical connection · Type 6116*

1 Grounding conductor (PE)
2 4 to 20 mA input

For connection to intrinsically safe circuits, the specifications stated in the certificate of conformity apply as well.

Pneumatic connection

The supply air must meet the following requirements:

- Min. +0.4 bar above the upper signal pressure range value
- Max. 10 bar
  Type 6116-2: max. 6 bar
- Dry, free of oil and dust

The pneumatic connections for supply air (SUPPLY 8) and output (OUTPUT 36) are designed as threaded ports with G ¼ or ¼-18 NPT thread.

Customary fittings for metal tubing or plastic hoses can be used.

Table 1: *Technical data*

Type		**6116-0, without explosion protection**
Types		**6116-1/-2/-3/-4/-5/-6/-7 with explosion protection**
Input [5]		4 to 20 mA, other signals on request Minimum current >3.6 mA, load impedance ≤6 V (corresponding to 300 Ω at 20 mA) Versions with explosion protection: Load impedance 7 V (corresponding to 350 Ω at 20 mA) Versions without switch-off electronics: R_i = 200 Ω ± 7.5 %
Output [5]		0.2 to 1 bar/3 to 15 psi (Type 6109 i/p Converter Module) 0.4 to 2 bar/6 to 30 psi (Type 6112 i/p Converter Module) Special ranges adjustable according to customer specifications:
		Output range = Lower range value [10] + Span Δp with Type 6112 i/p Converter Module) 0.1 to 0.4 bar + 0.75 to 1.0 bar, Module A 0.1 to 0.4 bar + 1.0 to 1.35 bar, Module B 0.1 to 0.4 bar + 1.35 to 1.81 bar, Module C 0.1 to 0.8 bar + 1.81 to 2.44 bar, Module D 0.1 to 0.8 bar + 2.44 to 3.28 bar, Module E 0.1 to 0.8 bar + 3.28 to 4.42 bar, Module F 0.1 to 1.2 bar + 4.42 to 5.94 bar, Module G 0.1 to 1.2 bar + 5.94 to 8.0 bar, Module H [9]
	Max. air output capacity [3]	2.0 m³/h with an output of 0.6 bar (0.2 to 1.0 bar) 2.5 m³/h with an output of 1.2 bar (0.4 to 2.0 bar) 8.5 m³/h with an output of 5.0 bar (0.1 to 8.0 bar)
Supply		At least 0.4 bar above the upper signal pressure range value, max. 10 bar without supply pressure regulator, max. 6 bar for Ex d version
	Air quality acc. to ISO 8573-1: 2001	Max. particle size and density: Class 4 · Oil content: Class 3 · Pressure dew point: Class 3 or at least 10 K below the lowest ambient temperature to be expected
	Air consumption[2]	0.08 mn³/h at 1.4 bar 0.1 mn³/h at 2.4 bar Max. 0.26 mn³/h at 10 bar
Characteristic		Characteristic: Output linear to input
	Hysteresis	≤0.3 % of upper range value
	Deviation from terminal-based conformity	≤1 % of upper range value (for upper range values up to 5 bar); more exact values on request ≤1.5 % of upper range value (for upper range values above 5 bar)
	Influence in % of upper range value	Supply air: 0.1 %/0.1 bar [2]
		Alternating load, supply air failure, interruption of the input current: <0.3 %
		Ambient temperature: lower range value <0.03 %/K, span <0.03 %/K
Dynamic response		
	Limiting frequency	5.3 Hz
	Phase shift	-130°
Variable position		Max. 3.5 % depending on how the device is attached: ±1 % in horizontal position (Type 6109) Max. 1 % depending on how the device is attached: ±0.3 % in horizontal position (Type 6112)
Ambient conditions, degree of protection, compliance and weight		
Storage temperature		-45 to +80 °C
Ambient temperature [11]		
	With Type 6109	-30 to +70 °C; -30 to +60 °C [1]
	With Type 6112	-40 to +70 °C; -40 to +60 °C [1] [7]
Degree of protection		IP54 [4], IP65 [8], Type 4
Conformity		
Explosion protection		
ATEX, IECEx, ...		▶ EB 6116
Materials		
Enclosure		Die-cast aluminum, chromated and plastic coated
Cable gland (standard) [12]		Black polyamide (6 to 12 mm clamping range, -20 to +80 °C)

Type	**6116-0, without explosion protection**
Types	**6116-1/-2/-3/-4/-5/-6/-7 with explosion protection**
Weight	
	0.85 kg
EMC	According to EN 50081-1 and EN 50081-2
RoHS compliance	According to EN 61000-6-2, EN 61000-6-3 and EN 61326-1
Conformity	CE · EAC

1) Details (including electric specifications and installation instructions) can be found in the EC type examination certificate (▶ EB 6116)
2) Measured with average output pressure
3) Measured with hose with 4 mm inside diameter
4) Observe recommended mounting position.
5) When combined with a positioner
6) Devices without explosion protection
7) Special version lower than -45 °C on request
8) Possible by using accessories
9) The max. possible output pressure is 8 bar.
10) Lower range value raised up to 3.0 bar (special version)
11) Metal cable glands and vent plugs are required for temperatures below -20 °C.
12) Devices with type of protection “Flameproof enclosure” are delivered without cable gland.

Ex approvals

Type	Certificate			Type of protection/comments
6116-1	**ATEX**	Number Date	PTB 02 ATEX 2199 2003-03-07	II 2G Ex ia IIC T6 Gb
	TR CMU 1055	Number Date	ZETC/38/2021 2021-07-26	II 2G Ex ia IIC T6 Gb
	TR CMU 1055	Number Date Valid until	ZETC/027/2024 2024-04-22 2027-08-24	MODUL D
	EAC Ex	Number Date Valid until	KZ.7500525.01.01.02380 2026-01-28 2031-01-27	1Ex ia IIC T6 Gb X
6116-2	**IECEx**	Number Date	IECEx BVS 14.0066 X 2014-07-01	Ex d IIC T* Gb
	ATEX	Number Date	BVS 14 ATEX E 104 X 2014-06-27	II 2G Ex db IIC T* Gb
	TR CMU 1055	Number Date	ZETC/38/2021 2021-07-26	II 2G Ex d IIC T* Gb
	TR CMU 1055	Number Date Valid until	ZETC/027/2024 2024-04-22 2027-08-24	MODUL D
	EAC Ex	Number Date Valid until	KZ.7500525.01.01.02380 2026-01-28 2031-01-27	1Ex db IIC T6 Gb X
6116-3	**CSA**	Number Date	1471157 2014-11-14	Class I, Groups B, C, D Class II, Groups E, F, G Class III Type 4 Enclosure
	FM	Number Date	FM21US0094X 2022-02-17	Class I, Grps B, C, D Class II, Grps E, F, G Class III T6 Ta = -40°C to +60°C; Type 4X
6116-4	**CSA**	Number Date	1607866 2024-06-17	Ex ia IIC T6; Class I Zone 0 Class I, Div. 1, Groups A, B, C, D Class II, Div. 1, Groups E, F, G Class III Class I, Div.2, Groups A, B, C, D Class II, Div. 2, Groups F, G Class III Type 4 Enclosure
	FM	Number Date	FM24US0232 2025-01-02	IS Class I, II, III, Div. 1,GP A, B, C, D, E, F, G, T* Type 4X IS Class I, Zn 0, AEx ia IIC, T* NI Class I, Div. 2, GP A, B, C, D, F, G T* T* = Temperature Class and Ambient Temperature Range per Dwg. Addendum to EB 6116 EN
6116-5	**IECEx**	Number Date	IECEx TSA 05.0015 2005-04-22	Ex d IIC T6/T4
	KCS	Number Date Valid until	11-KB4BO-0213 2011-10-24 2026-10-24	Ex d IIC T6/T4
6116-6	**IECEx**	Number Date	IECEx TSA 05.0008X 2005-04-04	Ex ia IIC T6 Ex nA IIC T6

Dimensions

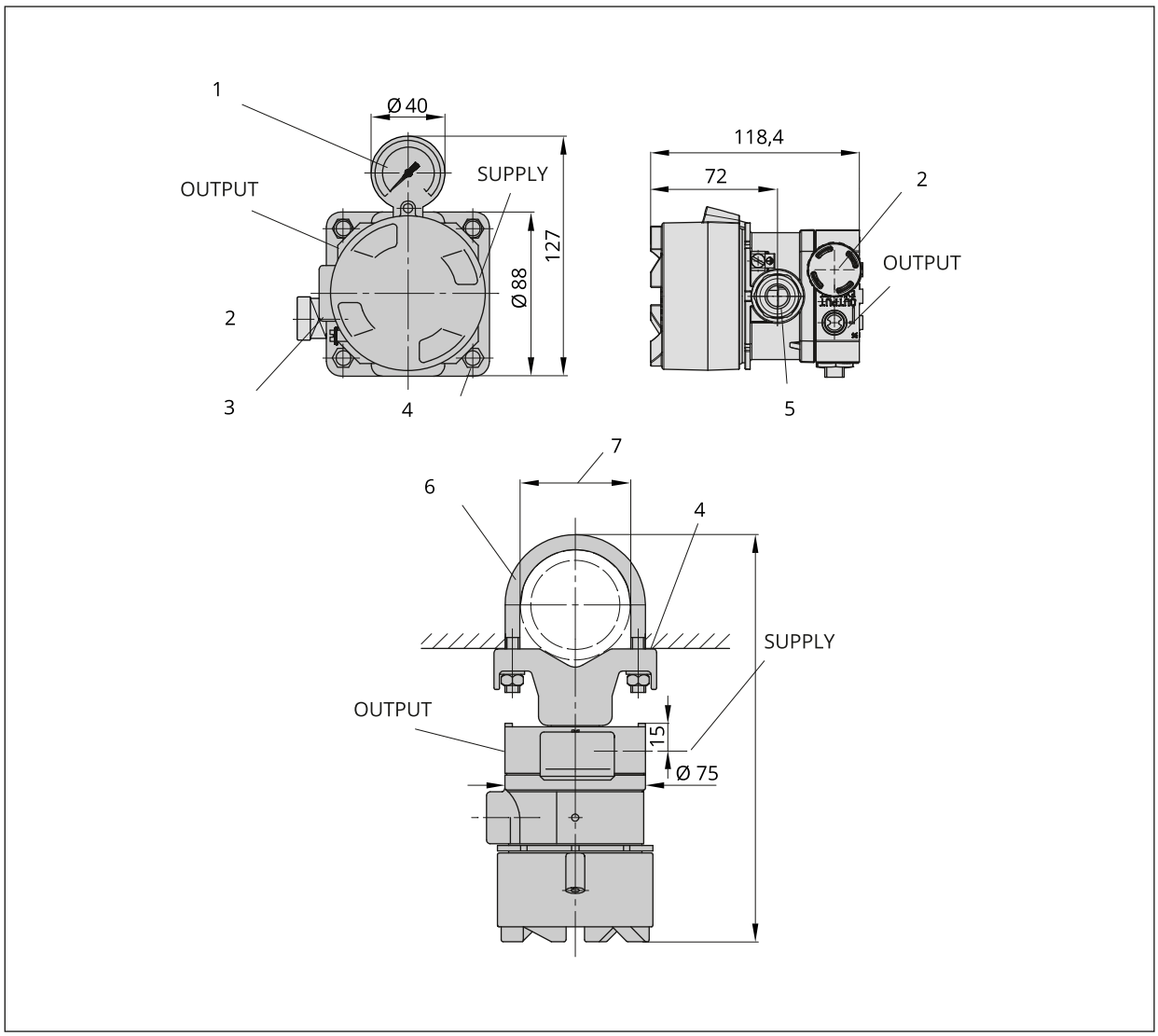


Fig. 8: *Dimensions in mm · Wall and pipe mounting*

1 Pressure gauge
2 Exhaust (vent plug) IP65
3 M20x1.5 or ½-14 NPT for electrical connection
4 Wall mounting
5 Cable gland
6 Clamp for attachment to 2" pipe
7 Ø 2" pipe

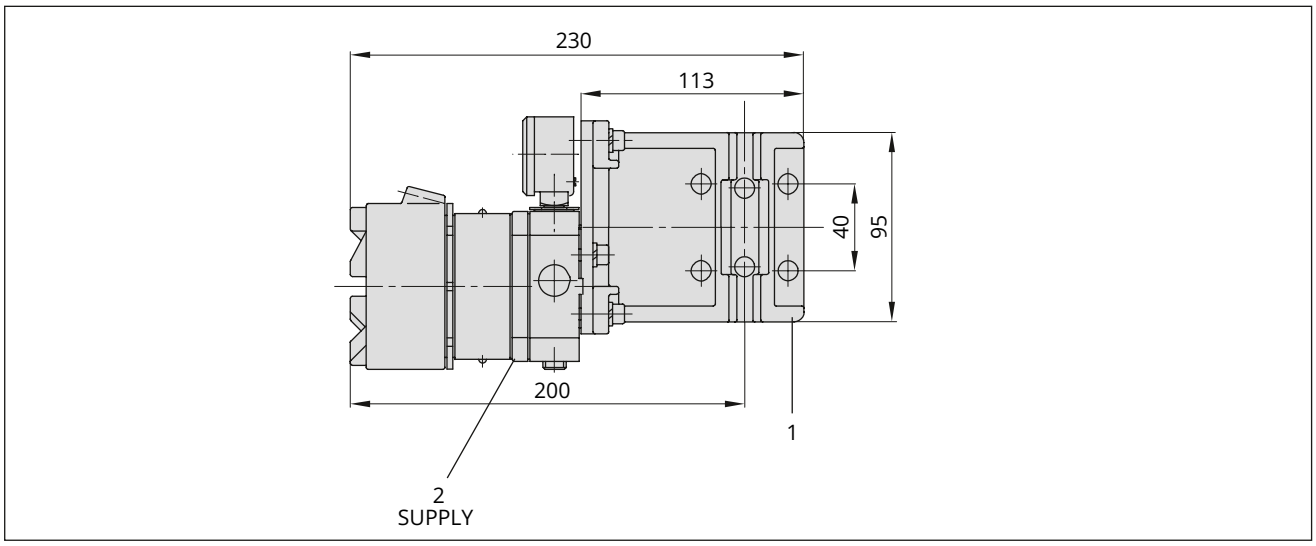


Fig. 9: *Dimensions in mm · Version with yoke*

1 Valve attachment

2 ¼-18 or G ¼

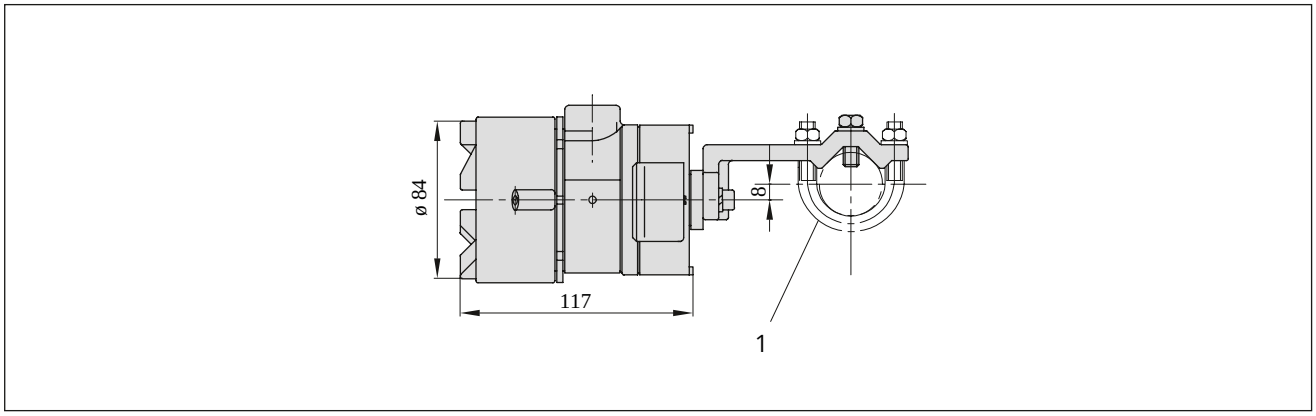


Fig. 10: *Dimensions in mm · Version with rod-type yoke*

1 Attachment to valves with rod-type yokes

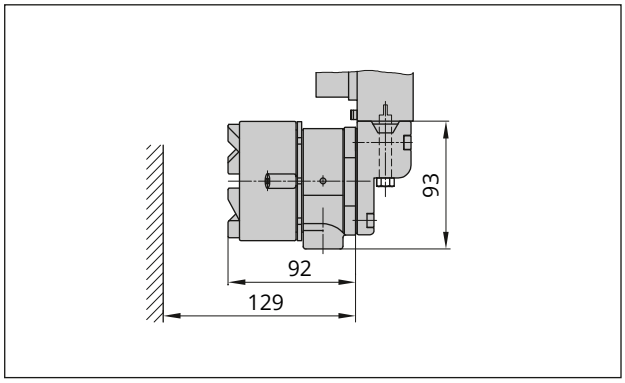


Fig. 11: *Dimensions in mm · Type 6116-xx06011x000xxxx without booster unit with Type 3766-000 Positioner*

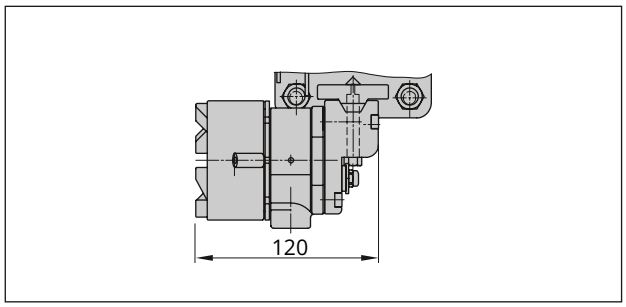


Fig. 12: *Dimensions in mm · Type 6116-xx06011x000xxxx without booster unit (attachment according to NAMUR with Type 4765/3760)*

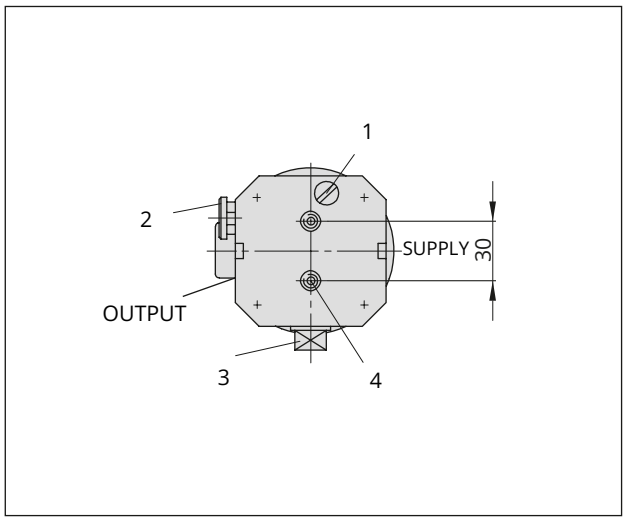


Fig. 13: *Dimensions in mm · Rear view of Type 6116 without mounting parts*

1 Restrictor
2 Exhaust (vent plug) IP54
3 Pressure gauge connection
4 M6, 10 deep

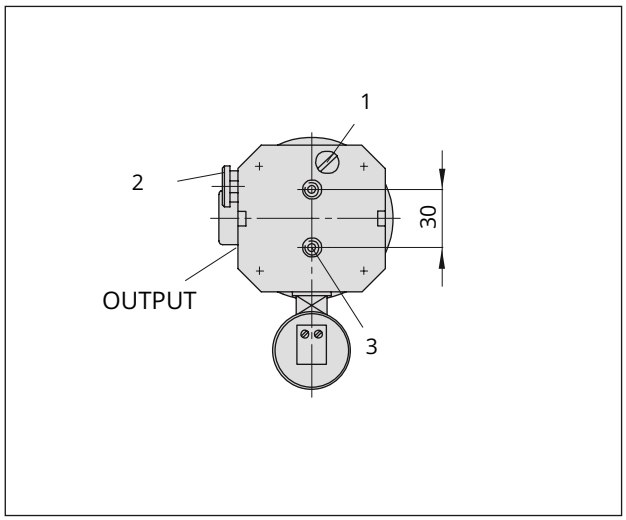


Fig. 14: *Dimensions in mm · Rear view of Type 6116 with booster unit*

1 Restrictor
2 Exhaust (vent plug) IP54
3 M6, 10 deep

Parts for retrofitting and accessories

Table 2: *Mounting accessories*

Spare parts/accessories	Order no.
Wall and pipe mounting	1400-6216
Mounting bracket (1.4301) for wall mounting	1400-7432
Mounting unit for Type 6116 in various versions	M6116
Mounting on Type 3766 [1)]	1400-6227
Mounting on Type 4765 [1)]	1400-6223
Mounting on Type 3760 [1)]	1400-6224
Mounting on cast yoke according to NAMUR [1)]	1400-6217
Mounting on rod-type yoke according to NAMUR [1)]	1400-6218
Male screw fitting G ¼ on hose with 4 mm inside diameter and 6 mm outside diameter, brass	8582-1452
Male screw fitting ¼ NPT on hose, 4 mm inside diameter and 6 mm outside diameter, brass	8582-1523
M20x1.5 cable gland, black polyamide (6 to 12 mm clamping range)	8808-1011
M20x1.5 cable gland, blue polyamide (6 to 12 mm clamping range)	8808-1012
M20x1.5 cable gland, nickel-plated brass (6 to 12 mm clamping range)	1890-4875
M20x1.5 cable gland, stainless steel 1.4305 (8 to 14.5 mm clamping range)	8808-0160
Cable gland ½ NPT, black polyamide (6 to 12 mm clamping range)	8808-0145
Cable gland ½ NPT, blue polyamide (6 to 12 mm clamping range)	8808-0146
Cable gland ½ NPT, nickel-plated brass (6 to 12 mm clamping range)	8808-0140
Vent plug G ¼, stainless steel 1.4305, IP66 (–45 to +80 °C)	1790-7253
Vent plug G ¼, stainless steel 1.4305, NEMA 4/Type 4 (–45 to +80 °C)	1790-9646
Filter	0550-0213
Restriction including filter	1390-0186

[1)] Only mounting part not mounted and without any required piping; M6116 includes mounting

Table 3: *Accessories for subsequent pressure gauge mounting*

Pressure gauge	Order no.
Pressure gauge: 0.2 to 1.2 bar pressure range	0080-0185
Pressure gauge: 0 to 6 bar pressure range	0080-0186
Pressure gauge: 0 to 10 bar pressure range	8520-0032
Pressure gauge: 0 to 0.6 MPa/0 to 6 kg/cm² pressure range	0800-0204
For all pressure gauges: screw fitting	0250-1090

Table 4: *Accessories for positioner attachment*

Positioner	Mounting instructions	Order no.
Type 3766-00 (model index .02 and higher)	Direct attachment to the positioner (for positioner with M20x1.5 electrical connection)	1400-6227
	For older positioner models with PG 13.5	1400-6222
Type 4765	NAMUR attachment to the yoke of a control valve	1400-6223
Type 3760	Attachment to the yoke of the Type 3510 Micro-flow Valve or to the NAMUR rib	1400-6224

Article code

Type 6116-		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Explosion protection		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Without		0	|	|	|	|	|	|	|	|	|	|	|	|	|	|
ATEX[1) 2)14)]	II 2G Ex ia IIC T6 Gb	1	|	|	|	|	|	|	|	|	1/2	|	|	|	|	|
ATEX[3)]	II 2 G Ex d IIC T6; II 2G Ex d IIC T6/T5/T4 Gb	2	|	|	|	|	|	|	|	|	|	|	|	|	|	|
CSA[5)12)]	Class I, Groups B, C, D	3	|	|	|	0	1...5	|	1/2	|	0...3	|	|	|	|	|
	Class II, Groups E, F, G	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class III; Type 4 Enclosure[15)18)]	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
FM[1)]	Class I, Groups B, C, D	|	|	|	|	|	|	|	1	|	0/3	|	|	|	|	|
	Class II, Groups E, F, G	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class III	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
CSA[1)14)]	Ex ia IIC T6; Class I, Zone 0	4	|	|	|	|	|	|	|	3	|	|	|	|	|
	Class I, Div. 1, Groups A, B, C, D	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class II, Div. 1, Groups E, F, G; Class III	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class I, Div.2, Groups A, B, C, D	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class II, Div. 2, Groups E, F, G; Class III	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Type 4 Enclosure	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
FM[1)14)]	IS, ClassI, II, III; Div. 1, Groups A–G	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Class I, Zone 0 AEx ia IIC	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	NI, Class I, Div. 2, Groups A, B, C, D	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
	Type 4X Enclosure	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
IECEx[4)6)]	Ex d IIC T6/T4	5	|	|	|	0	1/2	|	1	|	0/2	|	|	|	|	|
IECEx[1)14)]	Ex ia IIC T6; Ex nA IIC T6	6	2	|	|	|	|	|	|	|	2	|	|	|	|	|
JIS[4)15)]	Ex d IIC T6	7	|	|	|	0	1/2	|	|	|	|	|	|	|	|	|
		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
i/p converter module		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Type 6109[4)]		|	1	0	1	0	1	1	|	|	|	|	|	|	|	|
Type 6112		|	2	|	|	|	|	|	|	|	|	|	|	|	|	|
		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Input		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
4 to 20 mA		|	|	0	1	|	|	|	|	|	|	|	|	|	|	|
4 to 12 mA[1)11)]		|	2	0	3	|	|	|	|	|	|	|	|	|	|	|
12 to 20 mA, without switch-off electronics[1)7)11)]		|	2	0	4	|	|	|	|	|	|	|	|	|	|	|
0 to 20 mA, without switch-off electronics[7)]		|	2	0	5	|	|	|	|	|	|	|	|	|	|	|
4 to 20 mA, without switch-off electronics[7)] for positioner attachment		|	|	0	6	|	|	|	|	|	|	|	|	|	|	|
		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Output		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
0.2 to 1.0 bar		|	|	|	|	0	1	|	|	|	|	|	|	|	|	|
3 to 15 psi		|	|	|	|	0	2	|	|	|	|	|	|	|	|	|
0.4 to 2.0 bar		|	2	|	|	0	4	|	|	|	|	|	|	|	|	|
6 to 30 psi		|	2	|	|	0	5	|	|	|	|	|	|	|	|	|
Special ranges[8)]		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Lower range value/span Δp		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
0.1 to 0.4 bar/0.75 to 1.00 bar (6112, Module A)		|	2	|	|	1	1	|	1	|	|	|	|	|	|	|	|
0.1 to 0.4 bar/1.00 to 1.35 bar (6112, Module B)		|	2	|	|	1	2	|	2	|	|	|	|	|	|	|	|
0.1 to 0.4 bar/1.35 to 1.81 bar (6112, Module C)		|	2	|	|	1	3	|	3	|	|	|	|	|	|	|	|
0.1 to 0.8 bar/1.81 to 2.44 bar (6112, Module D)		|	2	|	|	1	4	|	4	|	|	|	|	|	|	|	|
0.1 to 0.8 bar/2.44 to 3.28 bar (6112, Module E)		|	2	|	|	1	5	|	5	|	|	|	|	|	|	|	|
0.1 to 0.8 bar/3.28 to 4.42 bar (6112, Module F)		|	2	|	|	1	6	|	6	|	|	|	|	|	|	|	|
0.1 to 1.2 bar/4.42 to 5.94 bar (6112, Module G)		|	2	|	|	1	7	|	7	|	|	|	|	|	|	|	|
0.1 to 1.2 bar/5.94 to 8.00 bar (6112, Module H)		|	2	|	|	1	8	|	8	|	|	|	|	|	|	|	|
		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|

Direction of action															
Increasing/increasing							1								
Increasing/decreasing[1]							2								
Electrical connection															
½ - 14 NPT								1							
M20x1.5								2							
Pneumatic connection															
Positioner attachment (without booster)[9]			0	6	0	1	1		0	0	0				
¼ - 18-NPT										1					
ISO-228/1 - G ¼										2					
Degree of protection															
Without (vent plug for positioner attachment)			0	6	0	1	1		0	0	0				
IP54										1					
IP65										2					
Type 4[10]										3					
Output pressure gauge															
Without											0				
With[1]											1				
Temperature															
T_{min} ≥-25 °C (standard version of Type 6109)		1										0			
T_{min} ≥-45 °C (Type 6112 with metal cable gland, subjected to a routine test)		2										1			
T_{min} ≥-40 °C (standard version of Type 6112)		2										2			
Special version															
Without													0	0	0
IECEx (Ex) approval:															
Ex d IIC T6/T5/T4 Gb	2												2	5	1
EAC Ex approval:															
1Ex ia IIC T6 Gb X	1												2	5	2
1Ex db IIC T6 Gb X	2												2	5	2
KCS Korea (Ex) approval: On request	5												2	6	2
Zero raised to a range between 0.4 and 1.5 bar/6 and 22 psi[16]													3	0	0
Zero raised to a range between 1.5 and 3.0 bar/23 and 44 psi[17]													3	0	1

1) Not for positioner attachment
2) With degree of protection IP54/IP65 only
3) Supply pressure max. 6 bar; output max. 5.6 bar (not possible with 6112, Module H)
4) Only with output 0.2 to 1 bar/3 to 15 psi, supply pressure max. 6 bar
5) With ½ NPT electrical connection, degree of protection Type 4 or positioner attachment
6) With ½ NPT electrical connection, degree of protection IP65 or positioner attachment
7) Without switch-off electronics and without potentiometer for zero point and span correction
8) Specify setting range, e.g. “set to 0.1 to 4 bar”; output pressure max. 8 bar. Lower range value raised to max. 3.0 bar (special version)
9) Only with Ex d or explosion-proof according to CSA and FM standards
10) Only explosion-proof or intrinsically safe according to CSA and FM standards
11) 4 to 12 mA and 12 to 20 mA input only up to 4.0 bar span
12) Only with output 0.2 to 1 bar/3 to 15 psi and 0.4 to 2 bar/6 to 30 psi, supply pressure max. 6 bar
13) Type 6116-3: version T_{min} = -45 °C only FM certification Class I, Div. 1, Groups B, C, D
14) Max. output pressure 2.0 bar not possible with Modules E, F, G, H
15) No longer available

16) Switch-off electronics only effective under certain conditions; Types 6116-0, 6116-1 (ATEX) (Modules A, B, C) and Type 6116-4 (Modules A, B, C)

17) Switch-off electronics only effective under certain conditions; Types 6116-0 and 6116-2 only (ATEX)

18) Not possible with 6112, Modules E, F, G and H

Associated Mounting and Operating Instructions

– Type 6116 ▶ EB 6116

Associated Information Sheet

– Information Sheet System 6000 ▶ T 6000

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