

Technical specifications

General information		Dynamic response	
Measuring ranges	4, internally and externally switchable; autoranging is also possible	Warm-up period	At room temperature < 30 min (the technical specification will be met after 2 hours)
Smallest possible span (relating to sample gas pressure 1 000 hPa absolute, 0.5 l/min sample gas flow and 25 °C ambient temperature), smallest possible span with heated version: 0.5% (< 65 °C); 0.5 ... 1% (65 ... 90 °C); 1 ... 2% (90 ... 130 °C)	0.5 vol.%, 2 vol.% or 5 vol.% O ₂	Delayed display (t ₉₀ -time)	< 1.5 s
Largest possible measuring span	100 vol.% O ₂ (for a pressure above 2 000 hPa: 25 vol.% O ₂)	Damping (electrical time constant)	0 ... 100 s, configurable
Measuring ranges with suppressed zero point	Any zero point can be implemented within 0 ... 100 vol.%, provided that a suitable reference gas is used (see Table 1 in "Function")	Dead time (purging time of the gas path in the unit at 1 l/min)	Approx. 0.5 s
Operating position	Front wall, vertical	Time for device-internal signal processing	< 1 s
Conformity	CE mark in accordance with EN 50081-1, EN 50082-2	Pressure correction range	
Design, enclosure		Pressure sensor	
Degree of protection	IP65 in accordance with EN 60529, restricted breathing enclosure to EN 50021	• Internal	500 ... 2 000 hPa absolute
Weight	Approx. 28 kg	• External	500 ... 3 000 hPa absolute
Electrical characteristics		Measuring response	
Auxiliary power	100 ... 120 V AC (nominal range of use 90 ... 132 V), 48 ... 63 Hz or 200 ... 240 V AC (nominal range of use 180 ... 264 V), 48 ... 63 Hz	Output signal fluctuation	Based on sample gas pressure 1 013 hPa absolute, 0.5 l/min sample gas flow and 25 °C ambient temperature
Power consumption	Approx. 35 VA, approx. 330 VA with heated version	Zero point drift	< ± 0.75% of the smallest possible measuring range according to rating plate, with electronic damping constant of 1 s (corresponds to ± 0.25% at 2 σ)
EMC (electromagnetic compatibility)	In accordance with standard requirements of NAMUR NE21 (08/98), EN 61326	Measured-value drift	< ± 0.5%/month of the smallest possible span according to rating plate
Electrical safety	In accordance with EN 61010-1	Repeatability	< 1% of the current measuring range
• Heated units	Overvoltage category II	Detection limit	1% of the current measuring range
• Unheated units	Overvoltage category III	Linearity error	< 0.1% of the current measuring range
Fuse values (unheated unit)		Influencing variables	
• 100 ... 120 V	F3: 1 T/250; F4: 1 T/250	Ambient temperature	Based on sample gas pressure 1 013 hPa absolute, 0.5 l/min sample gas flow and 25 °C ambient temperature
• 200 ... 240 V	F3: 0.63 T/250; F4: 0.63 T/250	Sample gas pressure (with air (100 hPa) as reference gas, correction of the atmospheric pressure fluctuations is only possible if the sample gas can vent to ambient air)	< 0.5%/10 K relating to the smallest possible measuring range according to rating plate, with measuring span 0.5%: 1%/10 K
Fuse values (heated unit)		Accompanying gases	Deviation from zero point corresponding to paramagnetic or diamagnetic deviation of carrier gas
• 100 ... 120 V	F1: 1 T/250; F2: 4 T/250	Sample gas flow at zero point	< 1% of the current measuring range according to rating plate with a change in flow of 0.1 l/min within the permissible flow range; heated version up to double error
• 200 ... 240 V	F3: 4 T/250; F4: 4 T/250 F1: 0.63 T/250; F2: 2.5 T/250 F3: 2.5 T/250; F4: 2.5 T/250	Auxiliary power	< 0.1% of the current measuring range with rated voltage ± 10%
Gas inlet conditions			
Permissible sample gas pressure			
• With pipes	500 ... 3 000 hPa absolute		
• With pipes, Ex version			
- Leakage compensation	500 ... 1 160 hPa absolute		
- Continuous purging	500 ... 3 000 hPa absolute		
Reference gas pressure (high-pressure version)	2 000 ... 4 000 hPa above sample gas pressure, but max. 5 000 hPa		
Reference gas pressure (low-pressure version)	Min. 100 hPa above sample gas pressure		
Purging gas pressure			
• Permanent	< 165 hPa above ambient pressure		
• For short periods	Max. 250 hPa above ambient pressure		
Sample gas flow	18 ... 60 l/h (0.3 ... 1 l/min)		
Sample gas temperature	• Min. 0 to max. 50 °C, but above the dew point (unheated) • 15 °C above temperature analyzer unit (heated)		
Sample gas humidity	< 90% relative humidity		

Extractive continuous process gas analysis

Series 6

OXYMAT 6

Field device

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Electrical inputs and outputs

Analog output	0/2/4 ... 20 mA, isolated; max. load 750 Ω
Relay outputs	6, with changeover contacts, freely configurable, e.g. for measuring range identification; load: 24 V AC/DC/1 A, isolated
Analog inputs	2, dimensioned for 0/2/4 ... 20 mA for external pressure sensor and residual gas influence correction (correction of cross-interference)
Digital inputs	6, designed for 24 V, isolated, freely configurable, e.g. for measuring range switchover
Serial interface	RS 485
Options	AUTOCAL function each with 8 additional digital inputs and relay outputs, also with PROFIBUS PA or PROFIBUS DP

Climatic conditions

Permissible ambient temperature	-30 ... +70 °C during storage and transportation, 5 ... 45 °C during operation
Permissible humidity	< 90% RH (relative humidity) as annual average (maximum accuracy achieved after 2 hours), during storage and transportation (dew point must not be undershot)

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Selection and ordering data	Article No.	
OXYMAT 6 gas analyzer For field installation	7MB2011- 0 -	Cannot be combined
Click on the Article No. for the online configuration in the PIA Life Cycle Portal. <u>Gas connections for sample gas and reference gas</u> Ferrule screw connection made of stainless steel (mat. no. 1.4571) <ul style="list-style-type: none"> • Pipe with 6 mm outer diameter • Pipe with 1/4" outer diameter Ferrule screw connection made of titanium <ul style="list-style-type: none"> • Pipe with 6 mm outer diameter • Pipe with 1/4" outer diameter Piping and gas connections made of Hastelloy C22: 7MB2011-0/1.... + order code D01 or D02	0 1 2 3	0 → D02 1 → D01 2 → D01, D02, Y02 3 → D01, D02, Y02
<u>Smallest possible measuring span O₂</u> 0.5 % reference gas pressure 3 000 hPa 0.5 % reference gas pressure 100 hPa (external pump) 2 % reference gas pressure 3 000 hPa 2 % reference gas pressure 100 hPa (external pump) 5 % reference gas pressure 3 000 hPa 5 % reference gas pressure 100 hPa (external pump)	A B C D E F	B B B → Y02 D D D → Y02 F F F → Y02
<u>Sample chamber</u> Non-flow-type compensation branch <ul style="list-style-type: none"> • Made of stainless steel, mat. no. 1.4571 • Made of tantalum Flow-type compensation branch <ul style="list-style-type: none"> • Made of stainless steel, mat. no. 1.4571 • Made of tantalum 	A B C D	C D
<u>Heating of internal gas paths and analyzer unit</u> None With (65 ... 130 °C)	0 1	1
<u>Power supply</u> Standard unit and acc. to ATEX II 3G version (Zone 2) <ul style="list-style-type: none"> • 100 ... 120 V AC, 48 ... 63 Hz • 200 ... 240 V AC, 48 ... 63 Hz ATEX II 2G versions (Zone 1), incl. certificate <ul style="list-style-type: none"> • 100 ... 120 V AC, 48 ... 63 Hz, according to ATEX II 2G¹⁾ (operating mode: leakage compensation) • 200 ... 240 V AC, 48 ... 63 Hz, according to ATEX II 2G¹⁾ (operating mode: leakage compensation) • 100 ... 120 V AC, 48 ... 63 Hz, according to ATEX II 2G¹⁾ (operating mode: continuous purging) • 200 ... 240 V AC, 48 ... 63 Hz, according to ATEX II 2G¹⁾ (operating mode: continuous purging) 	0 1 2 3 6 7	2 2 2 → E11, E12 3 3 3 → E11, E12 6 6 6 → E11, E12 7 7 7 → E11, E12
<u>Reference gas monitoring</u> Without With	A B	B A
<u>Add-on electronics</u> Without AUTOCAL function <ul style="list-style-type: none"> • With 8 additional digital inputs and 8 additional relay outputs • With 8 additional digital inputs/outputs and PROFIBUS PA interface • With 8 additional digital inputs/outputs and PROFIBUS DP interface • With 8 additional digital inputs/outputs and PROFIBUS PA Ex-i 	A B E F G	E → E12 F → E12
<u>Language</u> German English French Spanish Italian	0 1 2 3 4	

¹⁾ See also next page, "Additional units for Ex versions".

Extractive continuous process gas analysis

Series 6

OXYMAT 6

Field device

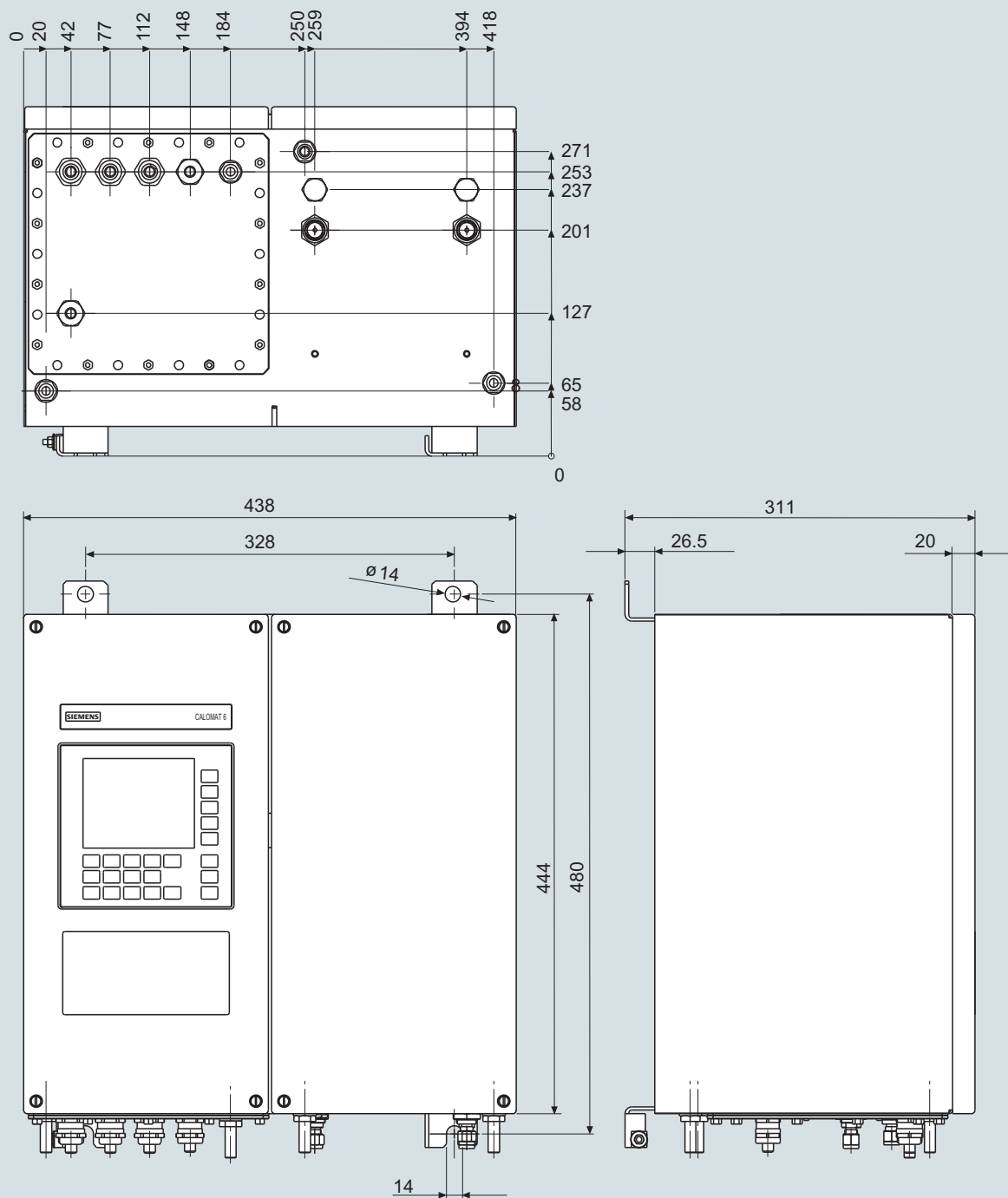
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Selection and ordering data

<i>Additional versions</i>	Order code	Cannot be combined
Add "-Z" to Article No. and specify Order codes.		
Set of Torx screwdrivers	A32	
Kalrez gaskets in sample gas path	B01	
TAG labels (specific lettering based on customer information)	B03	
SIL conformity declaration (SIL 2) Functional Safety according to IEC 61508 and IEC 61511	C20	
Gas connections and piping made of Hastelloy C22		
• Outer diameter 6 mm	D01	→ E20
• Outer diameter ¼"	D02	→ E20
<u>Ex versions</u>		
Combination options see table "Ex configurations – principle selection criteria Series 6", chapter "General information"		
ATEX II 3G certificate; restricted breathing enclosure, non-flammable gases	E11	
ATEX II 3G certificate; flammable gases	E12	
FM/CSA certificate – Class I Div 2	E20	
ATEX II 3D certificate; potentially explosive dust atmospheres		
• In non-hazardous gas zone	E40	
• In Ex zone acc. to ATEX II 3G, non-flammable gases	E41	
• In Ex zone acc. to ATEX II 3G, flammable gases ¹⁾	E42	
BARTEC Ex p purging unit "Leakage compensation"	E71	
BARTEC Ex p purging unit "Continuous purging"	E72	
Clean for O ₂ service (specially cleaned gas path)	Y02	
Measuring range indication in plain text, if different from the standard setting	Y11	
<u>Additional units for Ex versions</u>	Article No.	
<u>Category ATEX II 2G (zone 1)</u>		
BARTEC Ex p purging unit, 230 V, "leakage compensation"	7MB8000-2BA	
BARTEC Ex p purging unit, 115 V, "leakage compensation"	7MB8000-2BB	
BARTEC Ex p purging unit, 230 V, "continuous purging"	7MB8000-2CA	
BARTEC Ex p purging unit, 115 V, "continuous purging"	7MB8000-2CB	
Ex i isolating transformer	7MB8000-3AB	
Ex isolating relay, 230 V	7MB8000-4AA	
Ex isolating relay, 110 V	7MB8000-4AB	
Differential pressure switch for corrosive and non-corrosive gases	7MB8000-5AA	
Stainless steel flame arrester	7MB8000-6BA	
Hastelloy flame arrester	7MB8000-6BB	
<u>Category ATEX II 3G (Zone 2)</u>		
BARTEC Ex p purging unit, 230 V, "continuous purging"	7MB8000-2CA	
BARTEC Ex p purging unit, 115 V, "continuous purging"	7MB8000-2CB	
<u>FM/CSA (Class I Div. 2)</u>		
Ex purging unit MiniPurge FM	7MB8000-1AA	
<u>Accessories</u>		
RS 485/Ethernet converter	A5E00852383	
RS 485/RS 232 converter	C79451-Z1589-U1	
RS 485/USB converter	A5E00852382	
AUTOCAL function with 8 digital inputs/outputs	A5E00064223	
AUTOCAL function with 8 digital inputs/outputs and PROFIBUS PA	A5E00057315	
AUTOCAL function with 8 digital inputs/outputs and PROFIBUS DP	A5E00057318	
AUTOCAL function with 8 digital inputs/outputs and PROFIBUS PA Ex i (firmware 4.1.10 required)	A5E00057317	
Set of Torx screwdrivers	A5E34821625	

¹⁾ Only in connection with an approved purging unit

Dimensional drawings



OXYMAT 6, field unit, dimensions in mm

Extractive continuous process gas analysis

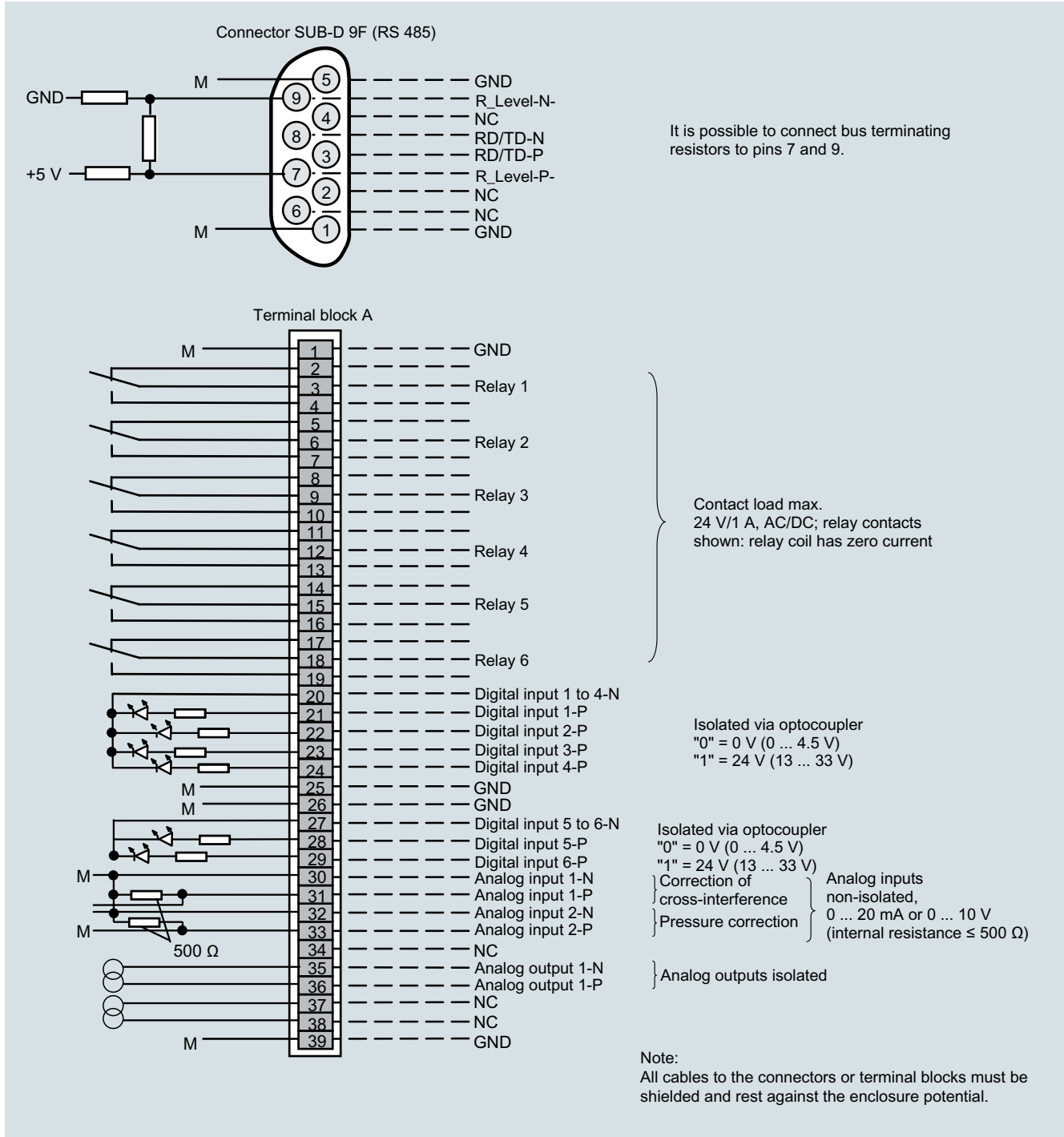
Series 6
OXYMAT 6

Field device

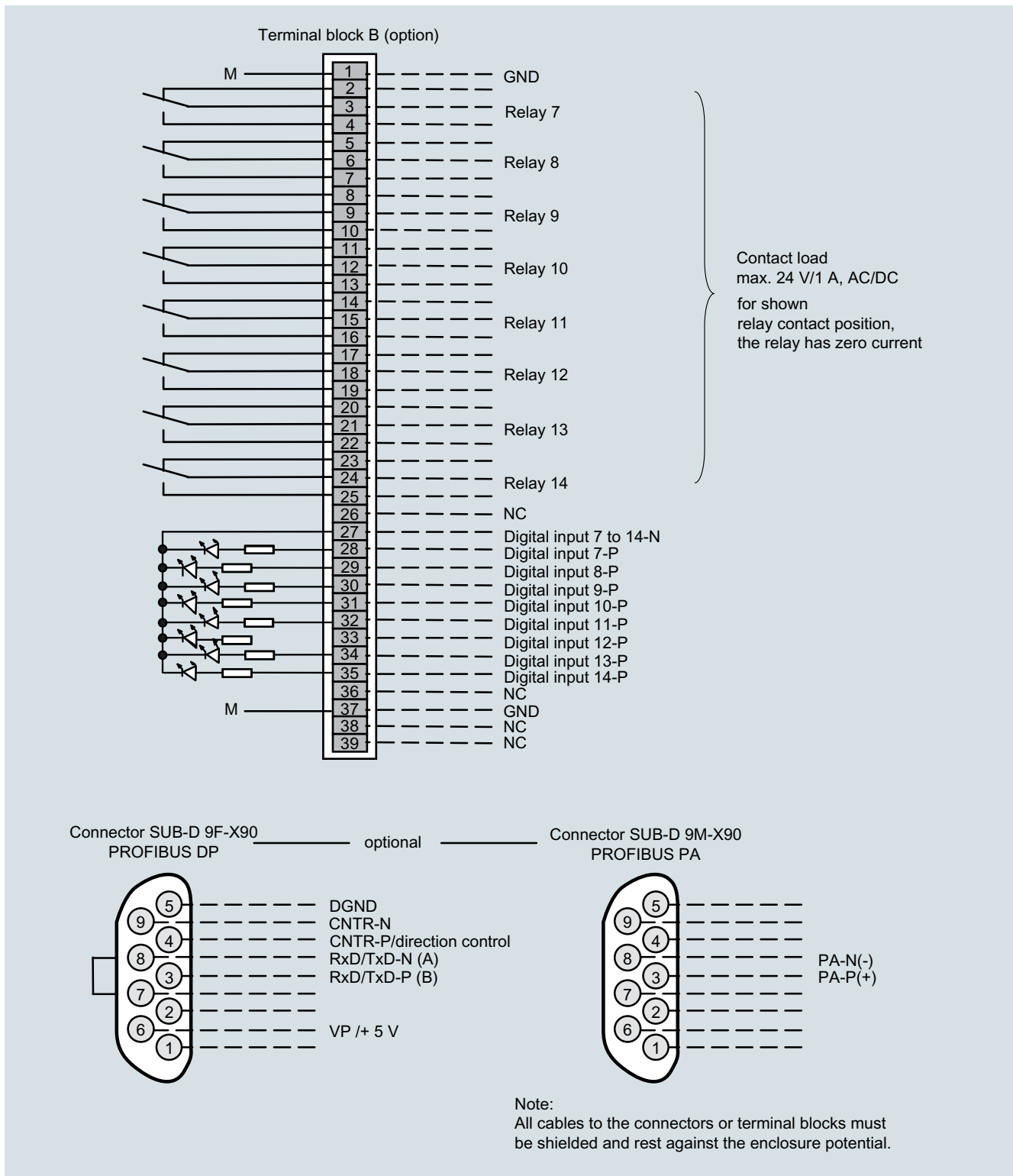
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Circuit diagrams

Pin assignment (electrical and gas connections)



OXYMAT 6, field unit, connector and terminal assignment

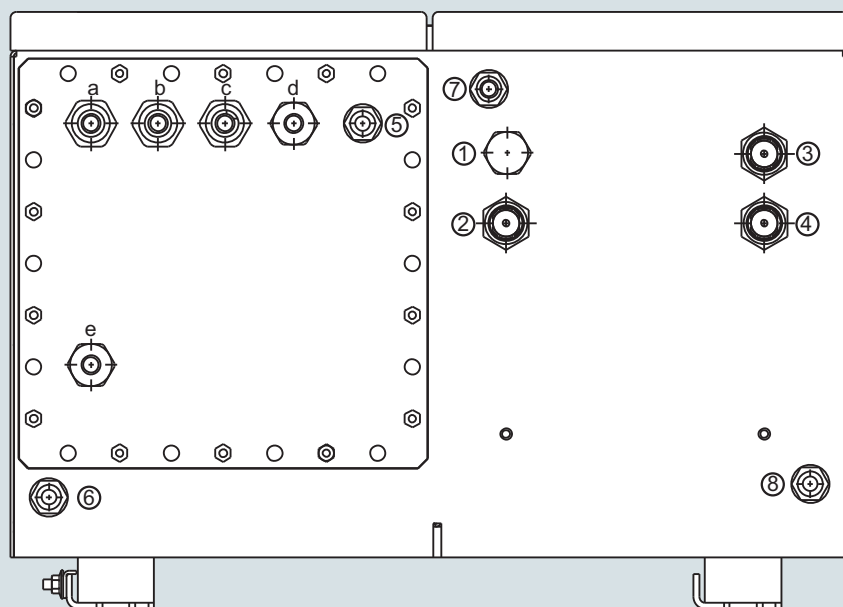


OXYMAT 6, field unit, connector and terminal assignment of the AUTOCAL board and PROFIBUS connectors

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Series 6

OXYMAT 6

Field device**Gas connections**

- | | | |
|-----|---|--|
| ① | not used | } Clamping
gland for pipe
Ø 6 mm or 1/4" |
| ② | Sample gas inlet | |
| ③ | Reference gas inlet | |
| ④ | Sample gas outlet | |
| ⑤-⑧ | Purging gas inlets/outlets stubs Ø 10 mm or 3/8 " | |

Electrical connections

- | | |
|-------|--|
| a - c | Signal cable (Ø 10 ... 14 mm)
(analog + digital): cable gland M20x1.5 |
| d | Interface connection: (Ø 7 ... 12 mm)
cable gland M20x1.5 |
| e | Power supply: (Ø 7 ... 12 mm)
cable gland M20x1.5 |

OXYMAT 6, field unit, gas and electrical connections