

# Extractive continuous process gas analysis

Series 6

CALOMAT 62

## Field device

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### Technical specifications

<b>General information</b>	Based on DIN EN 61207/IEC 1207. All data based on digital gas mixture H <sub>2</sub> in N <sub>2</sub>	<b>Time response</b>	The dynamic and measuring response refers to the measurement of H <sub>2</sub> in N <sub>2</sub> (based on the sample gas pressure 1 000 hPa absolute, sample gas flow 0.5 l/min, and ambient temperature 25 °C)
Measuring ranges	4, internally and externally switchable; automatic measuring range switchover also possible	Warm-up period	< 30 min at room temperature (the technical specification will be met after 2 hours)
Span	Application-dependent (see ordering data)	Delayed display (T <sub>90</sub> )	Approx. 35 s (including dead time)
Measuring ranges with suppressed zero point	Application-dependent (see ordering data)	Electrical damping	0 ... 100 s, configurable
Operating position	Front wall, vertical	Dead time (the diffusion to the probes is the determining variable)	Approx. 34 s
Conformity	CE marking in accordance with EN 50081-1/EN 50081-2 and RoHS	<b>Measuring response</b>	The dynamic and measuring response refers to the measurement of H <sub>2</sub> in N <sub>2</sub> (based on the sample gas pressure 1 000 hPa absolute, sample gas flow 0.5 l/min, and ambient temperature 25 °C)
<b>Design, enclosure</b>		Output signal fluctuation (3σ value)	< ± 1% of the smallest possible span according to rating plate with electronic damping constant of 1 s
Degree of protection	IP65 according to EN 60529	Zero point drift	< ± 1% of the current span/week
Weight	Approx. 25 kg	Measured-value drift	< ± 1% of the smallest possible span (according to rating plate)/week
<b>Electrical characteristics</b>		Repeatability	< ± 1% of the current span
EMC interference immunity (electromagnetic compatibility)	In accordance with standard requirements of NAMUR NE21 (08/98) and EN 61326	Detection limit	1% of the smallest possible span according to rating plate
Electrical safety	In accordance with EN 61010-1; overvoltage category II	Linearity error	< ± 1% of the current span
Auxiliary power (see nameplate)	100 V-10% ... 120 V +10% AC, 48 ... 63 Hz or 200 V-10% ... 240 V +10% AC, 48 ... 63 Hz	<b>Influencing variables</b>	Based on sample gas pressure 1 000 hPa absolute, 0.5 l/min sample gas flow and 25 °C ambient temperature
Power consumption	<ul style="list-style-type: none"> <li>• Approx. 25 VA (gas connection block unheated)</li> <li>• Approx. 330 VA (gas connection block heated)</li> </ul>	Ambient temperature	< 2%/10 K referred to smallest possible span according to rating plate
Fuse values (gas connection unheated)	100 ... 120 V F3 1T/250 F4 1T/250  200 ... 240 V F3 0.63T/250 F4 0.63T/250	Accompanying gases	Deviation from zero point (for influence of interfering gas, see section "Cross-interference")
Fuse values (gas connection heated)	100 ... 120 V F1 1T/250 F2 4T/250 F3 4T/250 F4 4T/250  200 ... 240 V F1 0.63T/250 F2 2.5T/250 F3 2.5T/250 F4 2.5T/250	Sample gas flow	0.2% of the current measuring span with a change in flow of 0.1 l/min within the permissible flow range
<b>Gas inlet conditions</b>		Sample gas pressure	< 1% of the span with a change in pressure of 100 hPa
Sample gas pressure	800 ... 1 100 hPa (absolute)	Auxiliary power	< 0.1% of the output signal span with rated voltage ± 10%
Sample gas flow	30 ... 90 l/h	<b>Electrical inputs and outputs</b>	
Sample gas temperature	Min. 0 to max. 50 °C, but above the dew point	Analog output	0/2/4 ... 20 mA, floating; load max. 750 Ω
Temperature		Relay outputs	6, with changeover contacts, freely configurable, e.g. for measuring range identification; load: 24 V AC/DC/1 A, floating
• of the measuring cell (sensor)	70 °C	Analog inputs	2, dimensioned for 0/2/4 ... 20 mA for external pressure sensor and correction of cross-interference
• of the measurement cell block (base)	80 °C (heated)	Digital inputs	6, designed for 24 V, floating, freely configurable, e.g. for measuring range switchover
Sample gas humidity	< 90% relative humidity	Serial interface	RS 485
Purging gas pressure		Options	AUTOCAL function with 8 additional digital inputs and 8 additional relay outputs, also with PROFIBUS PA (on request) or PROFIBUS DP (on request)
• Permanent	165 hPa above ambient pressure	<b>Climatic conditions</b>	
• For short periods	Max. 250 hPa above ambient pressure	Permissible ambient temperature	-40 ... +70 °C during storage and transportation, 5 ... 45 °C in operation
		Permissible humidity (dew point must not be fallen below)	< 90% relative humidity as annual average, during storage and transportation

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Selection and ordering data		Article No.	
<b>CALOMAT 62 gas analyzer</b> For field installation		7MB2531- - - - - Cannot be combined	
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.			
<u>Material of sample gas path</u>			
Stainless steel, mat. no. 1.4571; non-flow-type reference chamber, Purging gas stub 10 mm 1/8"-27 NPT		0	0
Hastelloy C22; non-flow-type reference chamber, 1/8"-27 NPT		2	
Hastelloy C22; flow-type reference chamber, 1/8"-27 NPT		3	3
Stainless steel, mat. no. 1.4571; non-flow-type reference chamber, Purging gas stub 3/8" 1/8"-27 NPT		4	4
Hastelloy C22; non-flow-type reference chamber, 1/8"-27 NPT		6	
Hastelloy C22; flow-type reference chamber, 1/8"-27 NPT		7	7
<u>Application</u>	<u>Possible with measuring range identification</u>		
H <sub>2</sub> in N <sub>2</sub>	0; 5	AN	AN
H <sub>2</sub> in Cl <sub>2</sub>	0; 5	AB	AB
Cl <sub>2</sub> in air	1; 6	BL	BL
HCl in air	1; 6	CL	CL
SO <sub>2</sub> in air	1; 6	EL	EL
CO <sub>2</sub> in H <sub>2</sub>	0; 5	KA	KA
CO <sub>2</sub> in N <sub>2</sub>	1; 6	KN	KN
<u>Smallest measuring range</u>	<u>Largest measuring range</u>		
0 ... 1 %	0 ... 100 %	0	
0 ... 5 %	0 ... 100 %	1	
0 ... 5 %	0 ... 60 %	2	
0 ... 10 %	0 ... 100 %	3	
0 ... 20 %	0 ... 40 %	4	
100 ... 99 %	100 ... 0 %	5	
100 ... 95 %	100 ... 0 %	6	
100 ... 90 %	100 ... 0 %	7	
100 ... 80 %	100 ... 60 %	8	
<u>Add-on electronics</u>			
Without		0	
AUTOCAL function		1	
<ul style="list-style-type: none"> <li>With 8 additional digital inputs and outputs</li> <li>With 8 additional 8 digital inputs/outputs and PROFIBUS PA interface</li> <li>With 8 additional digital inputs/outputs and PROFIBUS DP interface</li> </ul>		6	6
		7	7
<u>Power supply</u>			
100 ... 120 V AC, 48 ... 63 Hz		0	
200 ... 240 V AC, 48 ... 63 Hz		1	
<u>Heating of internal gas paths and analyzer unit</u>			
Without			
With (max. 80 °C)		A	
		B	
<u>Explosion protection</u>			
Without			
According to ATEX II 2G, leakage compensation <sup>1)</sup>		A	
According to ATEX II 2G, continuous purging <sup>1)</sup>		E	E
		F	F
<u>Language (supplied documentation, software)</u>			
German		0	
English		1	
French		2	
Spanish		3	
Italian		4	

<sup>1)</sup> Only in connection with an approved purging unit.

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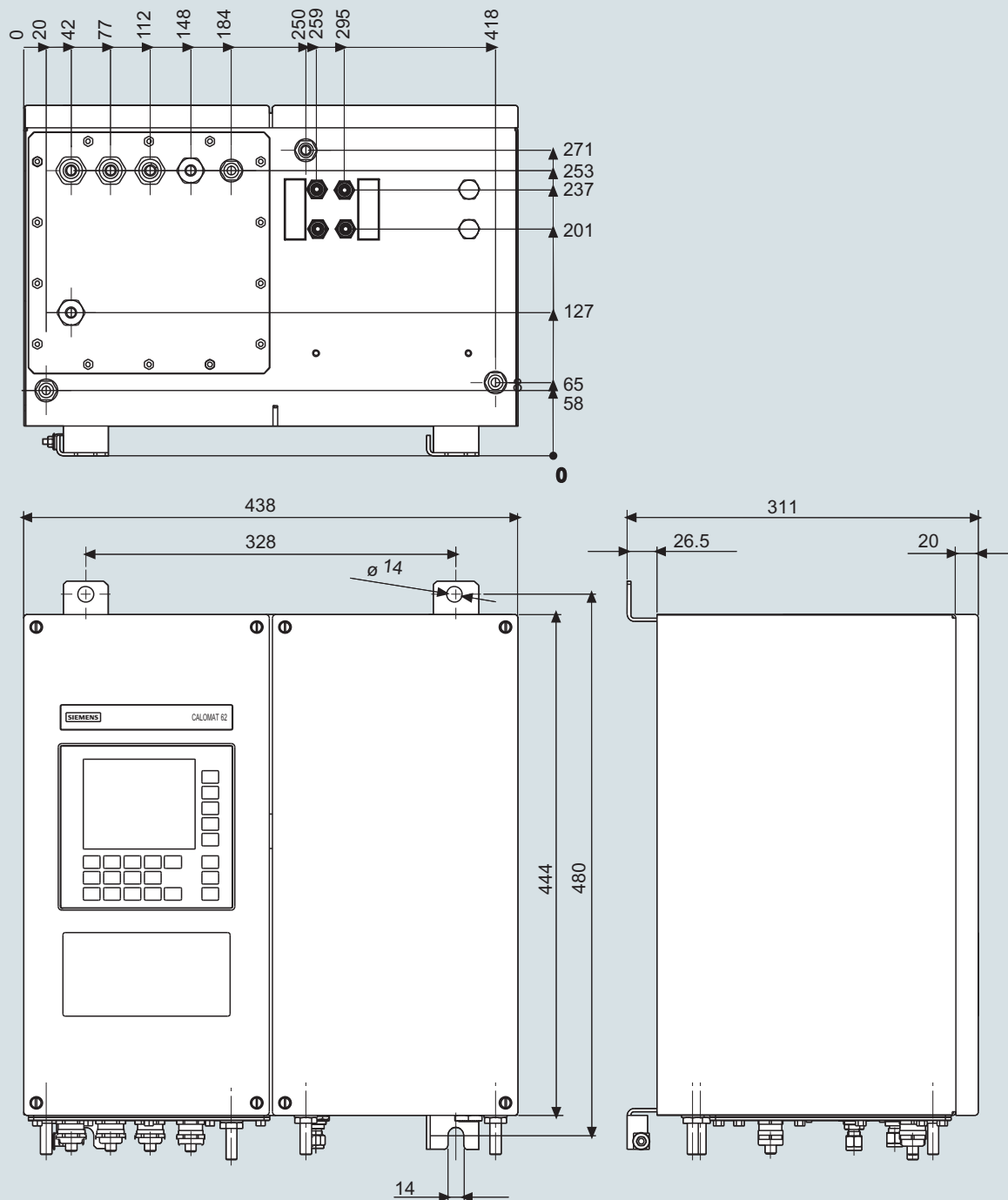
**Field device**

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**Selection and ordering data**

<i>Additional versions</i>	<b>Order code</b>
Add "-Z" to Article No. and specify Order codes.	
TAG labels (specific lettering based on customer information)	<b>B03</b>
BARTEC Ex p purging unit "Leakage compensation"	<b>E71</b>
BARTEC Ex p purging unit "Continuous purging"	<b>E72</b>
Clean for O <sub>2</sub> service (specially cleaned gas path)	<b>Y02</b>
Measuring range indication in plain text, if different from the standard setting	<b>Y11</b>
Special setting (only in conjunction with an application no., e.g. extended measuring range)	<b>Y12</b>
Extended special setting (only in conjunction with an application no., e.g. determination of cross-interferences)	<b>Y13</b>
<i>Accessories</i>	<b>Article No.</b>
RS 485/Ethernet converter	<b>A5E00852383</b>
RS 485/RS 232 converter	<b>C79451-Z1589-U1</b>
RS 485/USB converter	<b>A5E00852382</b>
AUTOCAL function with 8 digital inputs/outputs	<b>A5E00064223</b>
AUTOCAL function 8 digital inputs/outputs each and PROFIBUS PA	<b>A5E00057315</b>
AUTOCAL function 8 digital inputs/outputs each and PROFIBUS DP	<b>A5E00057318</b>
Set of Torx screwdrivers	<b>A5E34821625</b>

## Dimensional drawings



CALOMAT 62, field device, dimensions in mm

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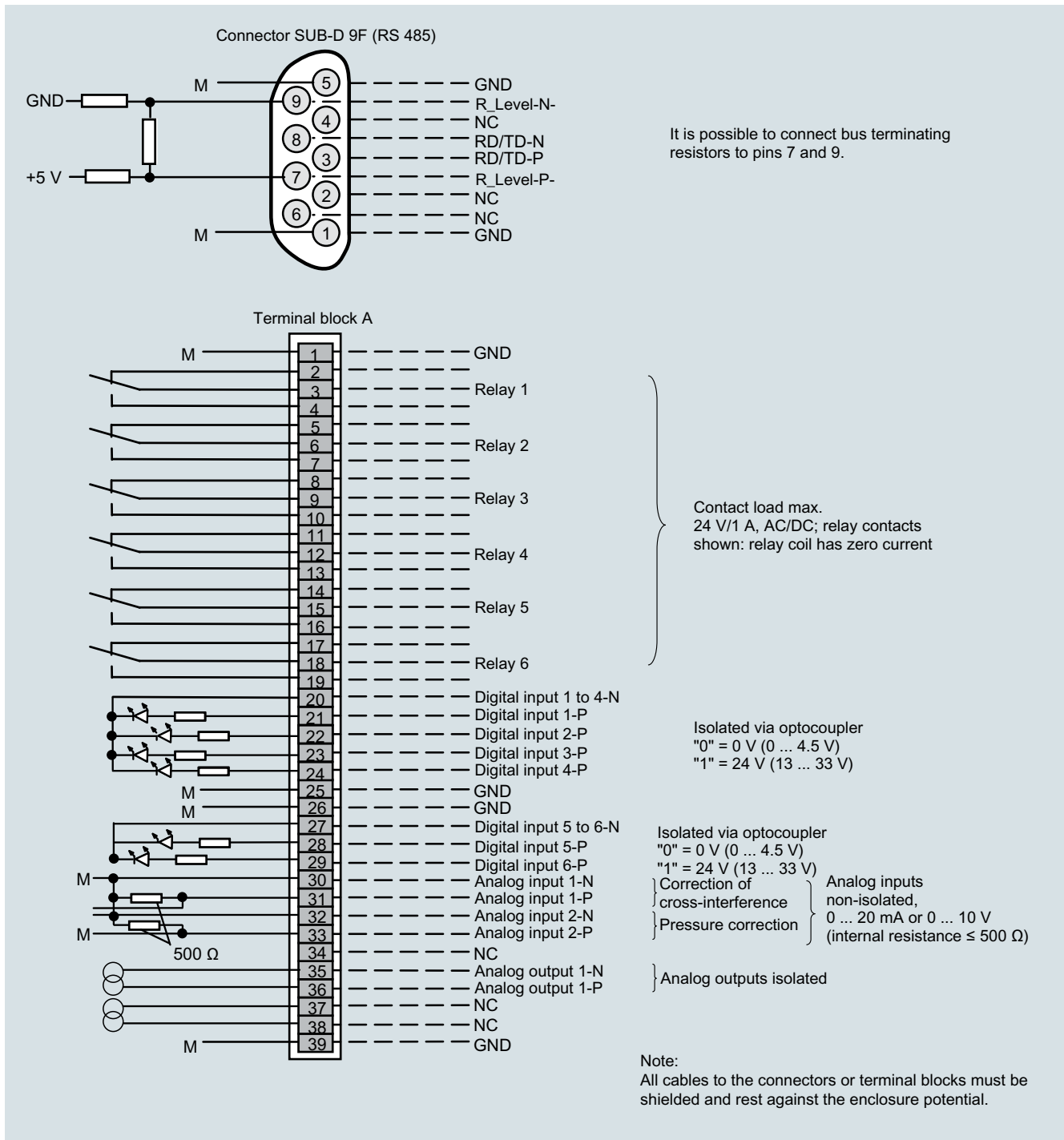
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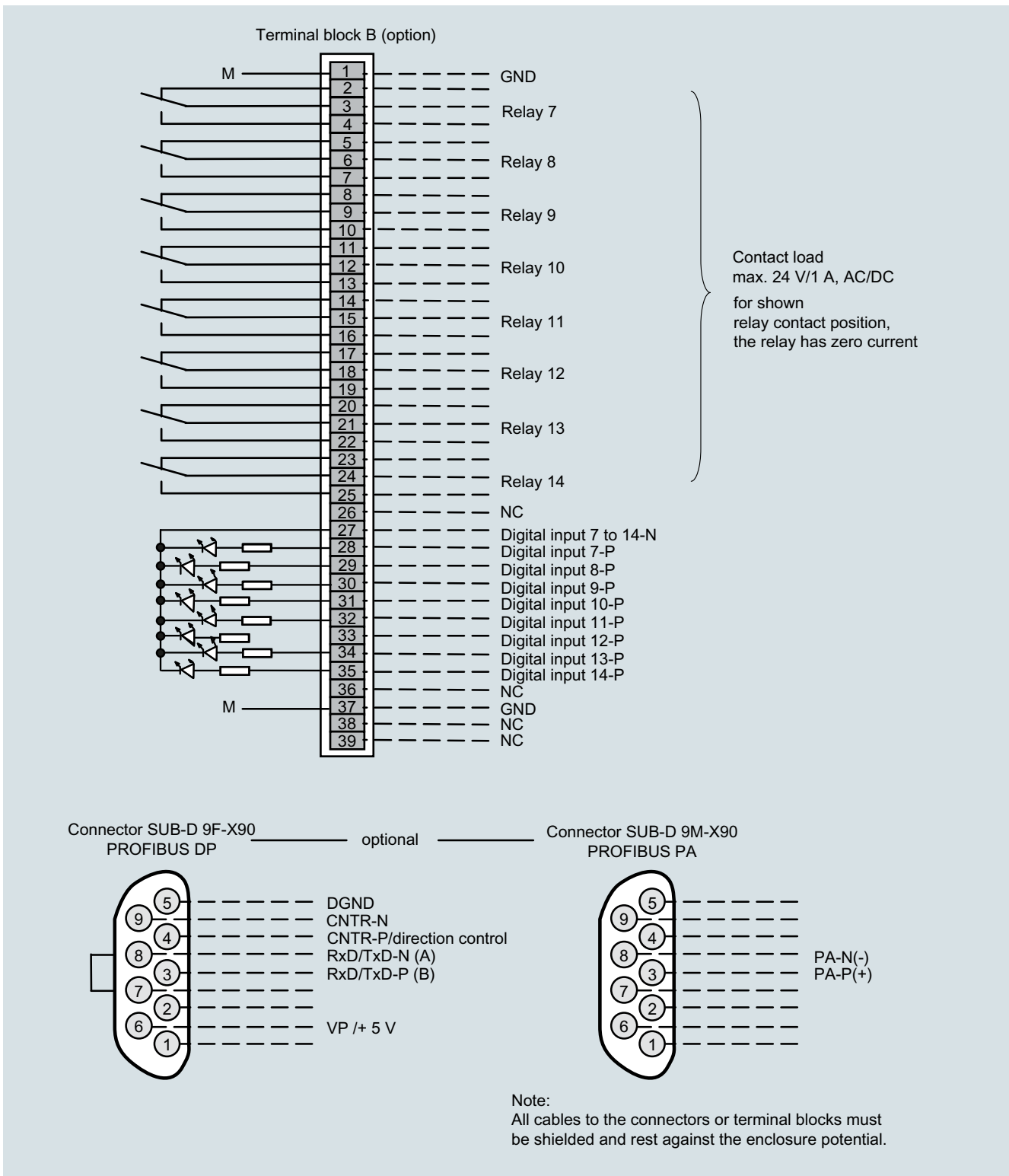
## Field device

### Circuit diagrams

#### Pin assignment (electrical and gas connections)



CALOMAT 62, field device, pin and terminal assignment



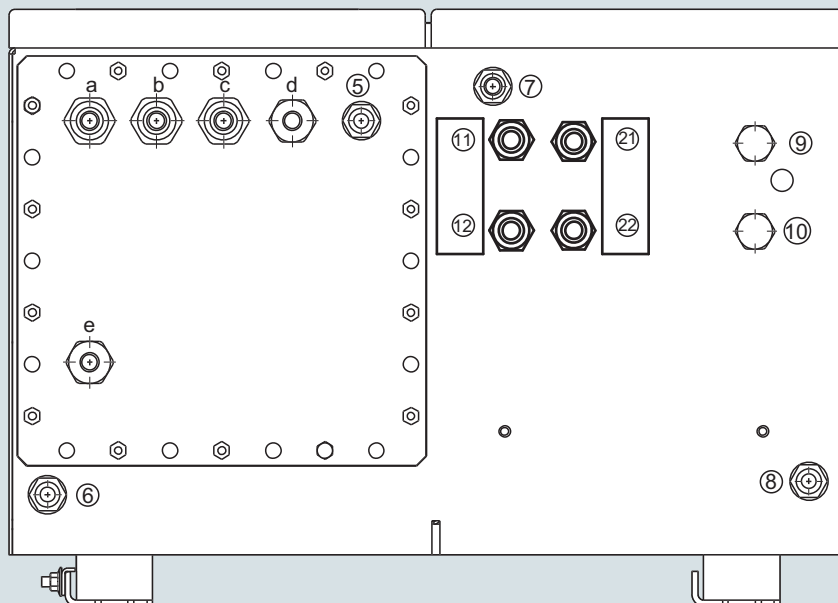
CALOMAT 62, field device, pin and terminal assignment of the AUTOCAL board and PROFIBUS connectors

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## Gas connections

- |       |                          |                                    |
|-------|--------------------------|------------------------------------|
| ⑪     | Sample gas inlet         | } Internal thread<br>1/8" - 27 NPT |
| ⑫     | Sample gas outlet        |                                    |
| ⑰     | Reference gas inlet      |                                    |
| ⑱     | Reference gas outlet     |                                    |
| ⑤ - ⑧ | Purge gas inlets/outlets | Fittings Ø 10 mm or 3/8"           |
| ⑨     | Unassigned               |                                    |
| ⑩     | Unassigned               |                                    |

## Electrical connections

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

CALOMAT 62, field device, gas connections and electrical connections