



## Long range distance sensors DML, DML40-2

DML40-2-1111



**Model Name** > **DML40-2-1111**  
**Part No.** > **1027607**



**At a glance**

- Measurement range from 0.5 m up to 1,200 m with a reflector
- Time-of-flight measurement
- Easy alignment thanks to pilot laser
- Freely programmable parameters
- RS-422, RS-232, PROFIBUS, analog and two switching outputs
- Near field blanking parameter for operation through a protection window

**Your benefits**

- Extremely long measurement ranges of up to 1,200 m on natural targets offer high flexibility in applications where range is key
- Special visible alignment laser allows fast and easy alignment - even over long distances, offering fast and cost-effective installation
- Tough, metal housing design for trouble-free operation in rough environmental conditions
- Class 1 IR laser for discrete and safe measurement and detection
- User-friendly software with an easy-to-follow interface ensures fast and cost-optimized setup
- Serial and analog interfaces as well as two digital switching outputs offer local over/under limit and service signals



CE III **RS-232 RS-422**

**Performance**

Measurement range <sup>1). 2). 3).</sup> :	0.5 m ... 1,200 m, on reflector OP60 0.5 m ... 600 m, on reflective tape "Diamond Grade" 0.5 m ... 800 m, on reflector PL880FS01
Resolution:	≤ 1 mm
Repeatability <sup>4). 5).</sup> :	6 mm
Accuracy <sup>6). 7).</sup> :	± 10 mm
Light source:	Laser, infrared
Typ. light spot size (distance):	20 mm (+ 5 x distance in m)
Average depth:	1/16/64/256/1,024
Response time <sup>8).</sup> :	1 ms ... 600 ms
Cycle time:	5,120 per sec.
Laser class:	1 (EN 60825-1:Nov.2001, IEC 60825-1:ÄM2:2001)
Output time:	1 ms ... 600 ms <sup>9)</sup>

<sup>1)</sup> On reflective tape "Diamond Grade" <sup>2)</sup> On reflector PL880FS01 <sup>3)</sup> On reflector OP60 <sup>4)</sup> 6 % ... 90 % remission <sup>5)</sup> Environmental conditions constant, min. warm-up time 30 min, average depth 1,024, statistical error 1  $\sigma$  <sup>6)</sup> 23 °C air temperature, 977 hPa, min. warm-up time 30 min. <sup>7)</sup> When operating in ambient temperatures

between +40 °C ... +55 °C the accuracy can decrease by factor 2.5<sup>8) 9)</sup> Dependant on average setting, average depth, timeout, baud rate, data output and output format

## Interfaces

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Data interface <sup>1)</sup> :	RS-422 RS-232
Output type <sup>2)</sup> :	Q1, Q2
Interface for parametrization:	RS-232
Analog output:	4 mA ... 20 mA, scalable <sup>3)</sup>

1) Switchable<sup>2) 3)</sup> Output Q short-circuit protected

## Mechanics/electronics

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Supply voltage Vs:	DC 18 V ... 30 V, limit values
Ripple <sup>1)</sup> :	5 Vpp
Initialization time:	6 s
Weight:	Ca. 1,200 g
Output current IA:	100 mA
Power consumption <sup>2)</sup> :	≤ 6 W
Connection type:	1 x cable gland, 1 x Sub-D, 9-pin

1) May not fall short of or exceed  $V_S$  tolerances<sup>2)</sup> Without load

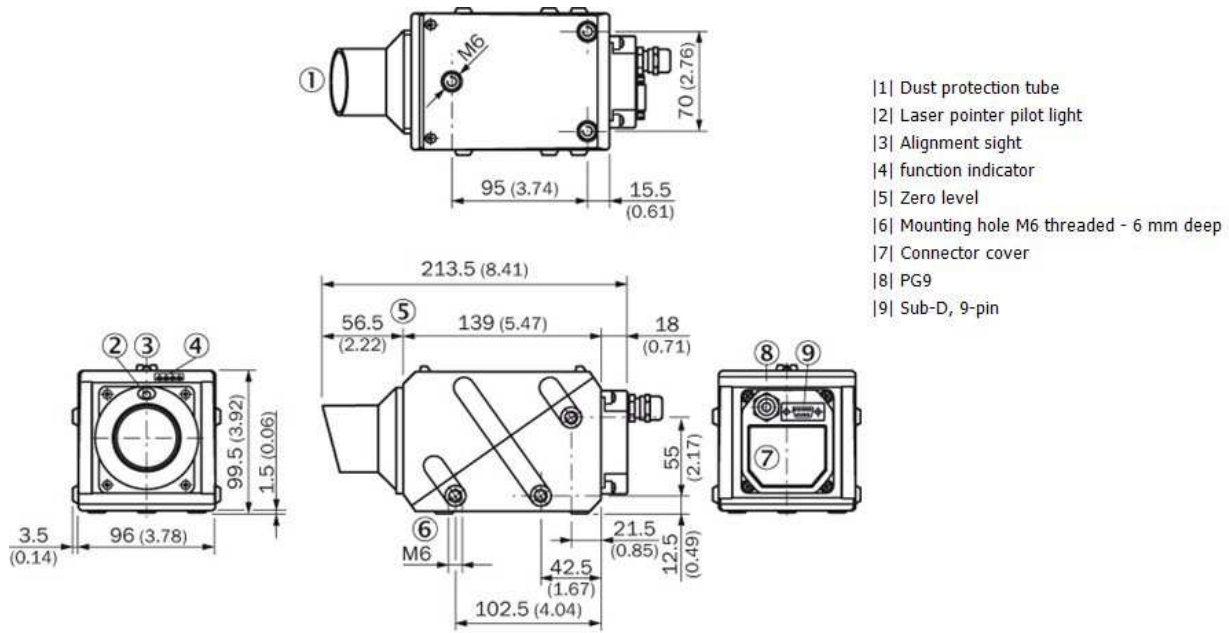
## Ambient data

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Enclosure rating:	IP 65
Protection class <sup>1)</sup> :	III
Temperature drift <sup>2), 3)</sup> :	Typ. 0.3 mm/K Typ. 0.6 mm/K
Ambient temperature:	Operation with cooling case: -10 ... +75 °C Operation: -10 ... +55 °C Storage: -25 ... +70 °C
Mechanical load:	Shock: IEC 60068-2-27, -2-29 Sine: IEC 60068-2-6
Electromagnetic compatibility (EMC):	EN 55011:1998 Kl. B, Gr.1/EN 6100-6-2:1999

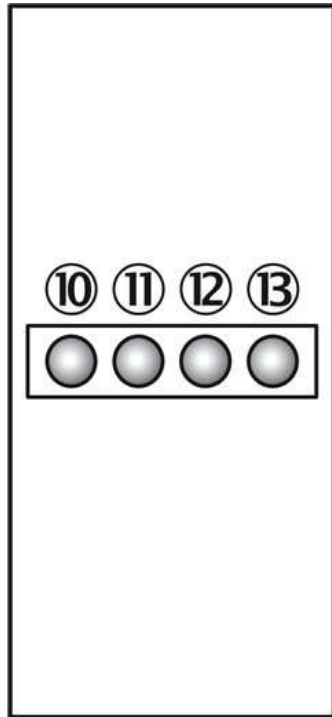
1) Reference voltage DC 50 V PELV-voltage (EN 50178)<sup>2)</sup> -10 °C ... 0 °C, +40 °C ... +55 °C<sup>3)</sup> 0 °C ... +40 °C

**Dimensional drawing**



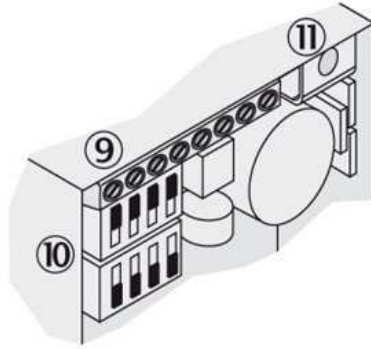
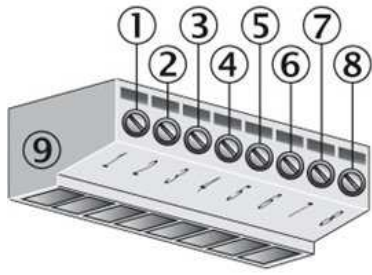
- |1| Dust protection tube
- |2| Laser pointer pilot light
- |3| Alignment sight
- |4| function indicator
- |5| Zero level
- |6| Mounting hole M6 threaded - 6 mm deep
- |7| Connector cover
- |8| PG9
- |9| Sub-D, 9-pin

**Adjustment possible**



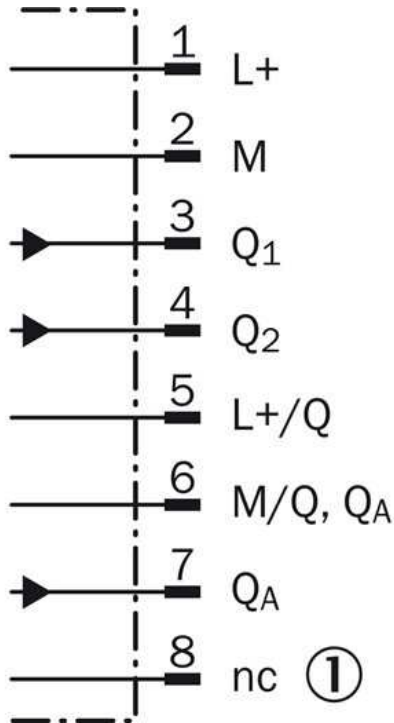
- |10| Q2 function indicator
- |11| Q1 function indicator
- |12| Operating indicator, green
- |13| Plausibility (measurement error) red

Connection type DMxxx-2 RS232/RS-422, PG9

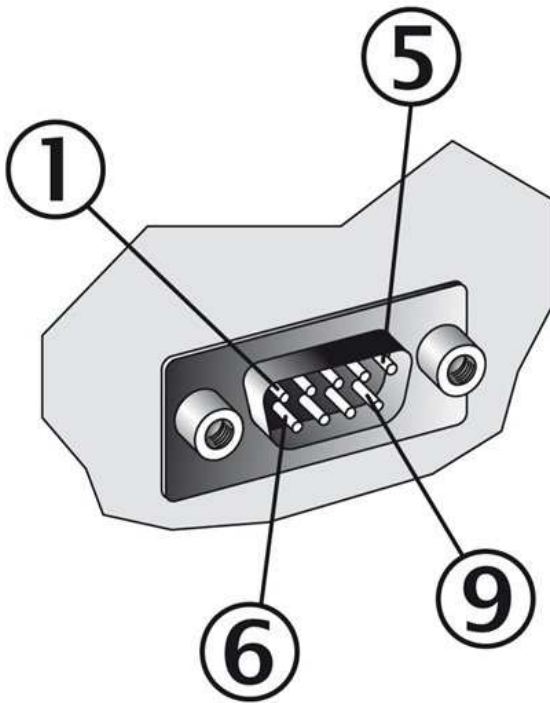


- |1| Pin 1
- |2| Pin 2
- |3| Pin 3
- |4| Pin 4
- |5| Pin 5
- |6| Pin 6
- |7| Pin 7
- |8| Pin 8
- |9| Terminals
- |10| DIP switches RS-232-/RS-422 switching
- |11| Shield

Connection diagram DMxxx-2 RS232/RS-422, PG9

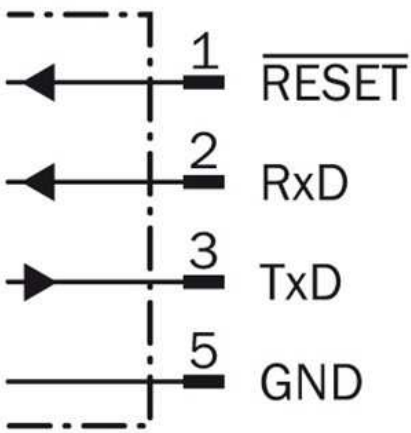


|12| not connected

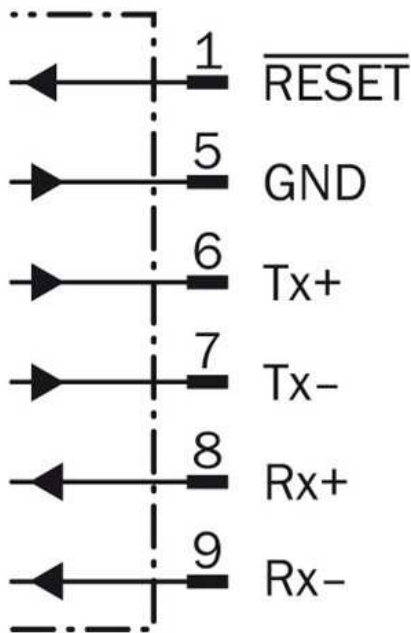


- |1| Pin 1
- |5| Pin 5
- |6| Pin 6
- |9| Pin 9

### RS-232



### RS-422



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