



DML40-2-1111S01

DML

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
DML40-2-1111S01	1044053

Other models and accessories → www.sick.com/DML



Detailed technical data

Features

Measuring range	0.5 m ... 600 m, on "diamond grade" reflective tape ¹⁾ 0.5 m ... 800 m, on reflector PL880FS01 ²⁾ 0.5 m ... 1,200 m, on reflector OP60 ³⁾
Target	Reflector
Resolution	≤ 1 mm
Repeatability	6 mm ^{4) 5)}
Measurement accuracy	± 10 mm ^{6) 7)}
Response time	1 ms ... 600 ms ⁸⁾
Measurement cycle time	0.195 ms
Average depth	1/16/64/256/1,024
Output time	1 ms ... 600 ms ⁸⁾
Light source	Laser, infrared
Laser class	2, even with simultaneous operation of measurement and alignment laser (IEC 60825-1:2014, EN 60825-1:2014)
Typ. light spot size (distance)	20 mm (+ 5 x distance in m)
Note	Alignment laser always on
Special characteristic	Alignment laser always on

¹⁾ On "diamond grade" reflective tape.

²⁾ On reflector PL880FS01.

³⁾ On reflector OP60.

⁴⁾ 6% ... 90% remission factor.

⁵⁾ Environmental conditions constant, min. warm-up time 30 min, average depth 1,024, statistical error 1 σ .

⁶⁾ 23 °C air temperature, 977 hPa, min. warm-up time 30 min.

⁷⁾ When operating in ambient temperatures between +40 °C ... +55 °C the accuracy can decrease by factor 2.5.

⁸⁾ Dependent on averaging method, averaging depth, timeout, baud rate, data output, and output format.

Interfaces

Serial	✓, RS-232, RS-422
Remark	Switchable
Digital output	

¹⁾ Scalable.

²⁾ Output Q short-circuit protected.

Number	2
Type	PNP
Maximum output current I_A	≤ 100 mA
Analog output	
Type	Current output
Current	4 mA ... 20 mA ^{1) 2)}
Interface for parametrization	
	RS-232

¹⁾ Scalable.

²⁾ Output Q short-circuit protected.

Electronics

Supply voltage U_B	DC 18 V ... 30 V, limit values
Power consumption	≤ 6 W ¹⁾
Ripple	5 V _{pp} ²⁾
Initialization time	6 s
Enclosure rating	IP65
Protection class	III ³⁾

¹⁾ Without load.

²⁾ May not fall short of or exceed V_S tolerances.

³⁾ Reference voltage DC 50 V PELV-voltage (EN 50178).

Mechanics

Dimensions (W x H x D)	61 mm x 85 mm x 166 mm
Weight	Approx. 1,200 g
Connection type	1 x terminal connection, 1 x Sub D, 9-pin

Ambient data

Ambient temperature, operation	-10 °C ... +55 °C -10 °C ... +75 °C, operation with cooling case
Ambient temperature, storage	-25 °C ... +75 °C
Temperature drift	Typ. 0.6 mm/K ¹⁾ Typ. 0.3 mm/K ²⁾
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⁾ -10 °C ... 0 °C, +40 °C ... +55 °C.

²⁾ 0 °C ... +40 °C.

Certificates

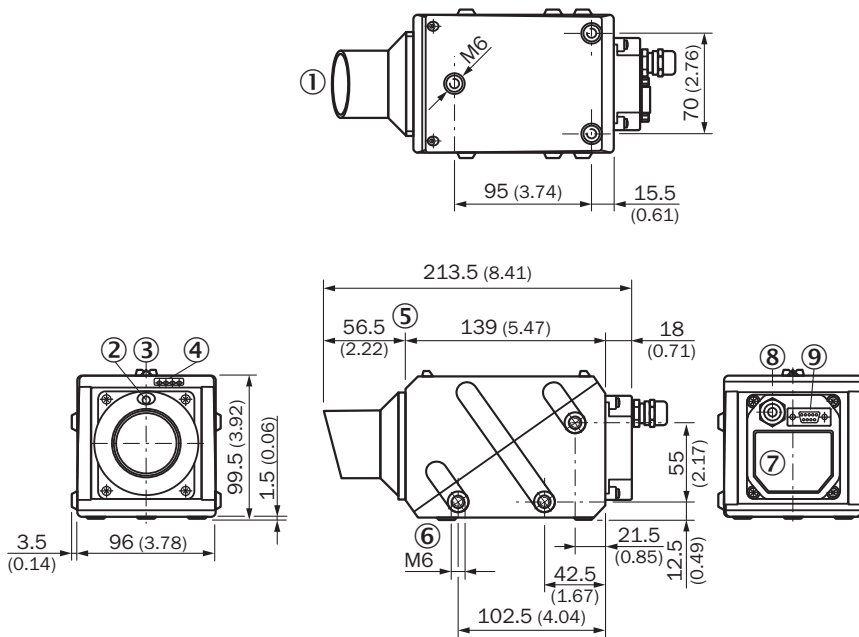
EU declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓

Classifications

ECLASS 5.0	27270801
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ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

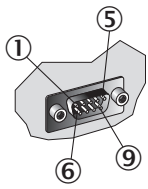
Dimensional drawing DMT10-2-x1xx DML40-2-x1xx



Dimensions in mm (inch)

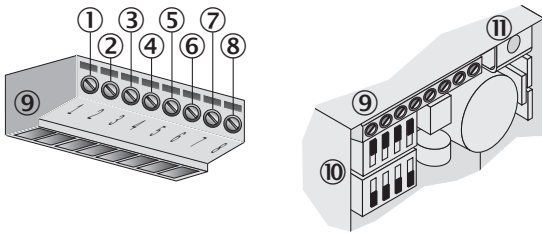
- ① Dust protection tube
- ② Laser pointer pilot light
- ③ Alignment sight
- ④ function indicator
- ⑤ Zero level
- ⑥ Mounting hole M6 threaded - 6 mm deep
- ⑦ Connector cover
- ⑧ PG9
- ⑨ Sub-D, 9-pin

RS-232/RS-422 connection type



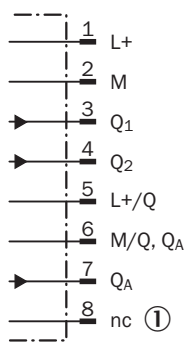
- ① Pin 1
- ⑤ Pin 5
- ⑥ Pin 6
- ⑨ Pin 9

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



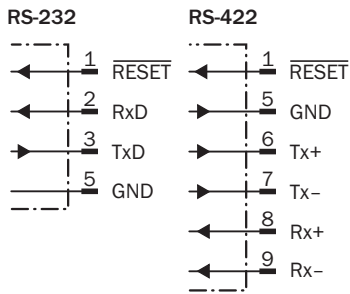
- ① Pin 1
- ② Pin 2
- ③ Pin 3
- ④ Pin 4
- ⑤ Pin 5
- ⑥ Pin 6
- ⑦ Pin 7
- ⑧ Pin 8
- ⑨ Terminals
- ⑩ DIP switches RS-232-/RS-422 switching
- ⑪ Shield

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

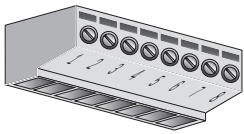


- ⑫ Not assigned

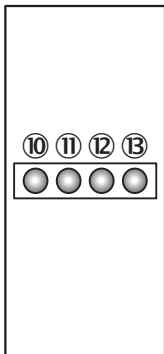
RS-232/RS-422 connection diagram



Connection diagram




Adjustment possible





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

Recommended accessories

Other models and accessories → www.sick.com/DML

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> • Description: Alignment unit for DMT/DML, incl. mounting material • Material: Steel • Details: Steel, zinc coated • Items supplied: Mounting hardware included 	BEF-GH-DME	5309130

	Brief description	Type	part no.
reflectors and optics			
	<ul style="list-style-type: none"> • Description: Reflector plate, "diamond grade" reflective tape, 665 mm x 665 mm, base plate material: aluminum, screw connection • Ambient operating temperature: -25 °C ... +65 °C 	PL560DG	1016806
connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, D-Sub, 9-pin, straight • Connection type head B: Flying leads • Signal type: Serial • Cable: 3 m, 3-wire • Description: Serial, unshielded 	YFDSA9-030XXXXLE-BX	2020319

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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