

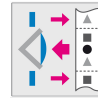


Markless sensors
Ethernet TCP/IP, ML20

ML20M-P1211



Model Name > [ML20M-P1211](#)
Part No. > [1044675](#)



At a glance

- Tough metal housing
- Scanning speed of 7 m/s
- Monitor process quality via a control panel or SOPAS, via Ethernet
- Easy sensor teach-in and alignment
- Reproducibility of 0.6 mm (2 Sigma)
- Plug can be rotated 90°

Your benefits

- Reliable detection, even with complex images reduces system downtime and waste
- Fewer machine builder restrictions mean more freedom when designing packaging
- Allows for more efficient utilization of space on the product instead of using unnecessary print marks and place markers
- Faster and easier format change by teaching of saved formats via Ethernet
- Monitor process and teach quality via a display or SOPAS, increasing reliability
- Fast and simple sensor alignment via a visible light spot and notches on the housing
- Easy sensor teach-in, directly via the control panel, external teach-in signal or using SOPAS via Ethernet



Features

| | |
|----------------------------------|---------------------------------|
| Sensing distance: | 20 mm |
| Sensing distance tolerance: | ± 2.5 mm |
| Light source ¹⁾ : | LED |
| Wave length: | 400 nm ... 700 nm |
| Light spot size: | 60 mm x 3 mm |
| Repeatability ²⁾ : | 0.6 mm |
| Max. movement speed: | 7 m/s |
| Picture length (min.): | 40 mm |
| Picture length (max.): | 1,000 mm |
| Picture height (min.): | 34 mm |
| Tolerance lateral movement: | ± 5 mm |
| Dimensions (W x H x D): | 46 mm x 77 mm x 46 mm |
| Housing design (light emission): | Rectangular |
| Type of light: | Visible white light |
| Teach-in mode: | Start stop teach, trigger teach |

1) Average service life of 100,000 h at $T_A = +25\text{ °C}$ 2) Statistical error 2σ

Interfaces

Data interface: Ethernet TCP/IP

Mechanics/electronics

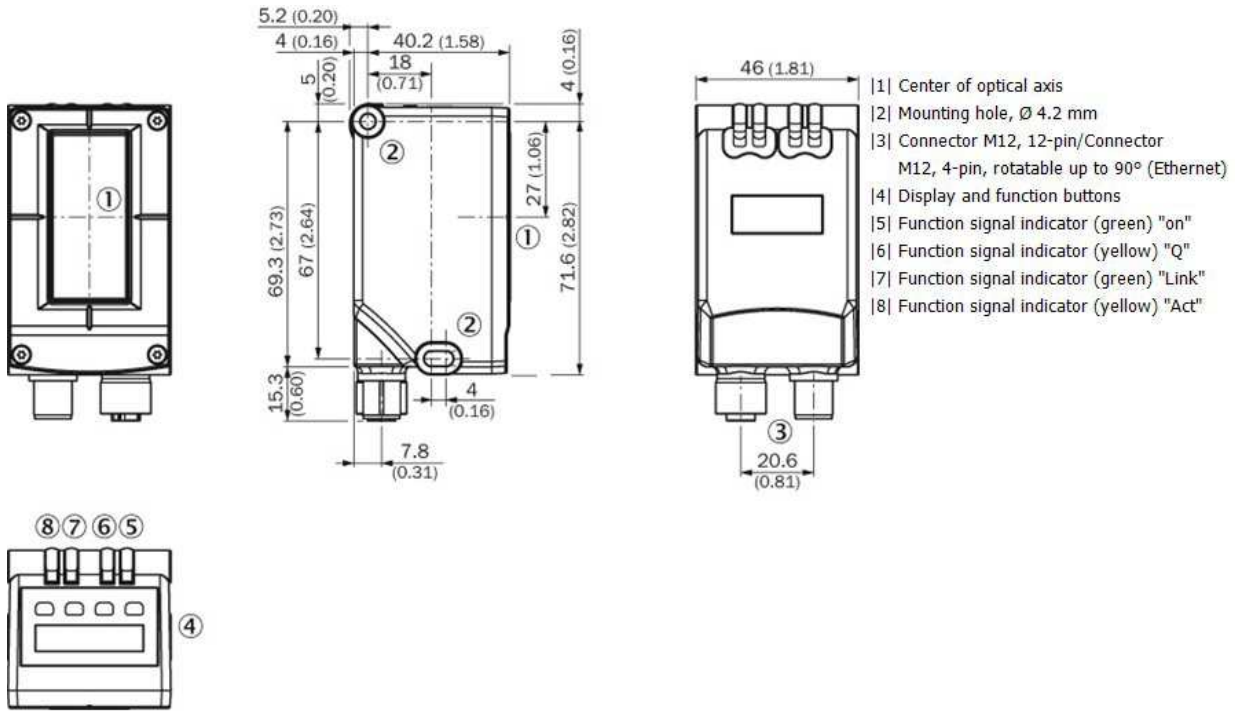
Ripple ¹⁾: $\leq 5\text{ Vpp}$
Power consumption ²⁾: $< 6\text{ W}$
Output type: PNP: HIGH = $V_S - \leq 2\text{ V}$ /LOW $< 0,5\text{ V}$ ³⁾
Status output: PNP: HIGH = $V_S - \leq 2\text{ V}$ /LOW $< 0,5\text{ V}$ ³⁾
Switching mode: PNP
Output current I_{max} ⁴⁾: $< 100\text{ mA}$
Input, teach-in (ET): PNP: Teach: $U = 12\text{ V} \dots < U_V$, Run: $U < 2\text{ V}$
Input, blanking input (AT) ⁵⁾: PNP: blanked: $U = 12\text{ V} \dots < U_V$, free-running $U < 2\text{ V}$
Initialization time: $< 10\text{ s}$
Retention time (ET): $\geq 6\text{ s}$, non-volatile memory
Connection type ⁶⁾: Ethernet connection M12, 4-pin Connector M12, 12-pin
Protection class: III
Circuit protection: V_S connections reverse-polarity protected, Output Q short-circuit protected, Interference suppression
Enclosure rating: IP 65, IP 65
Weight: 325 g
Housing material: Metal
Encoder resolution: $100\text{ }\mu\text{m} \dots 400\text{ }\mu\text{m}$ (in $1\text{ }\mu\text{m}$)
Encoder input: Differential: $4,5\text{ V} - 5,5\text{ V}$ /TTL/RS-422, Single ended: $12\text{ V} - 30\text{ V}$ /HTL/push-pull
Supply voltage: $12\text{ V DC} \dots 30\text{ V DC}$ ⁷⁾
Ambient light immunity: 30,000 lx
Fieldbus interface: EtherNet/IP

¹⁾ May not exceed or fall short of V_S tolerances ²⁾ Without load ³⁾ Detailed description of the status output in operating manual ⁴⁾ $\sum I_{out} = Q + Q\text{ status}$ ⁵⁾ Fade-out of identical areas ⁶⁾ Use drilled and shielded cable ⁷⁾ Limit values; operation in short-circuit protected network max. 8 A

Ambient data

Shock load: According to IEC 60068
Ambient operating temperature: $-10\text{ °C} \dots +55\text{ °C}$
Ambient storage temperature: $-20\text{ °C} \dots +75\text{ °C}$
UL File No.: NRKH.E181493 & NRKH7.E181493

Dimensional drawing



Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com