

SAFETY MAGNETIC SENSOR

YSM-xxK4-Mxxx-xxxx

ECOLAB



22 AND 78 MM SIZES

UP TO CAT. 4 / PL e

OUTSTANDING FEATURES

- Frontal or frontal 90° actuation
- Safe switch on distance Sao : 4 or 8 mm
- Safe switch off distance Sar : 10, 17 or 18 mm
- PVC cable or M12 pigtail connection
- Type 4, low coding level according to ISO 14119
- Up to category 4, PL e according to ISO 13849-1
- Extremely compact size
- ECOLAB certified

TECHNICAL DATA

Supply voltage range	24 VDC ± 20 %
Load current	max 200 mA (-25°C...+80°C)
Switching frequency	< 5 Hz
Safe switch on distance Sao	4 or 8 mm
Safe switch off distance Sar	10, 17 or 18 mm
Dimensions	36 mm x 26 mm x 13 mm (YSM-22 series) 88 mm x 25 mm x 13 mm (YSM-78 series)
Usage category	DC 12
Repeat accuracy	< 0.2 mm
Actuation	Frontal or Frontal 90°
Hysteresis	see type-specific data (page 2)
Output	2x NO or NC/NO Reed contact
Minimum air gap Somin	0.5 mm
Ambient temperature range	-25 ... +80 °C
Storage temperature range	-25 ... +80 °C
Enclosure rating	IP 67 (EN 60529) and IP 6K9K (ISO 20653)
Housing material	PBT yellow, PC black
LED indication	green (optional)
Max. torque for fastening screw	0.7 Nm
Weight	see type-specific data (page 2)
Connection	5 m PVC cable 4x0,25mm ² or 0.15 m PVC pigtail with M12 4-pins connector
Cable diameter	Ø 4.7 mm ± 0,25 mm
Max. torque for fastening connector	0.6 Nm
Cable runs	30 m max.
Safety level*	Cat.4 / PL e (EN ISO 13849-1) SIL _{CL} 3 (IEC/EN 62061) SIL 3 (IEC/EN 61508)
Min. Safe Failure Fraction (SFF)	99.5%
PFH _d (1/h)	8,43 x 10 ⁻⁹
Vibration resistance	10 Hz ... 55 Hz (EN 60947-5-2), 1 mm amplitude
Shock resistance	30 g / 11 ms (EN 60947-5-2)
Area type class	1
Max. rated insulation voltage U _i	300 V DC / 250 V AC
Rated impulse withstand voltage U _{imp}	0.8 kV
Content in each bag	Sensor and actuator (kit)

* Short circuit recognition through differing voltages or pulsed signals required

TYPE-SPECIFIC DATA

YSM-22 SERIES

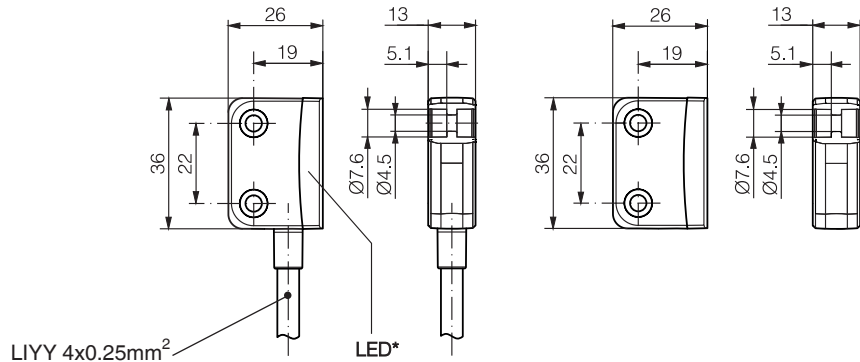
Part reference	Dimensions [mm]	Sao	Sar	Actuation	Hysteresis	Connection	Contacts	LED	Weight sensor	Weight actuator
YSM-22K4-MSFN-C050	36 x 26 x 13	4 mm	10 mm	Frontal	1.5 mm	PVC, 5 m, 4 wire	2x NO	-	176 g	17 g
YSM-22K4-MEFN-C050	36 x 26 x 13	8 mm	17 mm	Frontal	2.5 mm	PVC, 5 m, 4 wire	2x NO	-	176 g	17 g
YSM-22K4-MSAN-C050	36 x 26 x 13	4 mm	10 mm	Frontal 90°	1.5 mm	PVC, 5 m, 4 wire	2x NO	-	176 g	17 g
YSM-22K4-MEAN-C050	36 x 26 x 13	8 mm	17 mm	Frontal 90°	2.5 mm	PVC, 5 m, 4 wire	2x NO	-	176 g	17 g
YSM-22K4-MSFN-P012	36 x 26 x 13	4 mm	10 mm	Frontal	1.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	35 g	17 g
YSM-22K4-MEFN-P012	36 x 26 x 13	8 mm	17 mm	Frontal	2.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	35 g	17 g
YSM-22K4-MSAN-P012	36 x 26 x 13	4 mm	10 mm	Frontal 90°	1.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	35 g	17 g
YSM-22K4-MEAN-P012	36 x 26 x 13	8 mm	17 mm	Frontal 90°	2.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	35 g	17 g
YSM-22K4-MEFL-C050	36 x 26 x 13	8 mm	17 mm	Frontal	2.5 mm	PVC, 5 m, 4 wire	NO / NC	✓	176g	17 g

YSM-78 SERIES

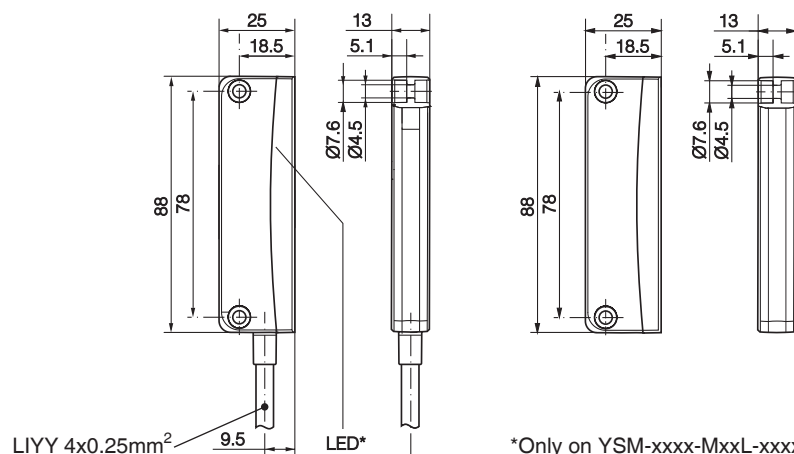
Part reference	Dimensions [mm]	Sao	Sar	Actuation	Hysteresis	Connection	Contacts	LED	Weight sensor	Weight actuator
YSM-78K4-MEFN-C050	88 x 25 x 13	8 mm	18 mm	Frontal	3.5 mm	PVC, 5 m, 4 wire	2x NO	-	196 g	35 g
YSM-78K4-MEAN-C050	88 x 25 x 13	8 mm	18 mm	Frontal 90°	3.5 mm	PVC, 5 m, 4 wire	2x NO	-	196 g	35 g
YSM-78K4-MEFN-P012	88 x 25 x 13	8 mm	18 mm	Frontal	3.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	45 g	35 g
YSM-78K4-MEAN-P012	88 x 25 x 13	8 mm	18 mm	Frontal 90°	3.5 mm	PVC, 0.15 m + M12 4-pin	2x NO	-	45 g	35 g
YSM-78K4-MEFL-C050	88 x 25 x 13	8 mm	18 mm	Frontal	3.5 mm	PVC, 5 m, 4 wire	NO / NC	✓	196 g	35 g

DIMENSIONS

YSM-22 SERIES

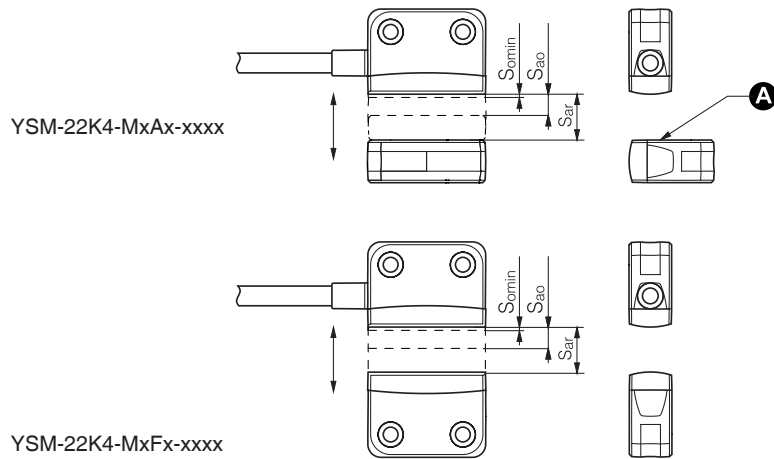


YSM-78 SERIES

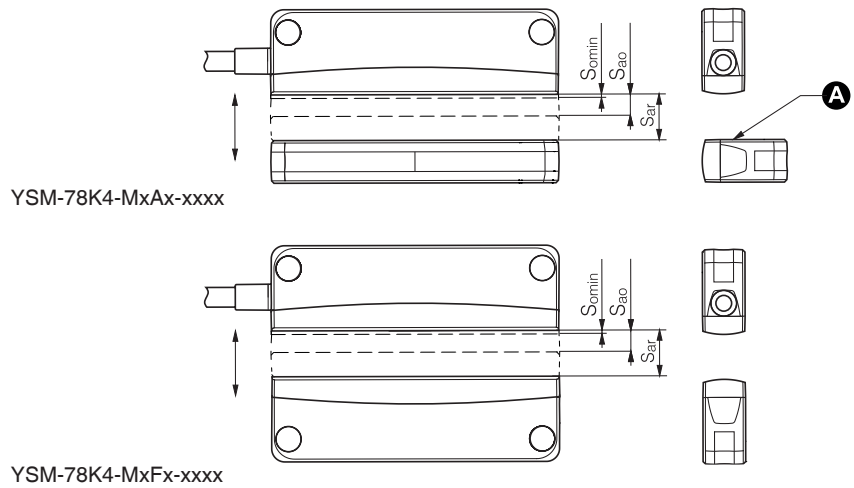


INSTALLATION

YSM-22 SERIES

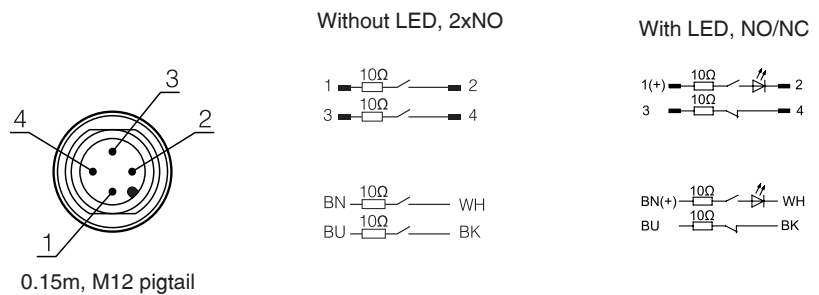


YSM-78 SERIES



A : Active surface marked with ▲

PIN ASSIGNMENT



ASSIGNMENT	FUNCTION	PINS/WIRES ON SENSOR	
		M12	OPEN CABLE
Power supply	24 VDC	1	brown
Power supply	24 VDC	3	blue
Output	NO contact 1 / NO contact	2	white
Output	NO contact 2 / NC contact	4	black