

Twistlock sensor system up to 25 t Model TWLMS



Part of your business

WIKA data sheet FO 54.16

Applications

- Container weighing directly on the spreader
- Determination of the load distribution in the container
- For Reachstacker, Straddle Carrier, Rubber Tired Gantry Crane (RTG), Ship to Shore Cranes (STS)

Special features

- Measuring ranges 0 ... 6 t up to 0 ... 25 t (others possible)
- Relative linearity error $< 0.5 \% F_{nom}$
- Type tested in accordance with OIML R60 (certificate R60/2000-A-NL-18.05) with D175
- Optimal for retrofitting with simple integration into the crane network through CANopen® and CAN SAE J1939 technologies
- High overload capacity, long service life of the measuring spring, large shock and vibration resistance



Twistlock sensor system, model TWLMS

Description

The twistlock sensor system is used for weight measurement on spreaders and, with that, the weighing of containers prior to loading and also the determination of the weight distribution in the container.

The non-measuring twistlocks in the spreader are replaced by the twistlock sensor system (TWLMS). The system consists of the model F9205 twistlock sensor, fully assembled in the factory in the customer-supplied and pre-drilled twistlock, including adjustment and temperature compensation.

The twistlock sensor of this system is made of high-strength, corrosion-resistant 1.4542 stainless steel, whose properties are particularly suitable for the transducer's application area. As output signals, there is a choice of active current output (4 ... 20 mA) and CANopen® and CAN SAE J1939 digital outputs.

Specifications per VDI/VDE/DKD 2638

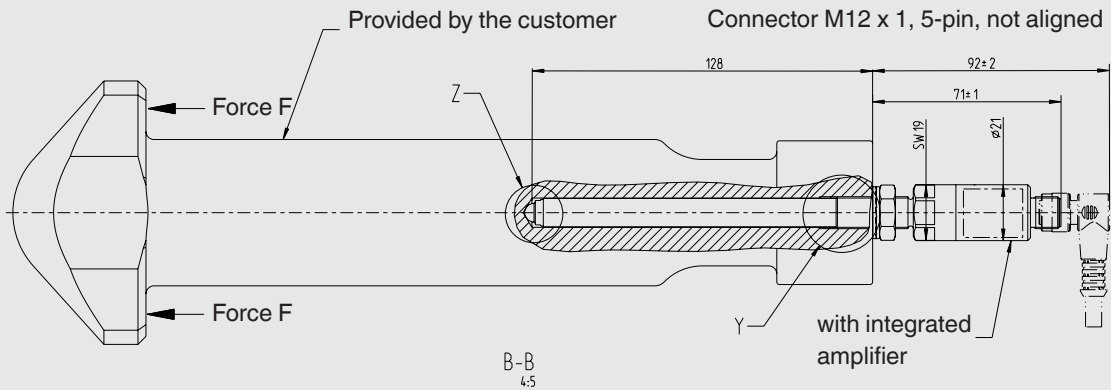
Model TWLMS	
Rated load F_{nom}	up to 25 t (others on request)
Relative linearity error d_{lin}	$\pm 0.5 \% F_{nom}$ (OIML, accuracy class D)
Relative span in unchanged mounting situation b_{rg}	$0.2 \% F_{nom}$
Temperature effect on the zero signal TK_0	$\leq \pm 0.2 \% / 10 K$
Temperature effect on the characteristic value TK_C	$\leq \pm 0.2 \% / 10 K$
Limit force F_L	$150 \% F_{nom}$
Breaking force F_B	depending on twistlock
Rated displacement s_{nom}	$< 0.1 \text{ mm}$
Material of the measuring body	1.4542 stainless steel, ultrasonically tested 3.1 material
Rated temperature range $B_{T, nom}$	$-20 \dots +60 \text{ }^\circ\text{C}$
Service temperature range $B_{T, G}$	$-40 \dots +60 \text{ }^\circ\text{C}$
Storage temperature range $B_{T, S}$	$-40 \dots +60 \text{ }^\circ\text{C}$
Electrical connection	Circular connector M12 x 1, 4-pin / CANopen [®] 5-pin
Output signal (rated characteristic value) C_{nom}	4 ... 20 mA, 3-wire CAN SAE J1939 CANopen ^{®1)}
Supply voltage	DC 10 ... 30 V for current output DC 9 ... 36 V for CANopen [®]
Load	$\leq (U_B - 10 \text{ V}) / 0.024 \text{ A}$ for current output
Response time	$\leq 2 \text{ ms}$ (within 10 % to 90 % F_{nom}) ²⁾
Ingress protection (per IEC/EN 60529)	IP67
Vibration resistance (to DIN EN 60068-2-6) (to DIN EN 60068-2-27) (to DIN EN 60068-2-29)	20 g, 10 ... 2,000 Hz 100 g 40 g
Wiring protection	Reverse polarity, overvoltage and short-circuit resistance
Interference emission	EN 55025
Immunity	EN 45501

1) Protocol in accordance with CiA 301, instrument profile 404, communication service LSS (CiA 305). 2) Other response times possible upon request. CANopen[®] and CiA[®] are registered community trademarks of CAN in Automation e. V.

Dimensions in mm

Standard version with integrated amplifier

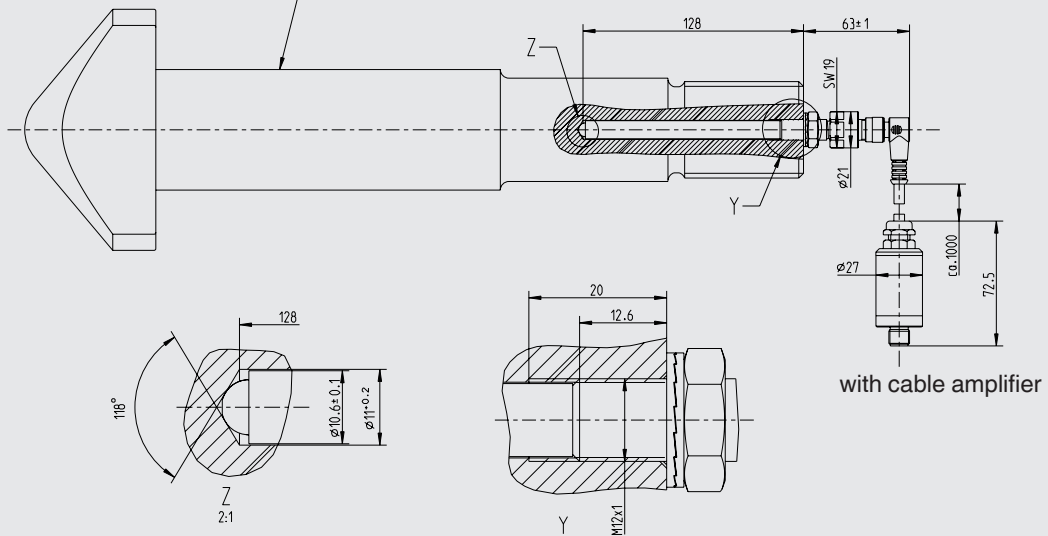
only for CAN SAE J1939 and CANopen®



Compact version with cable amplifier

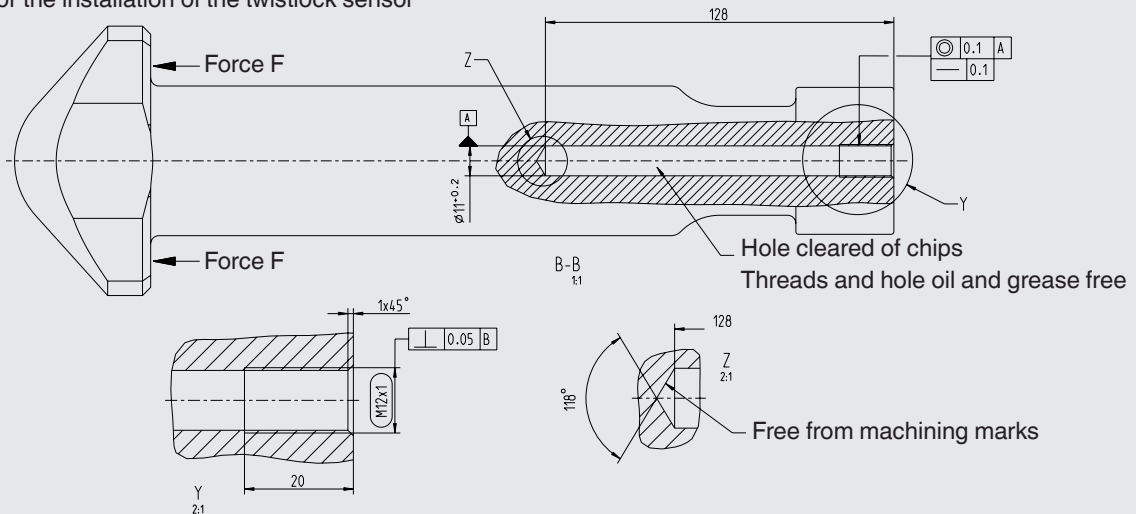
Provided by the customer

Connector M12 x 1, connector not aligned

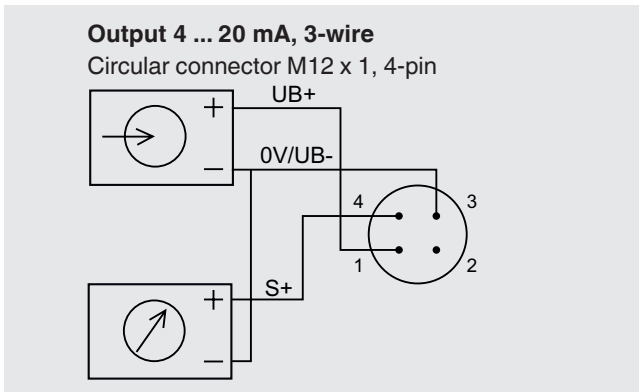


Hole pattern for the twistlock

for the installation of the twistlock sensor



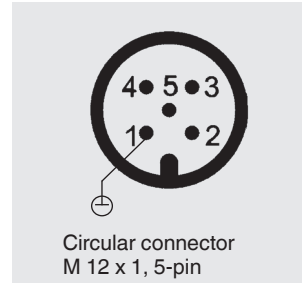
Pin assignment, analogue output



4 ... 20 mA 3-wire	Pin assignment	Cable assignment
Supply UB+	1	Brown
Supply 0V/UB-	3	Blue
Signal S+	4	Black
Signal S-	3	Blue
Shield \oplus	Case	Case

Pin assignment, CANopen®/CAN SAE J1939

Pin assignment	
Shield	1
UB+ (CAN V+)	2
UB- (CAN GND)	3
Bus signal, CAN-High	4
Bus signal, CAN-Low	5



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