

## Thread Friction Sensor M-1902 with Rated Thread Friction Torque of 100 N·m / Rated Screw Head Friction Torque of 100 N·m and Rated Pre-Load of 100 kN



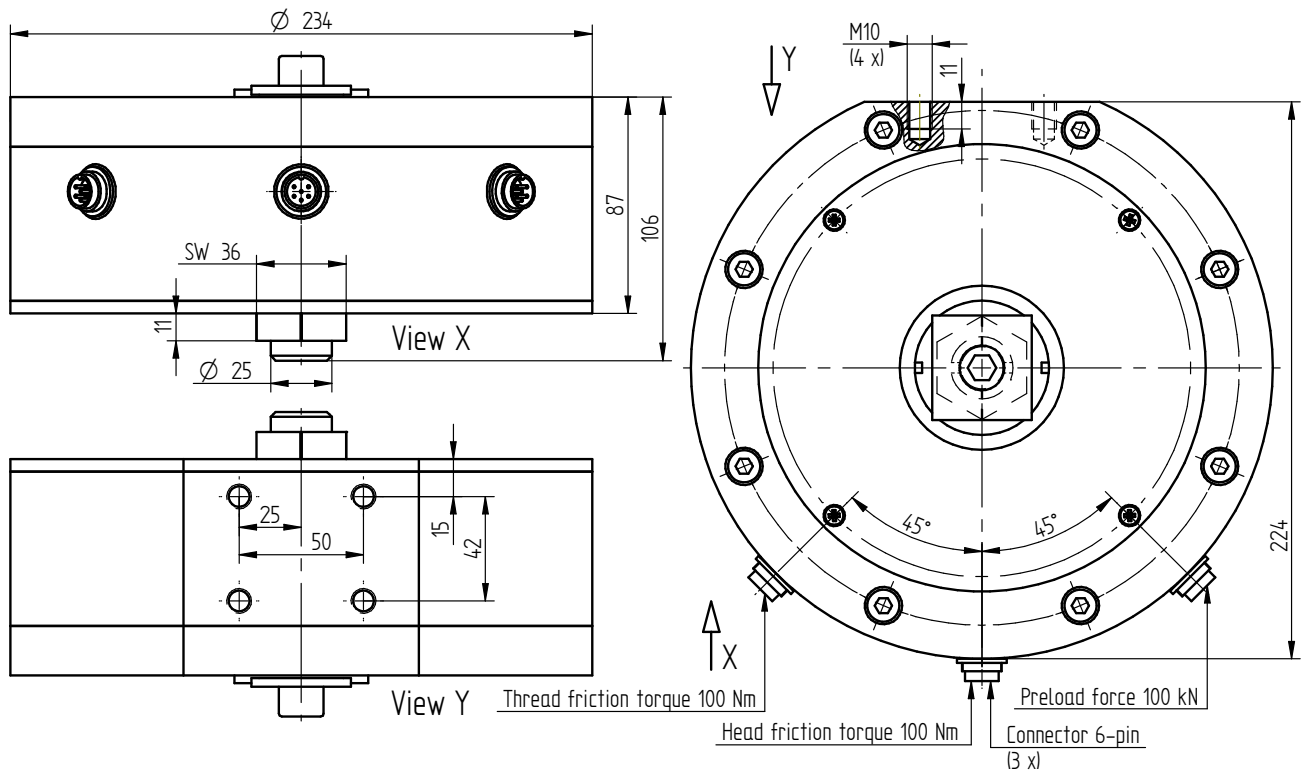
### Performance Features

- Thread friction sensor for measuring of pre-load, friction torque underneath the screw head and thread friction torque
- High torsional stiffness
- Simple handling and assembly
- Special versions on request

### Application

- Assembly technology
- Process measuring and control technology
- Automotive industry
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

## Dimensions in mm



Article-No.	Rated Thread Friction Torque [Nm]	Rated Screw Head Friction Torque [N·m]	Rated Pre-Load [kN]	Weight [kg]
102371	100	100	100	17.0

## Connection Assignment

6-pin	M-1902	Series 723
Pin 1	Excitation (-)	
Pin 2	Excitation (+)	
Pin 3	Shield	
Pin 4	Signal (+)	
Pin 5	Signal (-)	
Pin 6	Control signal (option)	

## Technical Data acc. to VDI/VDE/DKD 2638 and VDI/VDE/DKD 2639

### Thread Friction Sensor M-1902

Rated thread friction torque / Rated screw head friction torque $M_{nom}$	N·m	100
Rated pre-load $F_{nom}$	kN	100
Accuracy class	% F/ $M_{nom}$	0.2
Relative repeatability error in unchanged mounting position $b'$	% F/ $M_{nom}$	±0.1
Rated range of excitation voltage $B_U, nom$	VDC	2 ... 12
Bridge resistance $R_{Br}$ (torque)	Ω	700
Input/output resistance $R_e/R_a$ (force)	Ω	700
Rated characteristic value $C_{nom}$	mV/V	0.5 ±0.2 %
Electrical connection		6-pin series 723 <sup>1</sup>
Reference temperature $T_{ref}$	°C	23
Rated temperature range $B_T, nom$	°C	0 ... 60
Operating temperature range $B_T, G$	°C	-10 ... 70
Storage temperature range $B_T, S$	°C	-30 ... 95
Temperature effect on zero signal $TK_0$	% F/ $M_{nom}$ /10 K	±0.4
Temperature effect on characteristic value $TK_C$	% F/ $M_{nom}$ /10 K	±0.2
Operating load (static)	% F/ $M_{nom}$	130
Limit load (static)	% F/ $M_{nom}$	200
Breaking load (static)	% F/ $M_{nom}$	>400
Permissible oscillation stress	% F/ $M_{nom}$	70 (peak-to-peak)
Material		Stainless steel
Level of protection		IP50

### Area of Application

- Hexagonal screws DIN 931
- Screws with hexagon socket DIN 912
- Cheese head screws with slot DIN 84

Thread	Lengths of screw min. [mm]	Lengths of screw max. [mm]
M6	30	65
M8	35	65
M10	35	65
M12	40	65
M14	40	65
M16	40	65

Other thread sizes, kinds and lengths on request

### Options

Article-No.	Description	
100218	Control signal	100 % $M_{nom}$

<sup>1</sup> Female cable connector in scope of delivery at first delivery

## Calibrations for Thread Friction Torque or Screw Head Friction Torque

Article-No.	Description	
400676	Linearity diagram in accordance to factory standard	25 % steps
400664	Linearity diagram in accordance to factory standard	10 % steps
400961	Proprietary calibration acc. to VDI/VDE 2646	3 steps
400700	Proprietary calibration acc. to VDI/VDE 2646	5 steps
400688	Proprietary calibration acc. to VDI/VDE 2646	8 steps
	DAkkS-Calibration/Standard on request	

## Calibrations for Pre-Load

Article-No.	Description	
400628	Linearity diagram in accordance to factory standard	25 % steps
400170	Linearity diagram in accordance to factory standard	10 % steps
400960	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	3 steps
400652	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	5 steps
400640	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	8 steps
	DAkkS-Calibration/Standard on request	

## Accessories

### Electrical Connection

Article-No.	Description
10301	Female cable connector 6-pin series 581
10315	Female angled connector 6-pin series 682
10266	Connection cable, 3 m, with 6-pin female cable connector series 581 and free strands
10387	Connection cable angled, 3 m, with 6-pin female angled connector series 682 and free strands

### Amplifiers

Examples of suitable amplifiers for the thread friction sensor M-1902:



Further suitable amplifiers you can find on our homepage under <https://www.lorenz-messtechnik.de/english/products/>.