

Thread Friction Sensor M-1983

with Rated Thread Friction Torque of 60 N·m / Rated Screw Head Friction Torque of 60 N·m and Rated Pre-Load of 40 kN



Data sheet



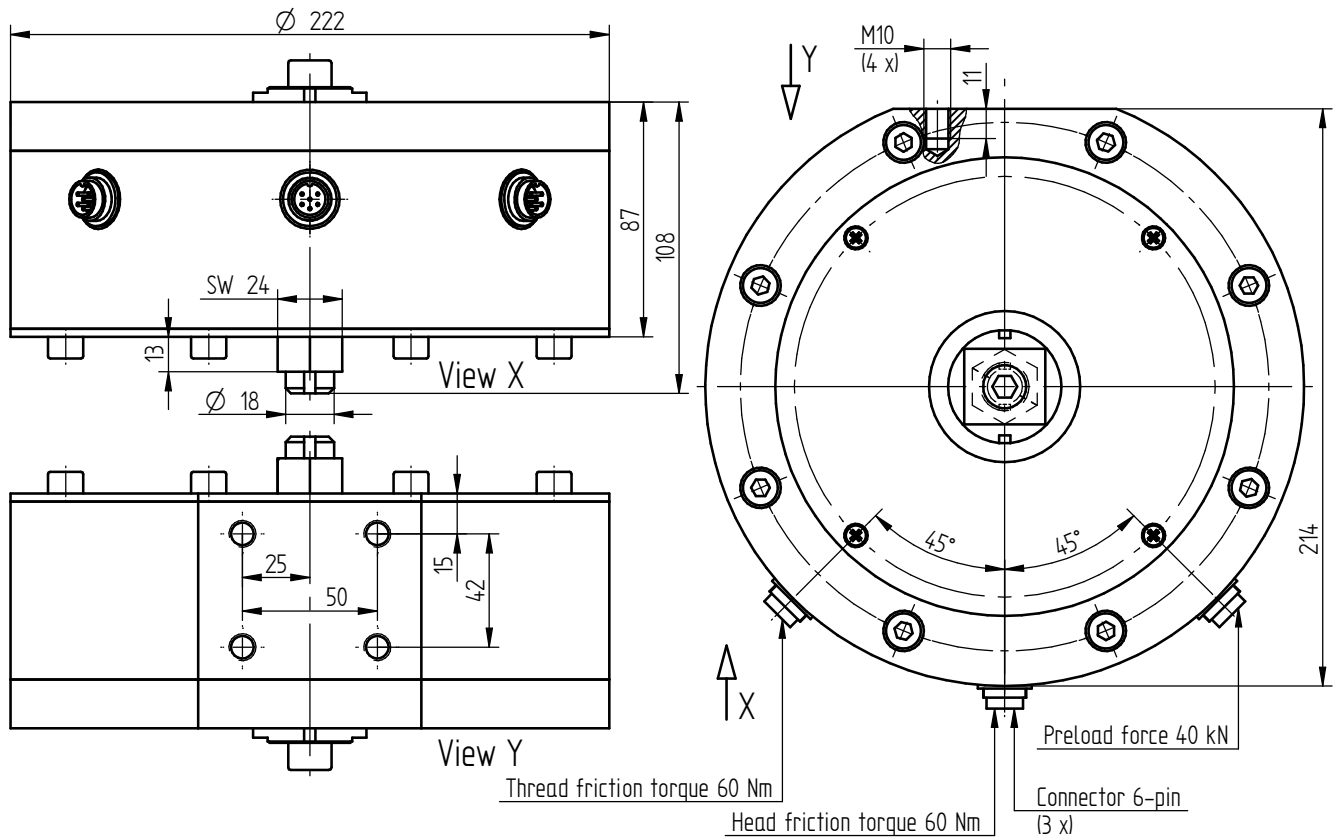
Performance Features

- Thread friction sensor for measuring of pre-load, friction torque underneath the screw head and thread friction torque
- TEDS (Transducer Electronic Data Sheet) Standard IEEE 1451.4 (optional)
- 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 [Nm]	Rated Pre-Load [kN]	Weight [kg]
105275	60	60	40	17.0

Connection Assignment

6-pin	M-1983	Series 723
Pin 1	Excitation (-)	
Pin 2	Excitation (+)	
Pin 3	Shielding	
Pin 4	Signal (+)	
Pin 5	Signal (-)	
Pin 6	Control signal or TEDS (option)	

Thread Friction Sensor M-1983

Rated thread friction torque / Rated screw head friction torque M_{nom}	Nm	60
Rated pre-load F_{nom}	kN	40
Accuracy class	% F/M _{nom}	0.5
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 ±0.5 %
Electrical connection		6-pin series 723 ¹
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 TK₀	% 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	14	65
M8	16	65
M10	18	65

Other thread sizes, kinds and lengths on request

Options

Article-No.	Description	
100218	Control signal	100 % M _{nom}
100739	Control signal	80 % M _{nom}
106154	Control signal	50 % M _{nom}
113134	TEDS-standard IEEE 1451.4	

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
	DAkS-Calibration/Standard on request	

¹ Female cable connector in scope of delivery at first delivery

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-1983:

LCV	GM 78	GM 40	GM 80	SI
				

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