

TD110a $\pm 5, 10, 20, 50$ Nm



Description

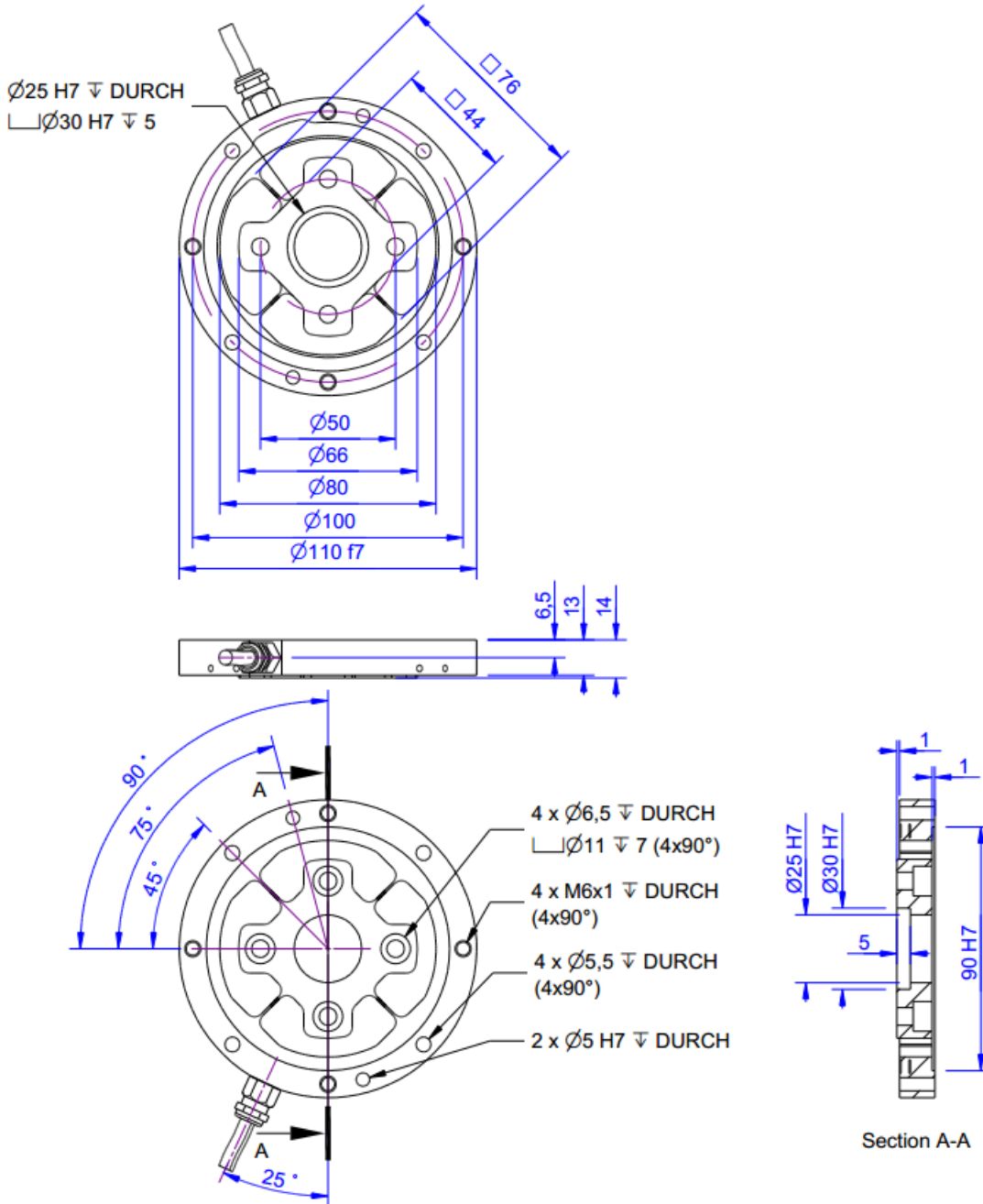
The TD110a torque sensor is suitable for measuring the reaction torque up to a nominal torque of 50Nm. (wired, non-rotating).

The torque sensor consists of an outer flange and an inner flange, which are connected to each other via 4 measuring spokes.

The torque sensor is fastened inside and outside with screws according to DIN912 M6.

The TD110a torque sensor is used both in torque test benches for quality assurance and in production machines. The sensor is available in spring steel.

Dimensions



Technical Data - Version 5 Nm

Electrical Data

Input resistance	700 Ohm
Tolerance input resistance	10 Ohm
Output resistance	700 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V / FS

Precision

Accuracy class	0,1%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	3 m

Temperature

Rated temperature range f	-10 ... 60 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C
Environmental protection	IP65

Basis Data

Type	bending spring
Rated torque	5 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.7 °/FS
Axial force limit	500 N
Lateral force limit	500 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Technical Data - Version 10 Nm

Electrical Data

Input resistance	700 Ohm
Tolerance input resistance	10 Ohm
Output resistance	700 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V / FS

Precision

Accuracy class	0,1%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	3 m

Temperature

Rated temperature range f	-10 ... 60 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C
Environmental protection	IP65

Basis Data

Type	bending spring
Rated torque	10 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.7 °/FS
Axial force limit	500 N
Lateral force limit	500 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Technical Data - Version 20 Nm

Electrical Data

Input resistance	700 Ohm
Tolerance input resistance	10 Ohm
Output resistance	700 Ohm
Tolerance output resistance	10 Ohm
Insulation resistance	5 GOhm
Rated range of excitation voltage f	2.5 ... 5 V
Operating range of excitation voltage f	1 ... 10 V
Zero signal	0.05 mV/V
Rated output	1 mV/V / FS

Precision

Accuracy class	0,1%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	3 m

Temperature

Rated temperature range f	-10 ... 60 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C
Environmental protection	IP65

Basis Data

Type	bending spring
Rated torque	20 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.7 °/FS
Axial force limit	500 N
Lateral force limit	500 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Technical Data - Version 50 Nm

Electrical Data

Input resistance	700	Ohm
Tolerance input resistance	10	Ohm
Output resistance	700	Ohm
Tolerance output resistance	10	Ohm
Insulation resistance	5	GOhm
Rated range of excitation voltage f	2.5 ... 5	V
Operating range of excitation voltage f	1 ... 10	V
Zero signal	0.05	mV/V
Rated output	1	mV/V / FS

Precision

Accuracy class	0,1%
Relative linearity error	0.1 %FS
Relative zero signal hysteresis	0.1 %FS
Temperature effect on zero signal	0.01 %FS/K
Temperature effect on characteristic value	0.01 %RD/K
Relative creep	0.05 %FS

Connection Data

Connection type	4 conductor open
Name of the connection	Unitronic FD CP Plus / 4x0,14
Cable length	3 m

Temperature

Rated temperature range f	-10 ... 60 °C
Operating temperature range f	-10 ... 85 °C
Storage temperature range f	-10 ... 85 °C
Environmental protection	IP65

Basis Data

Type	bending spring
Rated torque	50 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.7 °/FS
Axial force limit	500 N
Lateral force limit	500 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

length	13 mm
Material	Stainless steel

Abbreviation : RD: „Reading“; FS: „Full Scale“;

1) The exact nominal sensitivity is indicated in the test report;



Pin Configuration

Symbol	Description	Wire colour
+Us	positive bridge supply	brown
-Us	negative bridge supply	white
+Ud	positive bridge output	green
-Ud	negative bridge output	yellow

Pressure load: positive output signal.

Shield: transparent.

accessories

Description	Description
 Factory calibration certificate Nm/50/5	Detection of the characteristic value and traceability on DAkkS torque device; 0.025Nm... 50Nm
 Factory calibration certificate Nm/50/5/System	Detection of the characteristic value and traceability on DAkkS torque device; 0.025Nm... 50Nm; incl. calibration, torque sensor + amplifier