

TS110a - Couplemètre statique - $\pm 20\text{Nm}$ à $\pm 200\text{Nm}$



Description

The TS110a torque sensor is suitable for measuring the reaction torque (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 outer flange has 4 threaded holes M6, the inner flange is equipped with 4 flat countersinks for screws M6 DIN912.

The TS110a torque sensor is used both in torque test benches for quality assurance and in production machines.

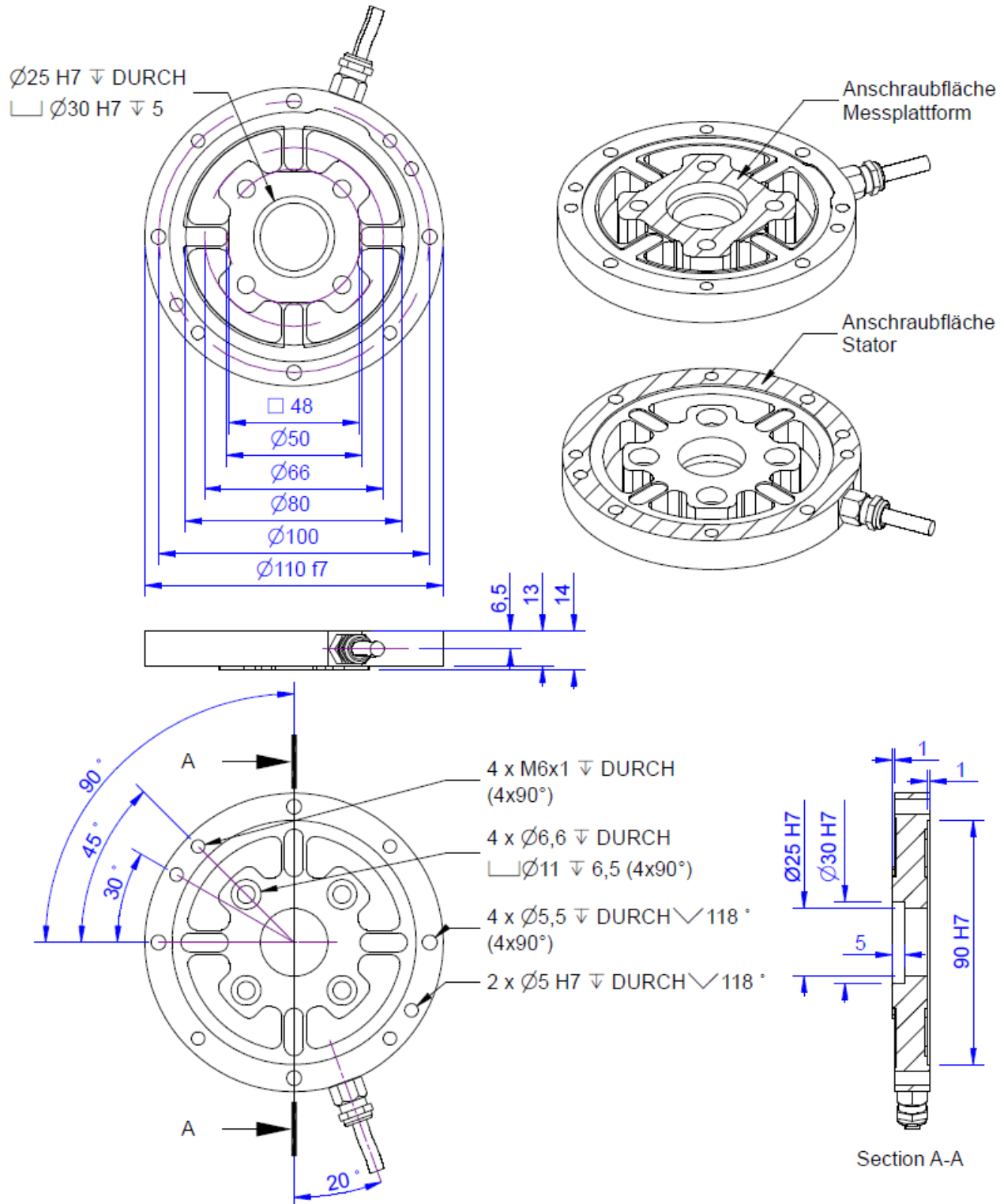
The sensor is made of aluminum (20Nm ... 100 Nm) and in spring steel (50 ... 200 Nm).

Since the torque is transmitted exclusively via adhesion, the inner flange must be mounted from a moment of 100Nm with sufficient static friction.

The use of a (detachable) joint, e.g. Loxeal-8521 or Loctite 630 is recommended.

From a nominal torque of 100Nm, the inner flange is provided with a blasted surface.

Dimensions



Spécifications - TS110a - Version $\pm 20\text{Nm}$ - Aluminium

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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 data

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

Environmental data

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

Basic Data

Type	shear beam
Rated torque	20 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Spécifications - TS110a - Version $\pm 50\text{Nm}$ - Aluminium

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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 data

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

Environmental data

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

Basic Data

Type	shear beam
Rated torque	50 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Spécifications - TS110a - Version $\pm 50\text{Nm}$ - ACIER

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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 data

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

Environmental data

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

Basic Data

Type	shear beam
Rated torque	50 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Spécifications - TS110a - Version $\pm 100\text{Nm}$ - Aluminium

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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 data

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

Environmental data

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

Basic Data

Type	shear beam
Rated torque	100 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Spécifications - TS110a - Version $\pm 100\text{Nm}$ - Acier

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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 data

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

Environmental data

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

Basic Data

Type	shear beam
Rated torque	100 Nm
Bending moment limit	20 Nm
Maximum operating torque	150 %FS
Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

Spécifications - TS110a - Version $\pm 200\text{Nm}$ - Acier

Electrical Data

Input resistance	2000	Ohm
Tolerance input resistance	10	Ohm
Output resistance	2000	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

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Bending moment limit	20 Nm
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Breaking torque	400 %FS
Rated torsion angle	0.02 °/FS
Axial force limit	1000 N
Lateral force limit	1000 N
Torque introduction	pitch circle
Dimension 1	Ø50
drehmomentausleitung	pitch circle
Dimension 2	Ø100
Diameter	110 mm

length	14 mm
Material	Aluminium or 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/200/5	Detection of the characteristic value and traceability on DAkkS torque device; 51Nm... 200Nm
 Factory calibration certificate Nm/200/5/System	Detection of the characteristic value and traceability on DAkkS torque device; 51Nm... 200Nm; incl. calibration, torque sensor + amplifier