

# F2i S

## Torquemeter

with integrated evaluation unit

### Description

The new F2i S torque measurement system represents a further development of the new generation with integrated evaluation unit. With the exception of a 24VDC power supply no external components are required for operation.

A high end temperature compensation guarantees a very good stability and repeatability of the output signals. The standard model is equipped with a one track speed measurement system. The maximum allowable speed is 16,000 rpm.



### Significant technical data

- Bearingless torque flange with IR-signal transmission
- Evaluation unit integrated in stator
- High overload capability
- Active temperature compensation to reduce temperature effect on zero balance
- Accuracy 0.1 (Option 0.05)
- Gear tooth speed encoder 120 ppr
- Magnetic speed encoder 750 ppr (Option)
- Compact design
- Fits to cardan shaft type 587
- Transmission of characteristic values
- Maximum speed 16,000 rpm
- Any torque range up to 10,000 Nm available



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Rated torque $T_r$	Nm	$\leq 10,000$
Overload capability torsional shaft	Nm	$5T_r$
Accuracy including hysteresis and nonlinearity	% F.S.	$< \pm 0.1$
Temperature effect on zero	% F.S./10K	$< \pm 0.1$
Operating temperature range	$^{\circ}\text{C}$	$-10 \dots +80$
Maximum speed	rpm	16,000

# Technical Data Torquemeter Type F2i S

## TORQUEMETER

Rated torque nominal $T_r$	Nm	$\leq 10,000$
Torque limit of torque shaft related to $T_r$	Nm	$> 5T_r$
Maximum speed	rpm	16,000
Nonlinearity and hysteresis related to $T_r$	%	$< \pm 0.1$
Temperature effect on zero per 10K related to $T_r$	%	$< \pm 0.1$
Nominal temperature range	°C	0...+80
Operating temperature range	°C	-10...+80

## OUTPUT SPECIFICATION TORQUE

Frequency output	kHz	$60 \pm 20$
Dynamic response up to	kHz	7
Analog output voltage	V DC	$\pm 10$ ; $\pm 5$ ; 0-10 ; 0-5
Analog output current	mA	0...20 / 4...20
Conversion rate / resolution	MV/s	1,000 with 16bit
Shunt calibration	-	approx. 30% of $T_r$

## OUTPUT SPECIFICATION SPEED

Pulses per rev (gear tooth, 1 track)	ppr	120
Output signal (RS422) frequency	-	1 track
Analog output voltage	V DC	$\pm 10$ ; $\pm 5$ ; 0-10 ; 0-5
Conversion rate / resolution	MV/s	1,000 with 16bit
Required speed	rpm	$> 0$

## ADDITIONAL INTERFACES / FEATURES

Serial interface RS232	Baud	19,200
CAN Bus		CAN2B up to 1 MBit
Status output		additional control line, assignable with status signal
Remote via additional control line		

## MECHANICAL DATA

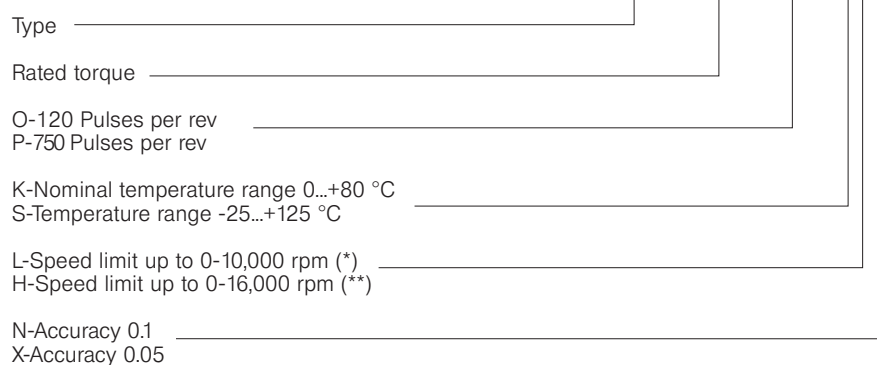
Weight (rotor) at 10,000 Nm	kg	approx. 14
Inertia (rotor) at 10,000 Nm	gm <sup>2</sup>	approx. 84
Twist angle at 10,000 Nm	grad	0.05
Torsional stiffness	kNm/rad	3125
Coupling mass (typ. F2iS - 5000 Nm)	kg	150
Fits to cardan shaft	-	Type 587

## OPTIONS

Nonlinearity and hysteresis related to $T_r$	%	$< \pm 0.05$
Temperature effect on zero per 10K related to $T_r$	%	$< \pm 0.05$
High resolution speed encoder with 750 ppr (2 tracks) up to 10,000 rpm		

## Order Number

F2i S-1000-750-KLN



(\*)=with 750 ppr speed encoder  
(\*\*)=with 120 ppr gear tooth

## Installation Example

This application example shows the compact torque measuring system directly mounted to the dynamometer. Up to the torque limit ( $T_r$ ) all ranges are covered by identical flange dimensions.

