

F1i SL

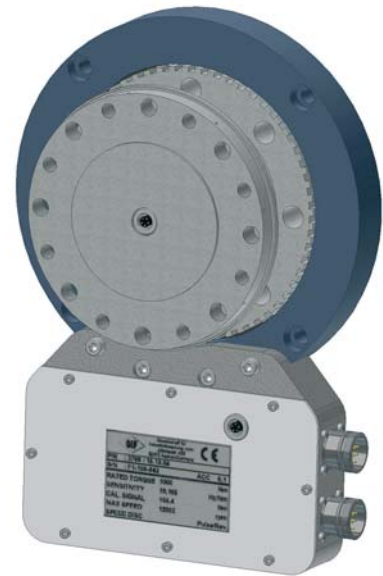
Torquemeter

with integrated evaluation unit

Description

The new F1i SL 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 state of the art 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 10,000 rpm.



Significant technical data

- Bearingless torque flange with IR-signal transmission
- High overload capability
- Active temperature compensation to reduce temperature effect on zero balance
- Accuracy 0.2
- Gear tooth speed encoder 60 ppr
- Magnetic speed encoder 1,024 ppr (Option)
- Compact design
- Fits to cardan shaft types 228 and 587
- Transmission of characteristic values
- Maximum speed 10,000 rpm
- Torque range 500/1,000/2,000/3,000 Nm

Rated torque T_r	Nm	$\leq 3,000$
Overload capability torsional shaft	Nm	$5T_r$
Accuracy including hysteresis and nonlinearity	% F.S.	$< \pm 0.2$
Temperature effect on zero	% F.S./10K	± 0.2
Operating temperature range	$^{\circ}\text{C}$	10...+70
Maximum speed	rpm	10,000



GESELLSCHAFT FÜR INDUSTRIEFORSCHUNG MBH

Konrad-Zuse-Str. 3
D - 52477 Alsdorf / Germany
Tel.: +49 (0)2404-9870-570
Fax: +49 (0)2404-9870-59
www.gif.net
info@gif.net
info-de@gif.net

Technical Data Torquemeter Type F1i SL

TORQUEMETER

Rated torque nominal T_r	Nm	$\leq 3,000$
Torque limit of torque shaft related to T_r	Nm	$> 5T_r$
Maximum speed	rpm	10,000
Nonlinearity and hysteresis related to T_r	%	$< \pm 0.2$
Temperature effect on zero per 10K related to T_r	%	$< \pm 0.2$
Nominal temperature range	°C	10...+70
Operating temperature range	°C	-10...+80

OUTPUT SPECIFICATION TORQUE

Frequency output (RS422)	kHz	60 ± 20
Dynamic response up to	Hz	1,000
Shunt calibration	-	approx. 30% of T_r

OUTPUT SPECIFICATION SPEED

Pulses per rev (gear tooth, 1 track)	ppr	60
Output signal (RS422) frequency	-	1 track
Required speed	rpm	> 0

MECHANICAL DATA

Weight (rotor) at 2,500 Nm	kg	approx. 5.0
Inertia (rotor) at 2,500 Nm	gm ²	approx. 12.5
Twist angle at 2,500 Nm	grad	0.04
Torsional stiffness	kNm/rad	1,979
Coupling mass (typ.)	kg	17
Fits to cardan shafts	-	Type 228 and 587

OPTIONS

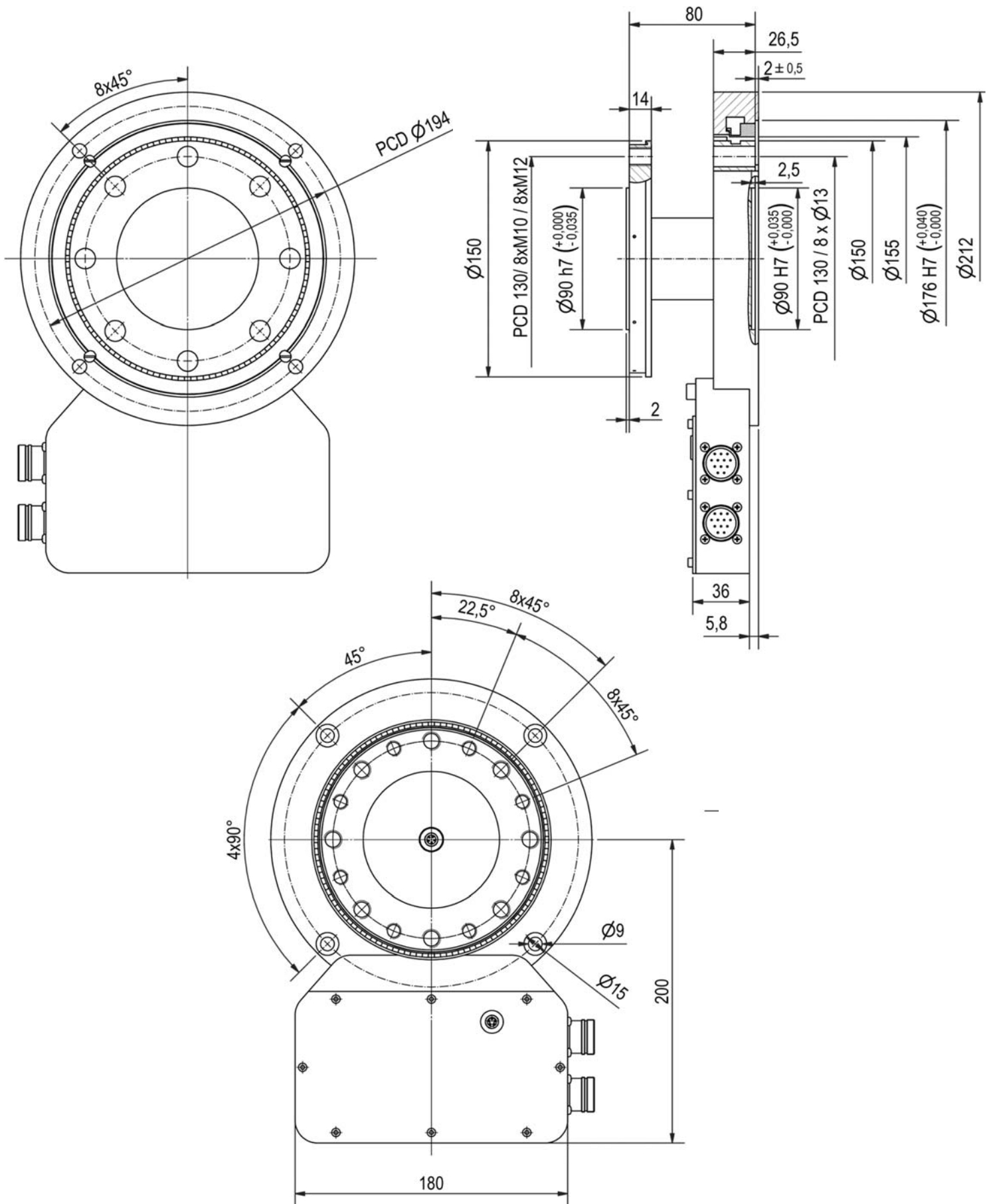
High resolution speed encoder with 1,024 ppr (2 tracks) up to 10,000 rpm

Order Number

F1i SL-1000-60

Type _____
 Rated torque _____
 O-60 Pulses per rev _____
 P-1,024 Pulses per rev _____

Dimensions Torquemeter Type F1i SL



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.

