

# Technical data

## ■ Mechanical, electrical specifications

Linearity, hysteresis	<0,2% v.E.
Option linearity, hysteresis	<0,1% v.E.
Rupture torque	> 4 x rated torque
Classification according to DIN 51 309	0.2% (related to measured signal) up from 20% of rated torque
Cutoff frequency	1 kHz
Standard torque output signal	± 5,0 V at rated torque (Option ± 10V)
Option output frequency	
Output frequency at 0-Torque	100 kHz
Output frequency at pos.-nom. torque	140 kHz, 16-30 V, (max)
Output frequency at neg.-nom. torque	60 kHz, 16-30 V, (max)
alternatively push pull TTL output is available	
Load resistance	> 10 kΩ
Rated temperature range	+10 °C...+60 °C
Operating temperature range	0 °C...+70 °C
Storage temperature range	-25 °C...+80 °C
Temperature influence on zero signal	0.05% / 10K
Temperature influence on sensitivity	0.1% / 10K
Torque control signal (shunt calibration)	100 % ± 0,2 %
Calibration input (for shunt calibration)	„on“ > 3 V (max. 30 V) / „off“ < 1,5 V
Excitation	16...30 VDC
Supply current	200 mA
Protection class	IP 54
Air gap rotor and stator	1.5 mm
Smoothness of the mating flange	0.01 mm
Radial eccentricity tolerance of the mating flange	0.02 mm

## ■ Gear test rig



## ■ Example for order specification

(nominal torque: 2000 Nm)  
0125 DF 2000 - 12 733

## ■ Accessories

excitation- and evaluation unit:  
VA 3600, acc. data sheet 4160

installation-set for  
easy 19" rack mounting

connection cable, 5 meter length:  
article-no. 7203

## ■ Scope of delivery

- torque sensor with shrink disk
- mating connector (article-no. 703)
- Certificate of performance
- manual

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Schlenker Enterprises, Ltd.



**STAMOSENS®**  
**0125 DF**

Torque transducer sensor

The specialist for test rig technology

# STAMOSENS® Type DF

## Introduction

The special design of **DF-torque sensor** makes it very suitable for many test rig applications. Test bed for engines, dynamometer, wheel load simulation, gear boxes and pumps are only a few possibilities.

## General

The rotor of the torque sensor is fixed by means of a shrink disc (part of delivery) to the shaft arrangement. The stator is moved over the rotor and held by a support (part of delivery). All other parts will be mounted directly to the measuring side of the sensor. There are no additional adapters necessary.

## Special features

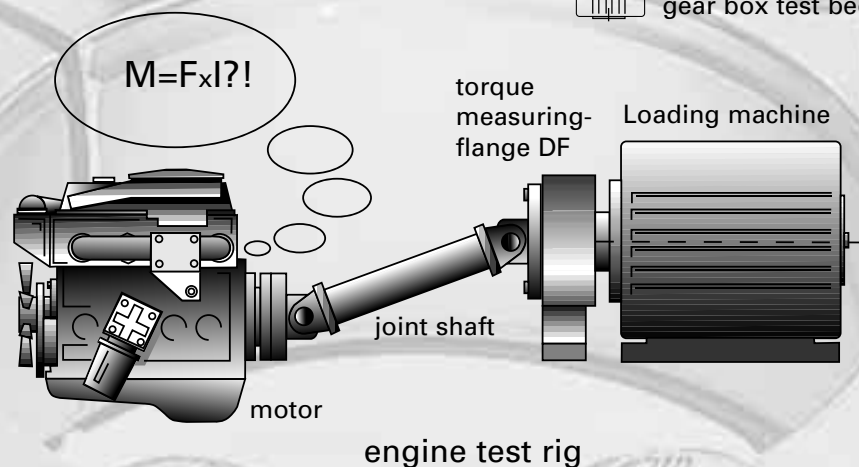
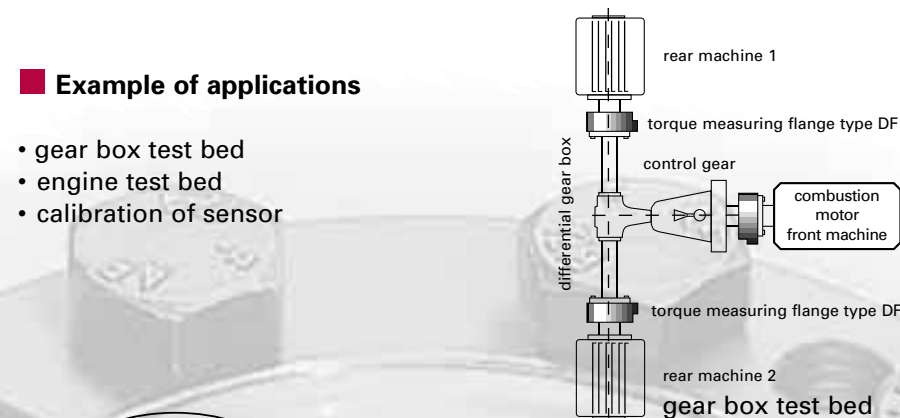
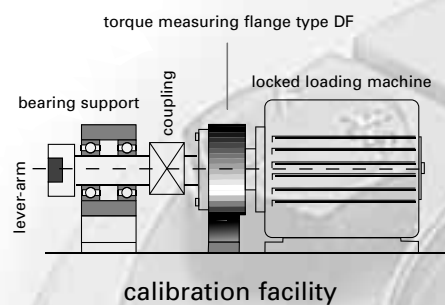
- Strain gage principle
- Non-contact digitally signal transmission
- high accuracy
- $\pm 5$  V output signal of nominal range
- electric calibration of sensor
- no bearings, maintenance-free
- short and stiff design
- simple excitation, 24 VDC
- CE-permission
- traceable calibrated
- Option: -Speed signal (N)  
-Frequency output (F)



STAMOSENS®  
Type DF for universal joint shaft

## Example of applications

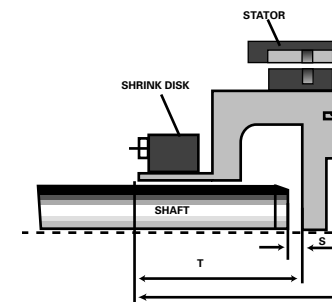
- gear box test bed
- engine test bed
- calibration of sensor



## Technical data and advices

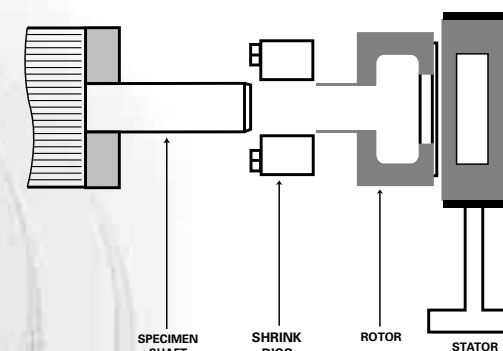
Size	1		2		3		4		
Nominal torque: <b>(Nm)</b>	100	200	500	1000	1000	2000	4000	10000	20000
Admissible max. torque: (limited by mounting devices) <b>(Nm)</b>	200	450	1200	2000	2000	4000	7000	20000	40000
Max. speed: <b>(rpm)</b> (balanced by $Q=6,3$ degree)	12000	12000	9000	9000	9000	9000	9000	4000	4000
Spring rate (C) (Nm/rad):	$2 \cdot 10^5$	$4 \cdot 10^5$	$1,2 \cdot 10^6$	$2,6 \cdot 10^6$	$2,8 \cdot 10^6$	$4,5 \cdot 10^6$	$11 \cdot 10^6$	$55 \cdot 10^6$	$90 \cdot 10^6$
Weight <b>(kg)</b> without shrink disc	4,2	4,2	6,5	6,8	7	7,5	8	21	21,5
Weight shrink disc <b>(kg)</b>	0,9	0,9	1,1	1,1	2	2	4,2	20	26
Moment of Inertia <b>(kgm<sup>2</sup>)</b> incl. shrink disc	0,011	0,011	0,024	0,026	0,035	0,038	0,046	0,6	0,7
Art. no	12494	12561	12630	17670	12729	12733	12763	12736	12784

## Effective dimensions

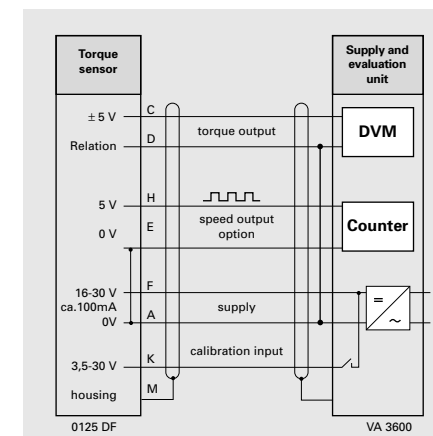


The total length of torque sensor  
 $L - T + S$  (safety)  
Example: 1000 Nm  
 $120 - 88 + 3$  (mm) = 35 mm only!

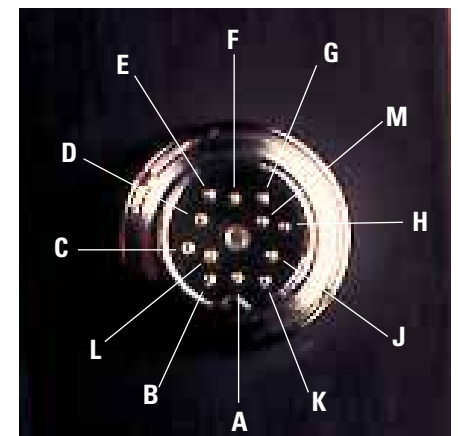
## Mounting



## Pin connection



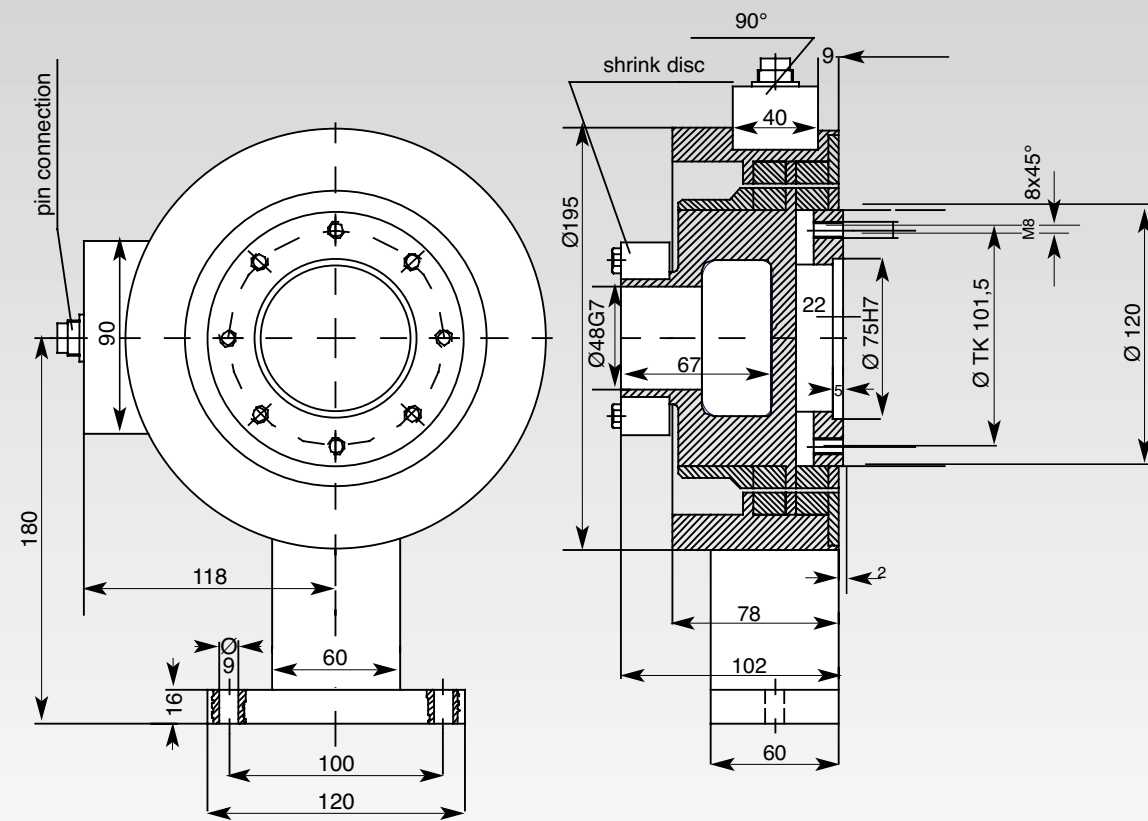
## Top view built-in plug



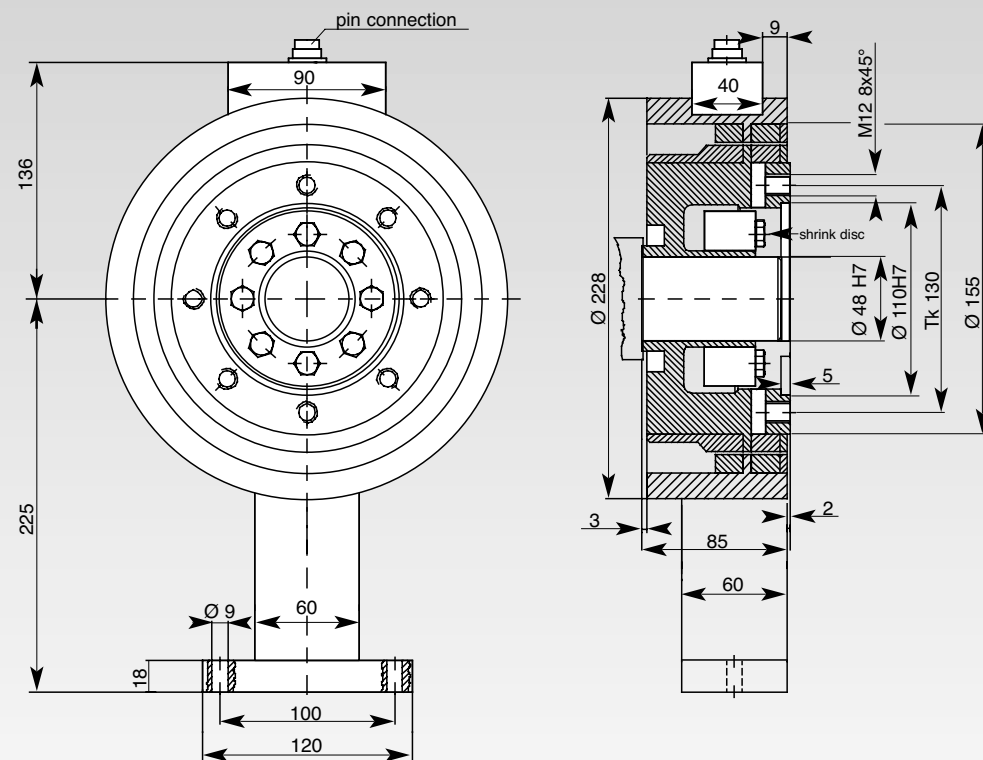
Function	Pin	Description
Supply	A	GND relating to $+U_b$
	B	NC
Torque output, analog	C	$U_b$ $\pm 5V$ for rated torque to $>2k\Omega$ $+5V$ for calibration result $R_i=10\Omega$ , output short circuit protected to GND
Option: frequency output	D	GND relating to $+U_b$
Supply	E	GND relating to Cal-/speed output
Supply	F	$+U_b$ $+16V...+30V$ , ca. 200 mA
	G	NC
Option speed	H	N 60 pulses / turn
	J	NC open collector output
Electric calibration	K	Cal OFF: 0V...2V ON: 3,5V...30V Input resistance: 10k $\Omega$
	L	NC
Shield	M	in sensor to housing

# Dimensions

size 1: 100 Nm; 200 Nm

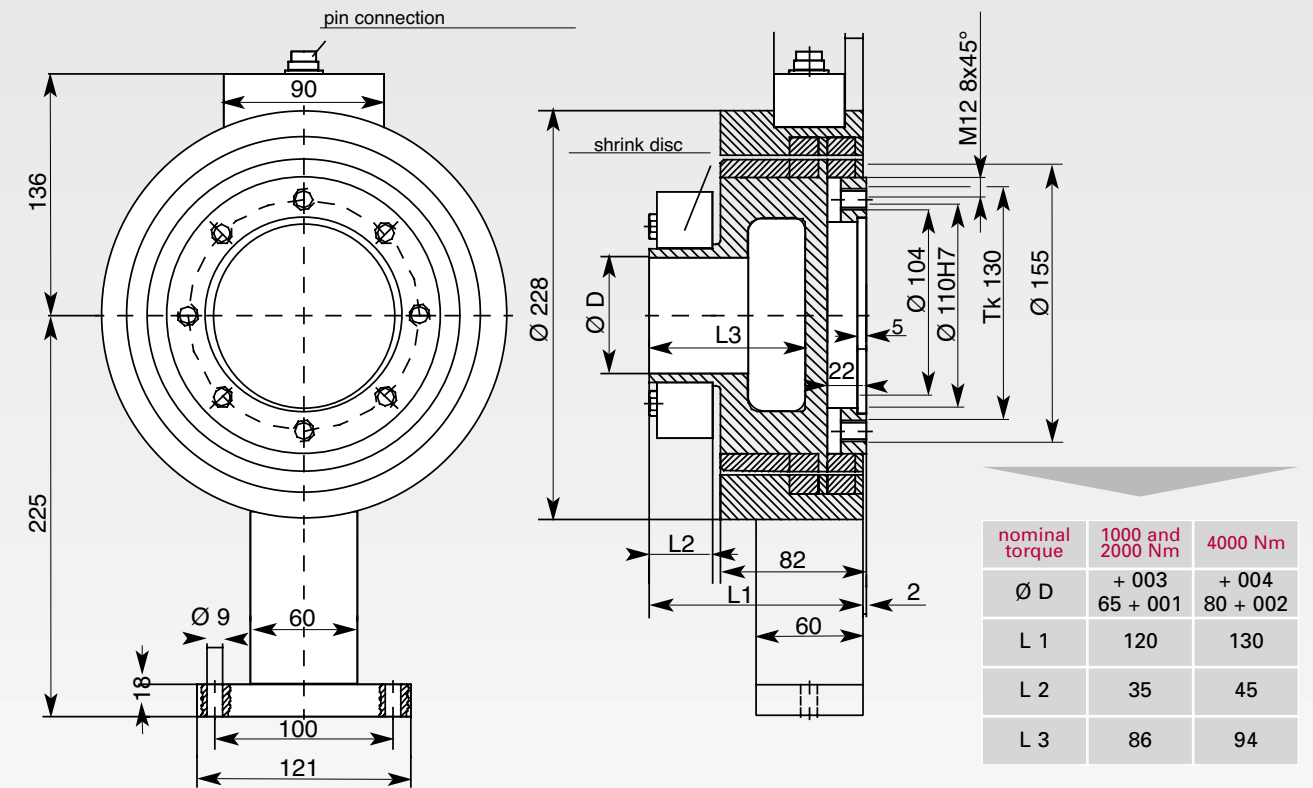


size 2: 500 Nm; 1000 Nm



# Dimensions

size 3: 1000 Nm; 2000 Nm; 4000 Nm



size 4: 10000 Nm; 20000 Nm

