

## Datasheet

### Torque Sensor

# DRFN

torque ranges from 1 Nm up to 10.000 Nm  
square drive  
and either with or without angle function



### Features DRFN

- No service needed because of contactless data acquisition
- High noise immunity due to amplified active signal
- High accuracy due to frequency modulation and strain gage technology
- Single power supply
- Optional angle detection
- integrated sensor-detection chip for use with GMV2 analyzer

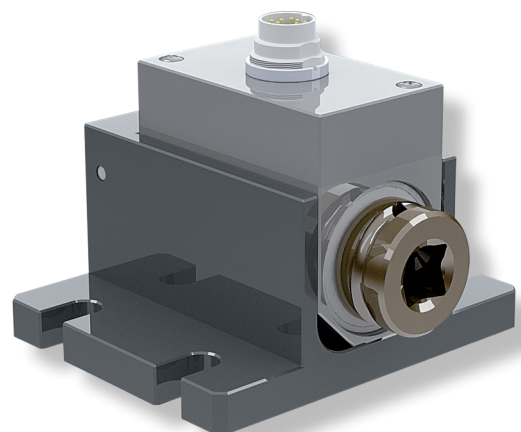
**suitable for**  
automotive industry  
test benches  
assembly applications  
pulsed tools

The sensor is suited for the most varied measurement duties on threaded fasteners, to check and adjust assembly tools, like screwdrivers and spanners, and to sense loosening torques, etc. It can also be deployed in blocked mode to test torque wrenches. The device is powered wirelessly and the

electrical output is wireless, as well. Hence, there is practically no wear on the device. This sensor is suited for cyclical as well as continuous testing of tools. As the sensor is designed to be torsionally rigid any errors due to it are minimized.

### Models / Fittings

Static retainer / clamping device for torque wrenches



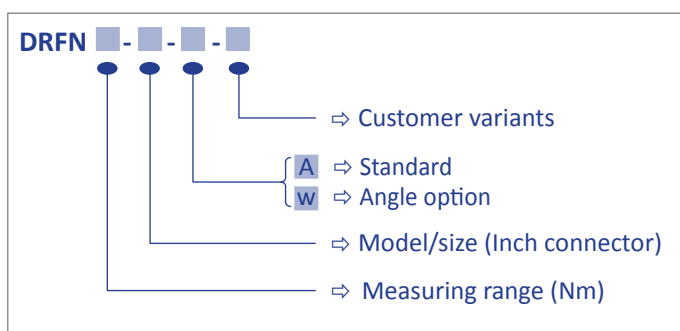
## Electrical Specifications DRFN

Supply voltage:	12 V DC $\pm$ 10 %
Current consumption:	< 200 mA
Rise time 10-90 %:	1 ms (1 kHz)
Voltage output:	0 to $\pm$ 5 V
Internal resistance:	100 $\Omega$
Ripple:	< 100 mVpp
Nonlinearity:	< 0,15 %
Hysteresis:	< 0,1 %
Deviation at zero point:	$\leq \pm$ 100 mV
Operating temperature:	0 - 60 °C
Compensated temperature range:	5 - 45 °C
Temperature error	
Zero point:	0,02 % / K
Sensitivity	0,01 % / K
Mechanical overload:	see table
Internal protection:	IP40
Connection:	12pin-connector (circular connector series 680)
Factory certificate for clockwise torque in 25% steps is also supplied. (Other calibrations available on request!)	

Angle Option (w)	
Max. rev.:	3000 min <sup>-1</sup>
Output:	open-collector
Internal pull up:	10 k $\Omega$ (5 V level)
External pull up:	24 V max.
I <sub>max</sub> :	20 mA
Pulses / rev.:	360
Resolution:	1°

Detection of direction of rotation:
2 pulses 90° phase shift
Channel A leading for clockwise rotation of drive end

## Ordering Code

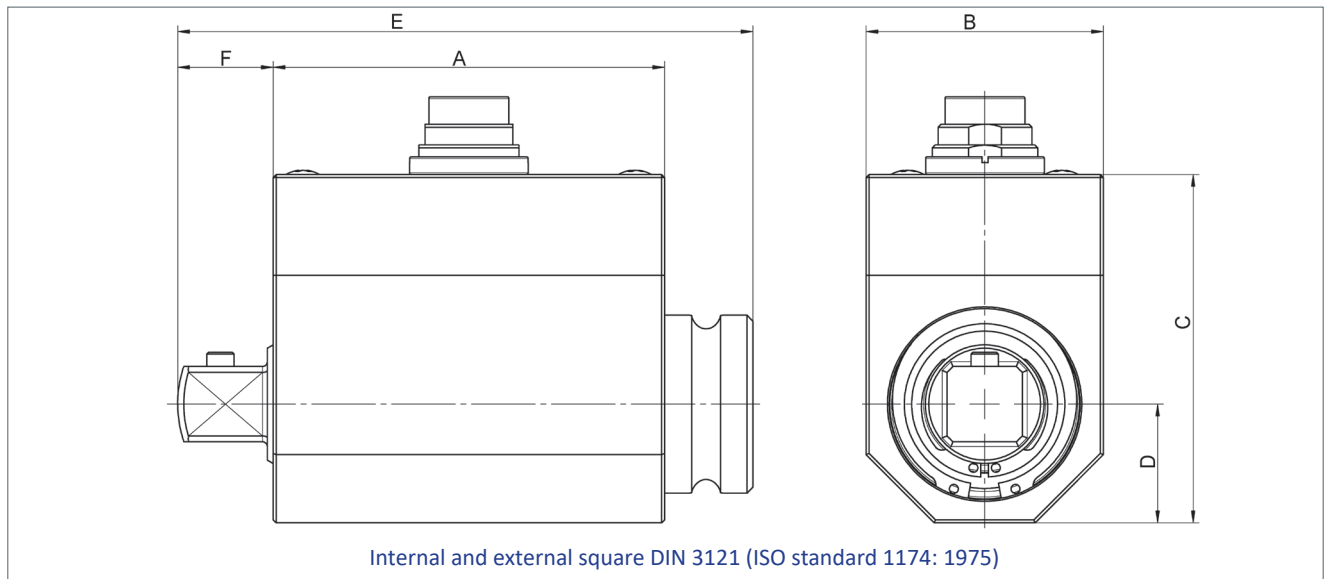


## Accessories

Analyzer: ValueMaster<sub>base</sub>  
GMV2

Cables  
Static holders (SH)

## Mechanical Dimensions DRFN

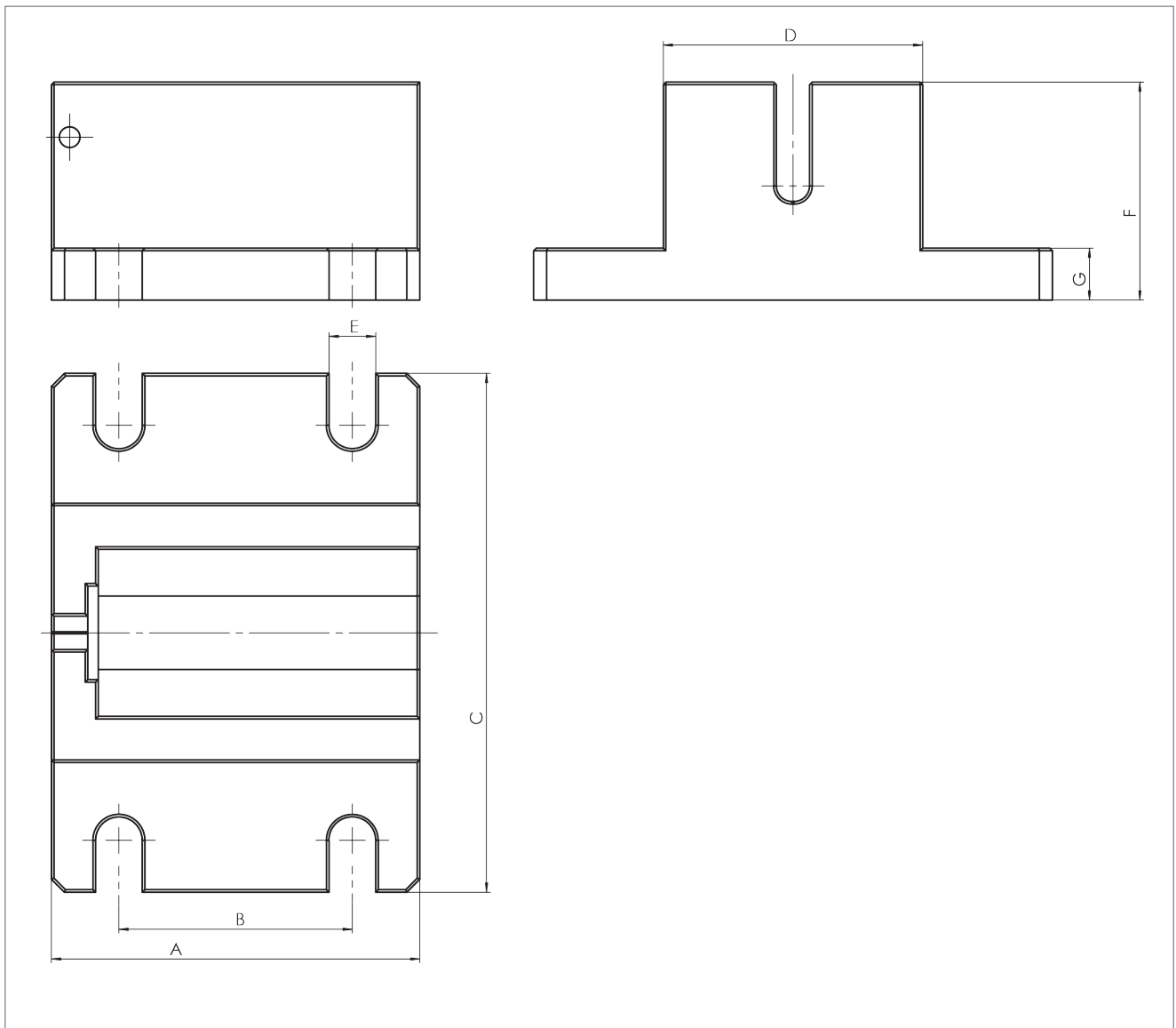


## Mechanical values and load limits DRFN

Size (inch)	n <sub>max</sub> (l/min)	Torque range (±0 - ... Nm)	Overload (%)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Weight approx (g)	
1/4"	12.000	1   2   5   10   12   15 20	100 70 30	62	32	56	16	77	8	300	
3/8"	12.000	20   30   50   63	100 80	62	34	52	16,5	82	12	350	
1/2"	12.000	100 160 200	100 60 30	66	40	57	20	95	16	480	
3/4"	12.000	200   300   500	100 50	66	46	65	23	110	24	800	
1"	12.000	1000 2000	50 30	66	52	71	25,5	127	31	1250	
1 1/2"	7000	2000   3000     4000   5000     6500   10.000	100 50	86	92	108	46	178	44	4800	
with rotation angle measurement	1/4"-w	12.000	1   2   5   10 12   15   20	100 80 50 30	66	32	51	16	82	9	250
	3/8"-w	12.000	20   30   50   63	100 80	66	40	59	20	90	12	400
	1/2"-w	12.000	100 160 200	100 60 30	66	40	59	20	97	16	480
	3/4"-w	11.500	200   300   500	100 50	71	55	74	27,5	117	24	1050
	1"-w	11.500	1000	50	72	56	73	28	132	30,5	1250
	1 1/2"-w	7.000	2000   3000     4000   5000     6500   10.000	100 50	86	92	108	46	178	44	4800

General tolerances DIN 2768-m

## Mechanical Dimensions DRFN Static Holder (SH)



Model	A	B	C	D	E	F	G
SH-DRFN ¼"	71	45	100	50	9	42	10
SH-DRFN ⅜"	74	45	100	50	9	45	10
SH-DRFN ½"	82	45	100	50	9	50	10
SH-DRFN ¼"-w	76	45	100	50	9	43	10
SH-DRFN ⅜"-w	78	45	100	50	9	45	10
SH-DRFN ½"-w	82	45	100	50	9	50	10

The static retainer (SH) is available on customer request for models DRFN ¼", 1", ½" and DRFN ¼"-w, 1"-w, ½"-w.

## Ordering Code Static Holder

