

RT12E HIGH CAPACITY ROTARY TRANSFORMER TORQUE TRANSDUCER (US & METRIC)

FEATURES & BENEFITS

- 2x overload rating
- Performance to 0.07%
- Bidirectional operation including stall
- Ferrite-free rotary transformer coupling
- Calibration & balance free of cable effects
- Unexcelled immunity to machinery magnetic fields
- 15-5 PH stainless shaft, splash proof & corrosion resistant
- Noise hardening

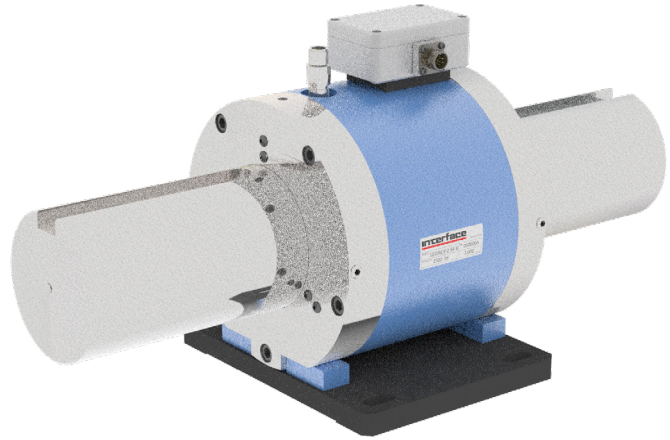
OPTIONS

- On-board Signal Conditioning**
- Digital Output-RS232**
- Enhanced Performance
- Foot Mount (shown in photo)
- Standard & Zero Velocity Speed Pickups
- Flange Style Mount

ACCESSORIES

- Interconnect Cables
 - Digital Readout (9850)
- *Please call for additional information*
*** Please consult factory for specifications*

STANDARD CONFIGURATION



MODEL RT12E (Shown)

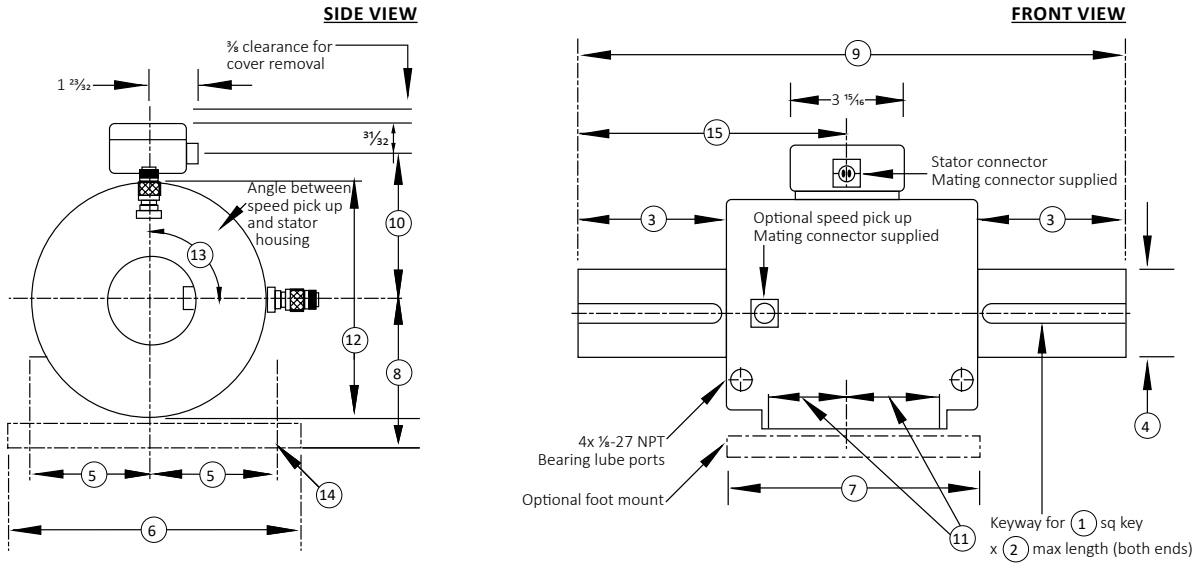
9850 MULTI-CHANNEL SIGNAL CONDITIONER DISPLAY AND CONTROLLER

- AC carrier excitation
- 2000 samples/sec/channel
- Works with Torque transducers, load cells, encoders, LVDTs and speed pickups
- 7-pole 200 Hz antialias filter plus 4-pole digital filters
- RS232, RS422, RS485 serial communication
- Torque, speed, and HP display
- Max/min capture
- Two-line backlit LCD display



***To excite and display Torque only, use model 9850. To excite and display Torque, Speed and HP, use model 9850.**

RT12E HIGH CAPACITY ROTARY TRANSFORMER TORQUE TRANSDUCER (US & METRIC)



DIMENSIONS

See Drawing	CAPACITY													
	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)	US (lbf-in)	Metric (Nm)
	25, 100	2.82, 11.3	500	56.5	1K, 2K	113, 226	5K, 10K	565, 1.13K	20K, 40K	2.26K, 4.52K	50K, 100K	5.65K, 11.3K	200K, 375K	22.6K, 42.4K
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
(1)	0.187	4.75	0.187	4.75	0.250	6.35	0.375	9.53	0.625	15.88	0.750	19.05	1.000	25.40
(2)	1.125	28.58	1.625	41.28	1.750	44.45	2.750	69.85	3.500	88.90	4.500	114.30	6.500	165.1
(3)	1.50	38.1	2.00	50.8	2.00	50.8	3.38	85.7	4.13	104.9	5.13	130.30	7.56	192.0
(4)	0.625	15.88	0.750	19.05	1.000	25.40	1.500	38.1	2.500	63.50	3.000	76.20	4.500	114.30
(5)	2.25	57.2	2.25	57.2	2.625	66.68	2.625	66.68	4.25	108.0	4.25	108.0	4.25	108.0
(6)	5.50	139.7	5.50	139.7	6.25	158.8	6.25	158.8	10.00	254.0	10.00	254.0	10.00	254.0
(7)	5.50	139.7	5.50	139.7	7.00	177.8	7.00	177.8	8.75	222.3	8.75	222.3	7.75	196.9
(8)	2.250	57.15	2.250	57.15	2.500	63.50	2.500	63.50	5.000	127.00	5.000	127.00	5.000	127.00
(9)	8.50	215.9	9.50	241.3	10.00	254.0	12.75	323.9	17.00	431.8	19.00	482.6	23.00	584.2
(10)	2.563	65.09	2.563	65.09	2.969	75.41	2.969	75.41	4.875	123.85	4.875	123.83	5.125	130.18
(11)	1.500	38.10	1.500	38.10	1.500	38.10	1.500	38.10	2.813	71.45	2.813	71.45	2.813	71.45
(12)	3.469	88.11	3.469	88.11	4.219	107.16	4.219	107.16	7.938	201.63	7.938	201.63	8.500	215.9
(13)	90°		90°		90°		90°		0°		0°		0°	
(14)	0.406	10.31	0.406	10.31	0.406	10.31	0.406	10.31	Note 2		Note 2		Note 2	
(15)	4.250	107.95	4.750	120.65	5.000	127.00	6.375	161.93	9.500	241.30	9.500	241.30	12.844	326.24

NOTES

- Tolerance on (1) diameter is +0.0000/-0.0005 for diameters ≤ 2.500 inch and +0.000/-0.001 for diameter ≥ 2.5 inch.
- Slotted 0.531 inch (13.49 mm) wide by 1.125 inch (28.58 mm) long.
- Dual rectangular keyways at each end are 2.000 inch (50.80 mm) wide by 1.50 inch (38.10 mm) high
- Dual rectangular keyways at each end are 2.500 inch (63.50 mm) wide by 1.50 inch (44.45 mm) high

Datasheet Model RT12E High Cap Rotary v1.10 03-27-2018

RT12E HIGH CAPACITY ROTARY TRANSFORMER TORQUE TRANSDUCER (US & METRIC)

SPECIFICATIONS

		STANDARD	ENHANCED
ACCURACY – (MAX ERROR)			
Combined Error – %FS		± 0.1	±0.07
Nonlinearity – %FS		± 0.1	≤ ±0.05
Hysteresis – %FS		± 0.1	±0.05
Non-repeatability – %RO		± 0.05	±0.02
Stability, 6 Months – %FS		± 0.15	±0.10
Rotational Effect on Zero – %FS		±0.05	±0.02
TEMPERATURE			
Effect on Zero – %FS / °F		±0.002	0.001
Span – % / °F		±0.002	±0.001
Compensated Range	°F	+75 to +175	
	°C	+23.89 to +79.44	
Minimum Usable Range	°F	-25 to +185	
	°C	-31.67 to +85	
Storage Range	°F	-65 to +225	
	°C	-53.89 to +107.22	
ELECTRICAL (Fully bi-directional, dual output with common characteristics, as follows)			
Clockwise (CW) Torque – mV/V		+1.5	
Counterclockwise (CCW) Torque – mV/V		-1.5	
Zero Balance – % of FS		±1 nominal	
Excitation (MAX) – Vrms – kHz ± %		3-6, 3 ±10 sine wave only	
Readout		Strain gage carrier amplifier	

*Specifications apply to mV/V models only. When selecting the ON-BOARD SIGNAL CONDITIONING or DIGITAL OUTPUT options please contact factory for specifications details.

TORQUE RANGE		SPEED RATING	SHAFT STIFFNESS*		ROTATING INTERIA		MAX WEIGHT	
lbf-in	Nm	rpm	lbf-in/radian	Nm/radian	ozf-in sec ²	Nm sec ²	lbs	kg
25	2.82	0 to ±15,000	2.15x10 ³	2.43x10 ²	0.034	0.00024	6	2.72
50	5.65	0 to ±15,000	6.03x10 ³	6.82x10 ²	0.034	0.00024	6	2.72
100	11.3	0 to ±15,000	14.7x10 ³	1.66x10 ³	0.034	0.00024	6	2.72
200	22.6	0 to ±15,000	18.9x10 ³	2.14x10 ³	0.034	0.00024	6	2.72
500	56.5	0 to ±15,000	5.79x10 ⁴	6.54x10 ³	0.035	0.00025	7	3.18
1K	113	0 to ±15,000	7.01x10 ⁴	7.92x10 ³	0.035	0.00025	7	3.18
2K	226	0 to ±8,500	2.60x10 ⁵	2.94x10 ⁴	0.15	0.0011	11	4.99
5K	565	0 to ±8,500	5.80x10 ⁵	6.55x10 ⁴	0.19	0.0013	14	6.35
10K	1.13K	0 to ±8,500	6.05x10 ⁵	6.83x10 ⁴	0.19	0.0013	14	6.35
20K	2.26K	0 to ± 8,000	1.80x10 ⁶	2.03x10 ⁵	2.30	0.016	105	47.6
40K	4.52K	0 to ± 8,000	2.70x10 ⁶	3.05x10 ⁵	2.40	0.017	105	47.6
50K	5.65K	0 to ±6,000	5.70x10 ⁶	6.44x10 ⁵	2.80	0.020	115	52.16
100K	11.3K	0 to ±6,000	7.10x10 ⁶	8.02x10 ⁵	3.00	0.021	115	52.16
200K	22.6K	0 to ±3,600	2.90x10 ⁷	3.28x10 ⁶	11.00	0.078	150	68.04
375K	42.4K	0 to ±3,600	3.80x10 ⁷	4.29x10 ⁶	11.70	0.083	150	68.04

*Stiffness is conservatively rated and includes both the torsion section and shaft ends.