Model HRDT High Resolution Digital Telemetry Rotary Torque Transducer

- Capacities from 250 to 10K Nm (443 to 88,500 lb-in)
- Full 18-bit useable resolution (24 bit internal)
- 2,000 fully processed results per second
- 4X safe overload (2x for DIN 90 size)
- Easy stator alignment
- Push button configuration – No PC required for basic set-up and installation
- DIN Rail mountable digital display output
- Bearingless non-contact design
- Outputs include fully scalable ±5V, ±10V, 4-20 mA, Frequency, USB
- Short, stiff design with low rotational inertia
- Full selection of filters including Bessel, Butterworth Chebychev, Exponential, Triggered average
- Reliable digital data transmission
- Inputs for speed & angle
- Up to 30,000 RPM option with balancing
- Multiple independent outputs option
- Power calculation (requires speed option)

HRDT Rotary Torque Transducer
Stator, Rotor & Output Module Shown

STANDARD COMPONENTS

Calibrated rotor module/sensor element with configuration files on USB flash drive

Stator module

Output module with foot and DIN Rail mounting hardware

Setup and configuration software

Cables

OPTIONS

Two or more output modules to deliver multiple simultaneous outputs or independent ranges

Integral couplings for shaft-end installations

NEMA 4X enclosure for output module

Integral couplings

Balancing

Speed measurement

RS-485

SPECIFICATIONS

ACCURACY	
Nonlinearity - % FS	±0.05
Linear Overrange - % FS	120
Resolution	18-bit
Data Rate - Fully Processed	2,000 results/sec
TEMPERATURE	
Operating Range °F	0 to 158
Compensated Range °F	+15 to +122
Effect on Zero - %RO/°F	±0.005
Effect on Span - %/°F	±0.005
ELECTRICAL	
VDC Output	±10, ±5
mA Output	12 ±8
kHz Output	10 ±5, 60 ±20 or 60 ±30
Serial Output	USB
Power Supply - VDC	24V
Linearization	9-point
MECHANICAL	
Protection Class	
Rotor and Stator	IP54
Control Module	IP40 (IP66 option)
Rated Speed	30,000 RPM w/balancing option

DIN Size	Capacity (Nm)	Material
90	250, 500	Aluminum
120	1K, 2K	Steel
150	3K, 4K	Steel
180	5K	Steel
225	10K	Steel

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ADVANCED FORCE & TORQUE MEASUREMENT

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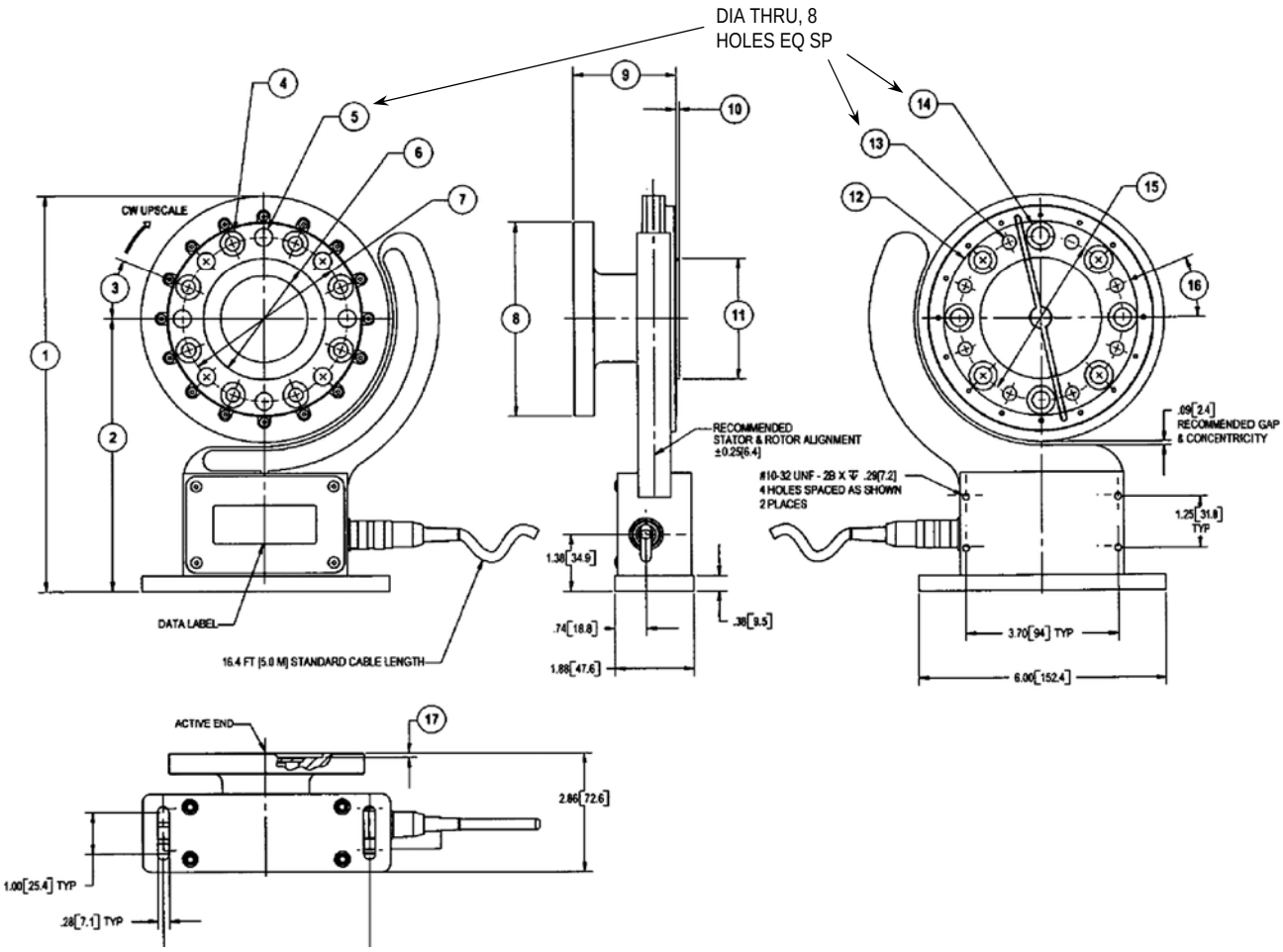
Stator & Rotor



DIMENSIONS

Model	DIN 90		DIN 120		DIN 150		DIN 180		DIN 225	
Capacity (Nm)	250, 500		1K, 2K		3K, 4K		5K		10K	
Equivalent (lb-in)	2.2, 4.43K		8.85K, 17.7K		26.5K, 35.4K		44.3K		88.5K	
	Inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
(1)	8.47	215.1	9.62	244.3	11.82	274.8	11.63	295.4	14.07	357.3
(2)	6.09	154.8	6.62	168.1	7.22	183.3	7.63	193.9	8.84	224.6
(3)	N/A		22.5°		22.5°		22.5°		22.5°	
(4)	N/A	N/A	0.59	15	0.67	17	0.79	20	1.00	25.5
(5)	0.35	8.80	0.43	10.8	0.50	12.8	0.58	14.8	0.66	16.7
(6)	1.8504	47 H7	2.9528	75 H7	3.5433	90 H7	4.3307	110 H7	5.5118	140 H7
(7)	2.93	74.5	4.00	101.5	5.12	130	6.12	155.5	7.72	196
(8)	3.54	90	4.72	120	5.91	150	7.09	180	8.86	225
(9)	2.16	54.8	2.44	62	2.44	62	2.50	63.5	2.52	64
(10)	0.08	2	0.08	2	0.08	2	0.08	2	0.08	2
(11)	1.8504	47g6	2.9528	75g6	3.5433	90g6	4.3307	110g6	5.5118	140g6
(12)	3.54	90	4.72	120	5.91	90	7.09	180	8.86	225
(13)	M8x1.25-6H		M10x1.5-6H		M12x1.75-6H		M14x2.0-6H		M16x2-6H	
(14)	0.56	14.2	0.68	17.3	0.76	19.2	0.89	22.5	1.00	25.5
(15)	2.93	74.5	4.00	101.5	5.12	130	6.12	155.5	7.72	196
(16)	22.5°		22.5°		22.5°		22.5°		22.5°	
(17)	0.10	2.50	0.11	2.80	0.13	3.20	0.15	3.80	0.21	5.3

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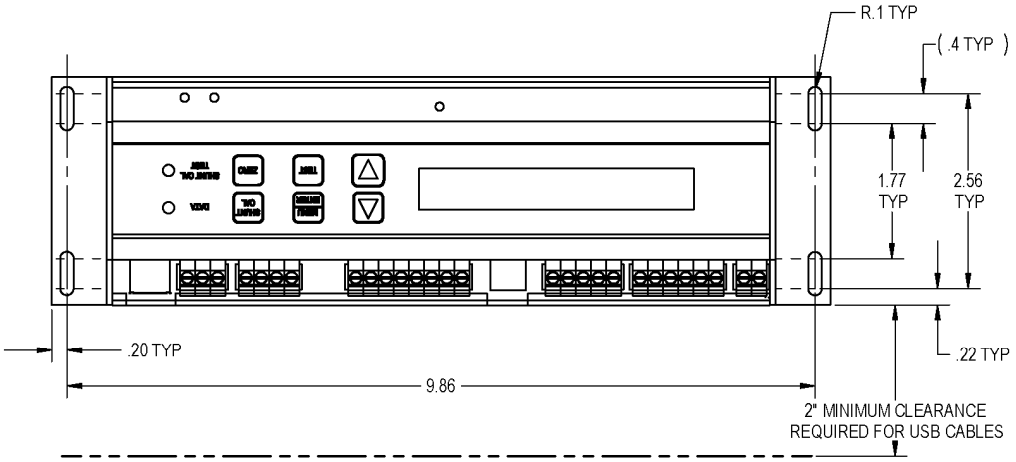
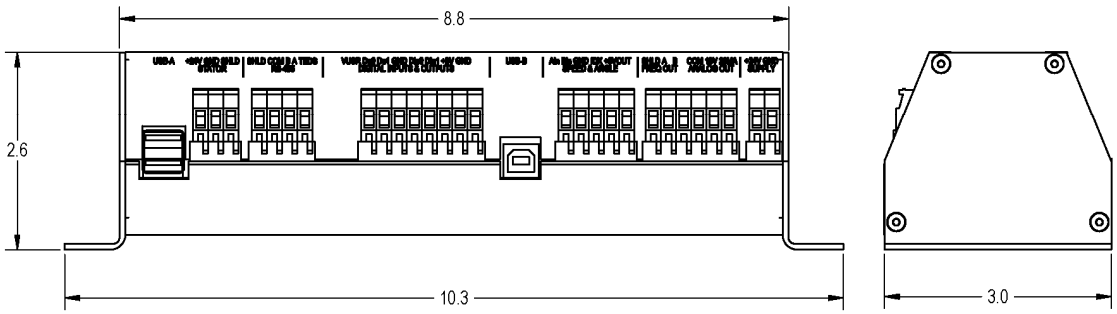
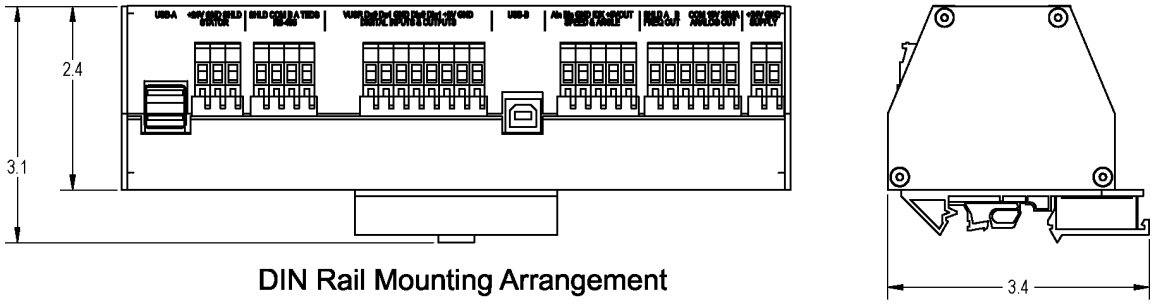
Output Module Dimensions





Standard Mounting Arrangement



DIN Rail Mounting Arrangement

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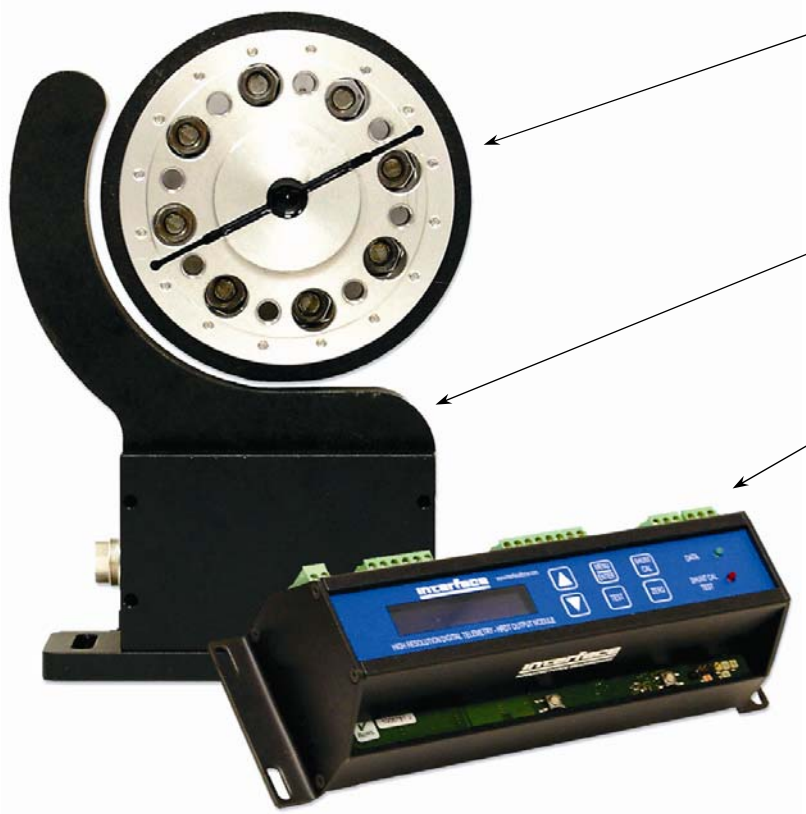
HRDT High Resolution Digital Telemetry Parts Guide



Rotor Module: Strain gage based rotary torque sensor with inductive power loop and on-board 2.4GHz radio transceiver for data transfer.

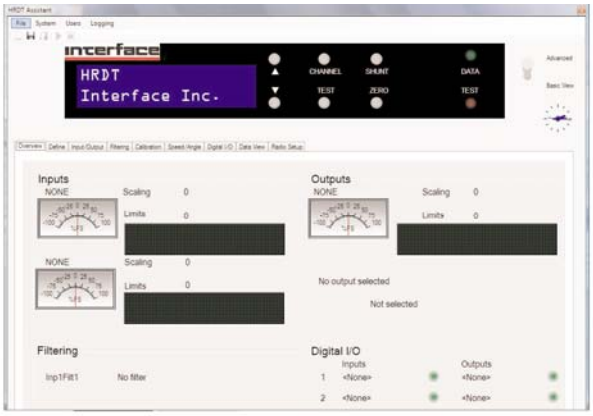
Stator Module: Supplies inductive power to the Rotor Module and houses a 2.4GHz radio transceiver for communication with the Rotor.

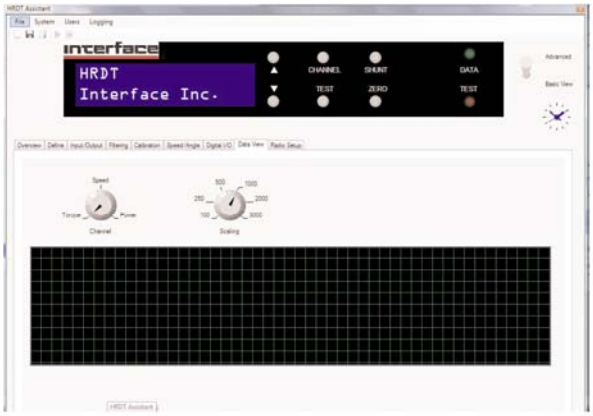
Output & Control Module: Windows CE computer providing system control, scaled outputs, digital readout for torque, speed or power and menu commands. The Output Module is connected to the Stator by a 5m cable. Longer cable lengths are optional. No minimum cable length.

Out of the Box: The HRDT system is configured ready-to-run. Simply connect the components together and apply power. Rotor calibration data and system configuration files are backed-up on a supplied USB memory stick. Multiple output modules can be used to provide independently scalable simultaneous dual outputs. Stator-to-output module and PC interconnect cables are included.

HRDT Graphing and Logging Software

Software: The HRDT system includes setup, graphing and logging software.





HRDT
Rev. Date 1/25/11

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