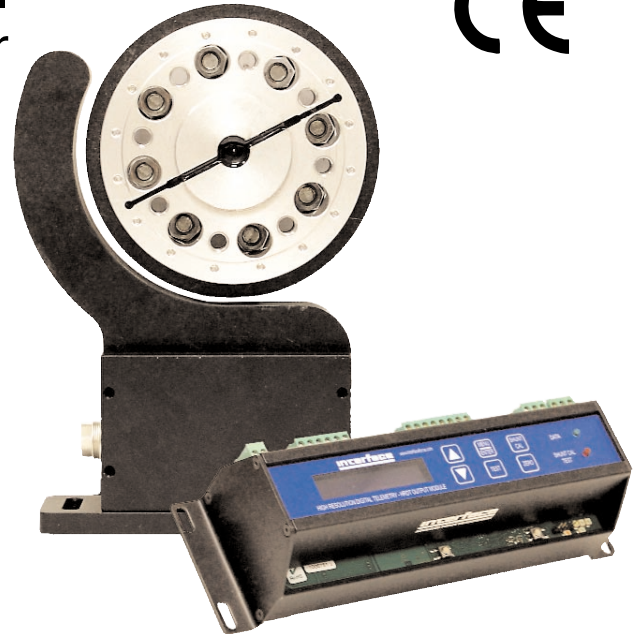


Model HRDT High Resolution Digital Telemetry Rotary Torque Transducer



Why the Interface model HRDT High Resolution Digital Telemetry Rotary Torque Transducer is the best in class:

- Capacities from 500 to 10K Nm (885 to 88,500 lb-in)
- Full 18-bit useable resolution (24-bit internal)
- 2,000 fully processed results per second
- 4X safe overload (500 Nm 2X)
- Easy stator alignment
- Push button configuration – No PC required for basic setup and installation – Configurable by USB memory stick
- DIN Rail mountable digital display control module
- Bearingless non-contact design
- Outputs include fully scalable $\pm 10V$, 4-20 mA, frequency, RS232/RS485/USB, Ethernet
- Short, stiff design with low rotational inertia
- Full selection of filters including Bessel, Butterworth, Chebychev, Exponential, Triggered average
- On-rotor shunt calibration
- Reliable digital data transmission
- Inputs for speed & angle
- Outputs selectable for torque, speed and power
- Up to 30,000 RPM option with balancing
- Multiple independent outputs option
- Windows CE embedded



HRDT Rotary Torque Transducer
Stator, Rotor & Output Module Shown

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
 mA Output 12 ± 8
 kHz Output 10 ± 5 , 60 ± 20 or 60 ± 30
 Serial Output RS232, RS485, USB
 Power Supply - VDC 18 to 32
 Linearization 9-point

MECHANICAL

Protection Class
 Rotor and Stator IP54
 Control Module..... IP40 (IP66 option)
 Rated Speed 30,000 RPM

STANDARD COMPONENTS

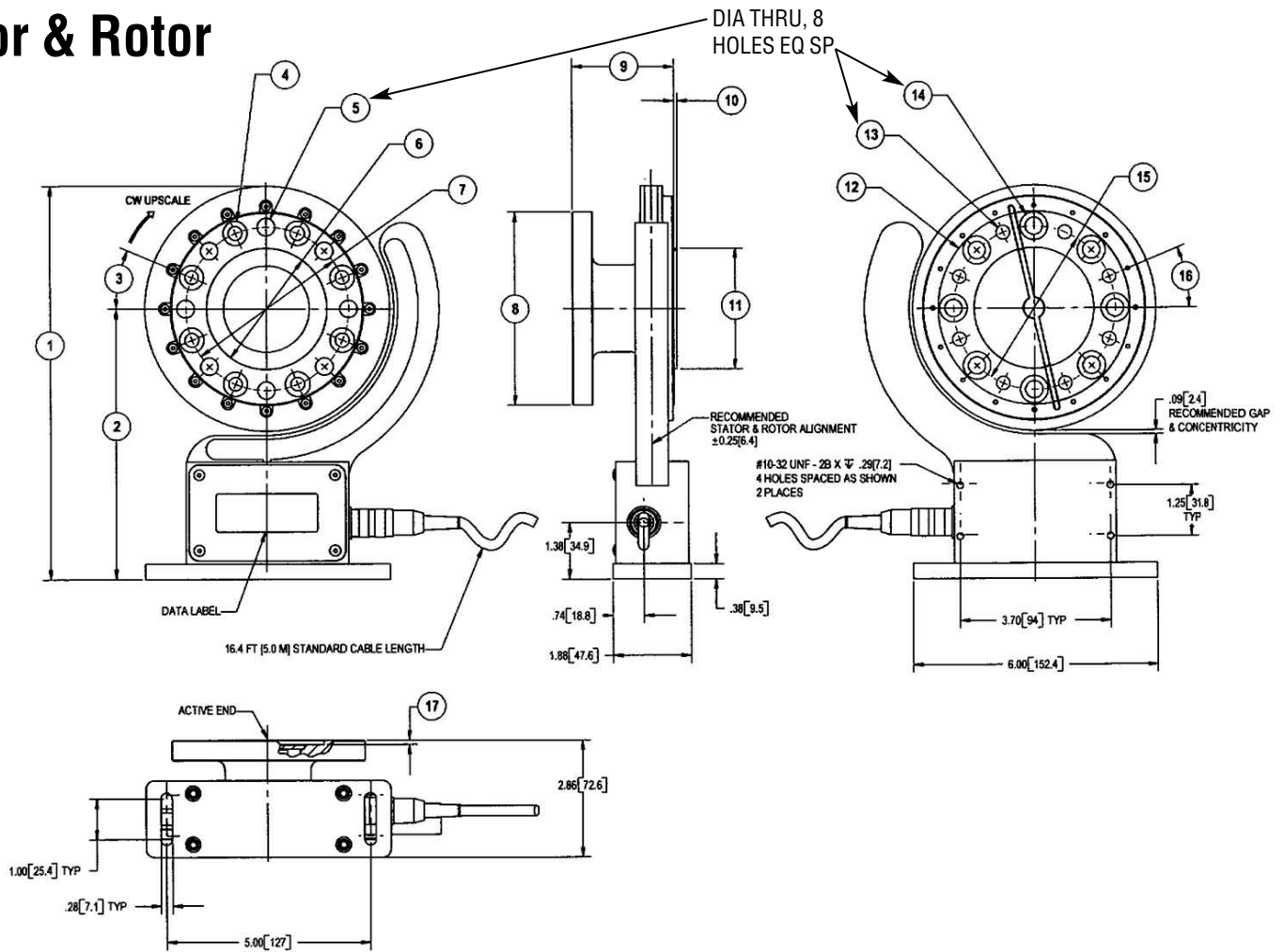
- Calibrated rotor module/sensor element with configuration files on USB stick
- Stator module
- Output and control module with DIN Rail mounting hardware
- Setup and configuration software
- Interconnect cables

OPTIONS

- Multiple output modules to deliver multiple outputs from a single sensor
- Integral couplings for shaft-end installations
- NEMA 4X enclosure for control module
- Multiple independent ranges

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

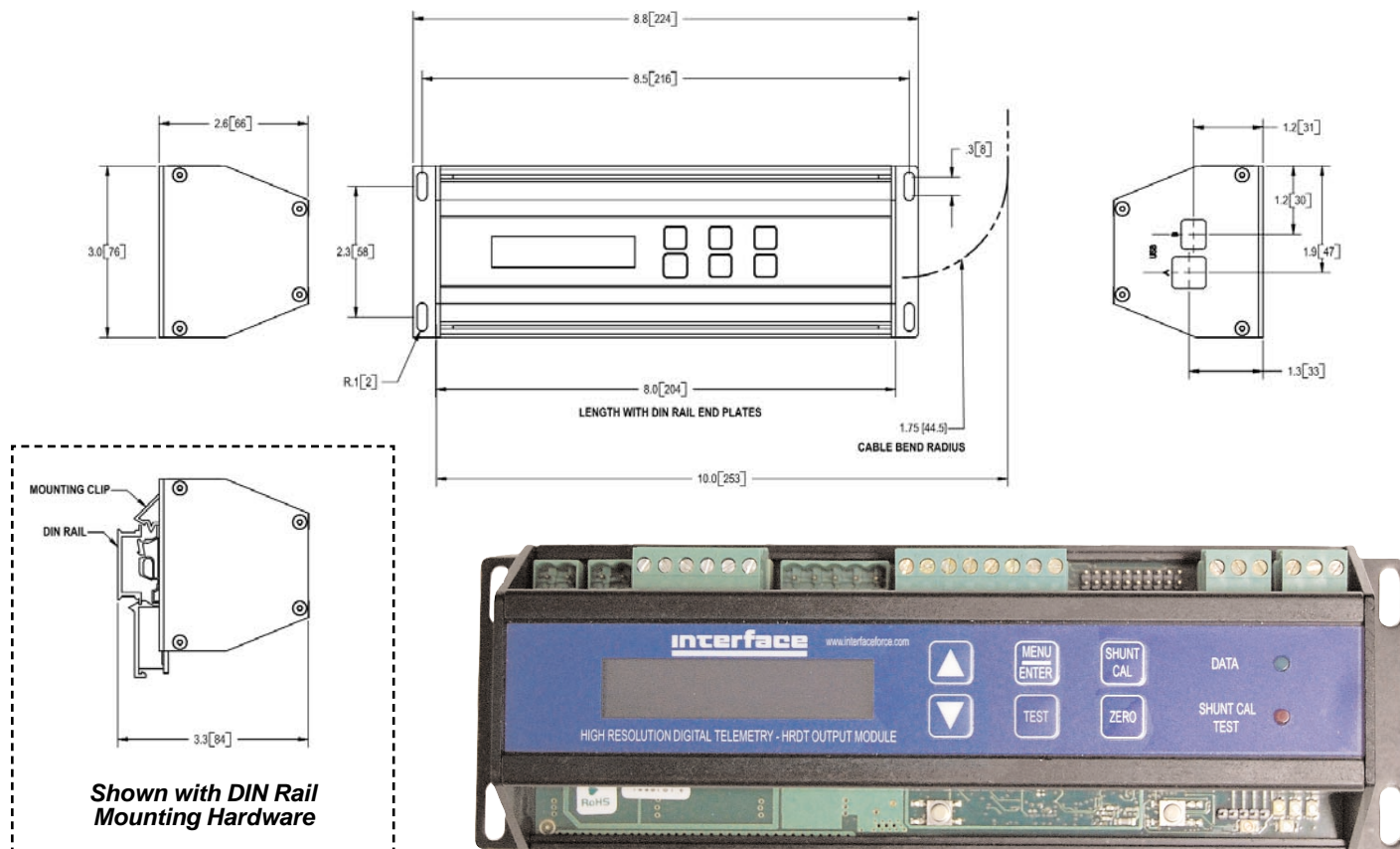
Stator & Rotor



DIMENSIONS

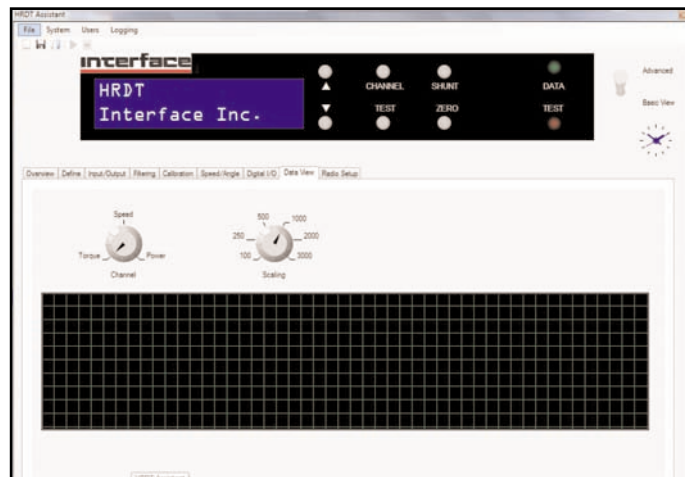
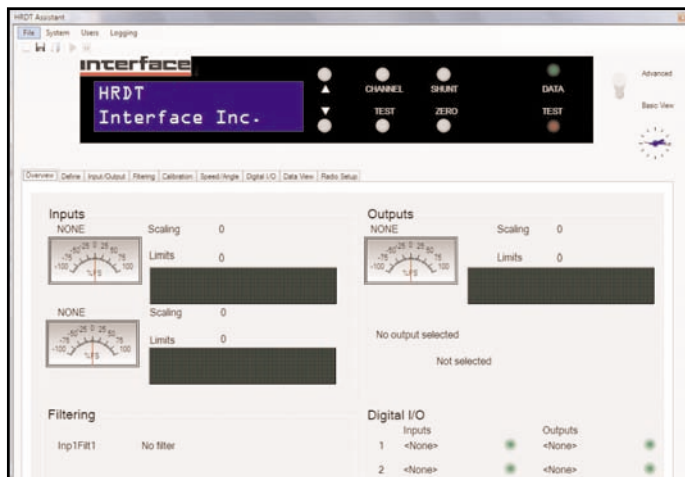
| Model | DIN 90 | | DIN 120 | | DIN 150 | | DIN 180 | | DIN 225 | |
|--------------------|------------|-------|------------|-------|-------------|-------|------------|--------|----------|--------|
| Capacity (Nm) | 500 | | 1K, 2K | | 3K, 4K | | 5K | | 10K | |
| Equivalent (lb-in) | 4.43K | | 8.85K, 17K | | 27K, 35,4K | | 4.43K | | 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 |

Output Module Dimensions

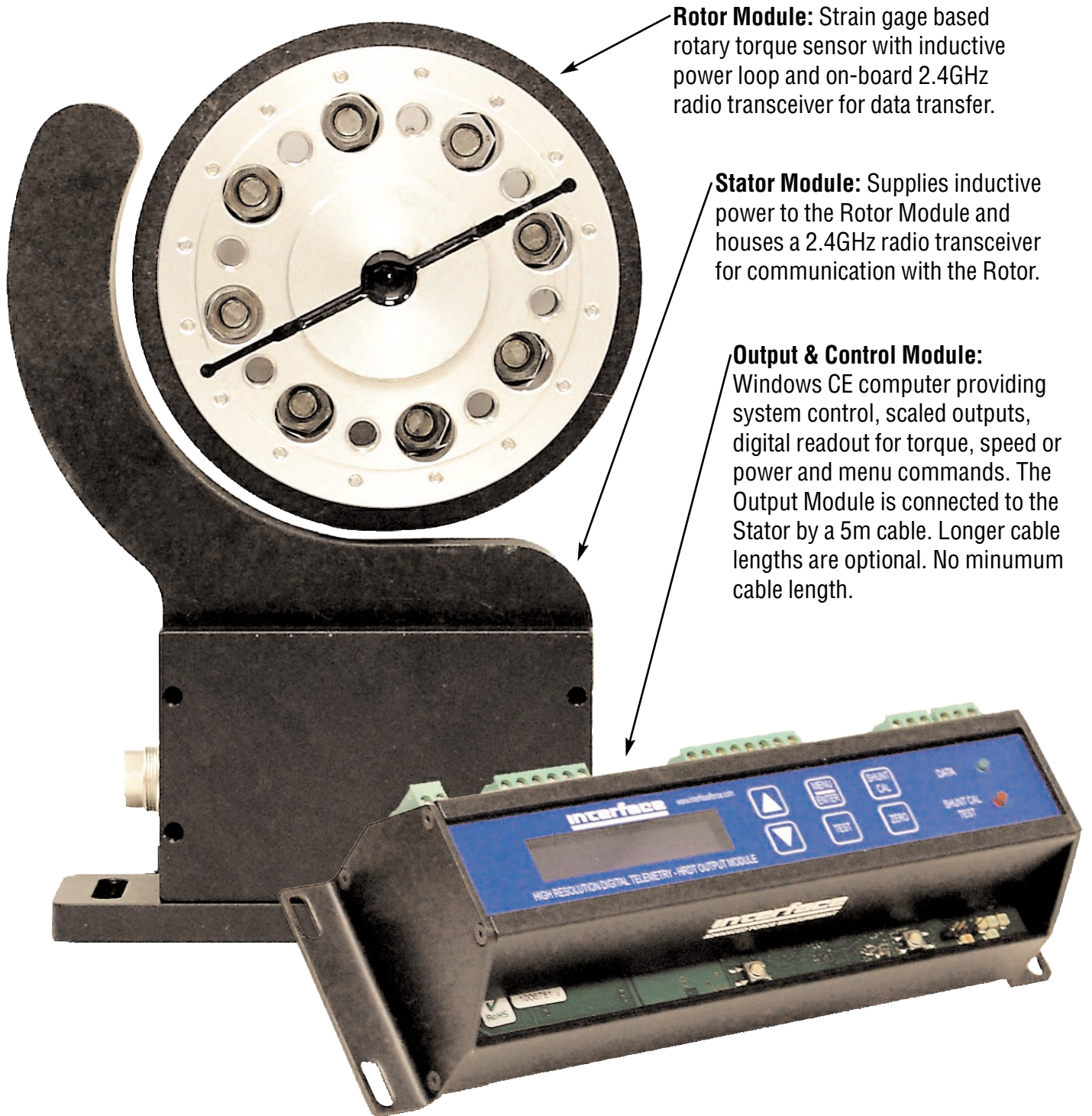


HRDT Graphing & Logging Software

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



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. Rotor calibration data is supplied on a convenient USB memory stick. Simply connect the components together and apply power. The digital readout on the output module guides you through the install process.

Multiple Output Modules can be used to provide independently scalable simultaneous dual outputs.