MR200W Series

YAW POSITION FEEDBACK FOR WIND TURBINES

MICRONOR

automation components

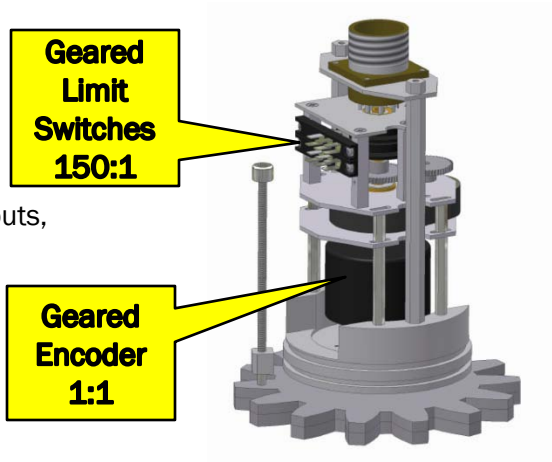
Products

Since 1968, Micronor has been manufacturing precision Position and Control Transducers for OEMs and End-Users throughout many industries and harsh environments; including CNC machine tools, robotics, heavy industry, paper converting , mining, utilities, nuclear power plants and military/aerospace. These products are based on Micronor's MR200 series of modular rotary cam-based components and design concepts.

The MR200W series signifies yaw position transducer solutions developed specifically for the Wind Turbine Industry. Our modular design capabilities allow us to efficiently engineer semi-standard/semi-custom solutions unique to the requirements of a particular Wind Turbine OEM including a unique combination of gearing, limit switches, resolver/encoder, ingress protection and mounting configuration.

MR200W series Position Transducers can be engineered to integrate any one or combination of various feedback technologies, including:

- Special gearing and external pinion gear
- Incremental encoders with A/B quadrature output s
- Absolute single-turn or multiturn encoders with various interface options – SSI, Profibus, CanOpen, analog outputs, etc.
- Resolvers
- Potentiometer including 4-20mA output transducer
- Programmable limit switches

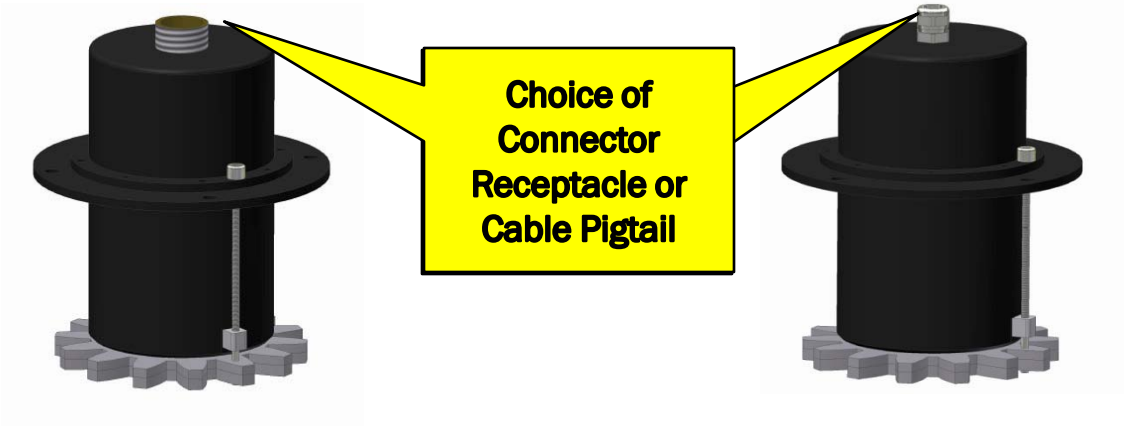


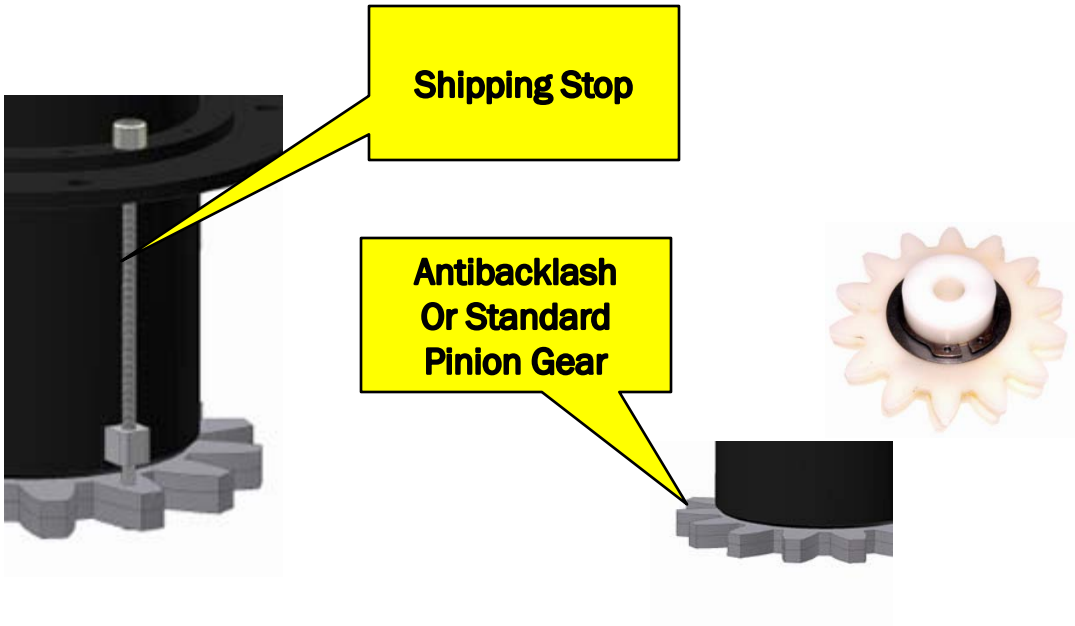
Example

Example of a MR200W series Position Transducer in production for a North American Wind Turbine Manufacturer.

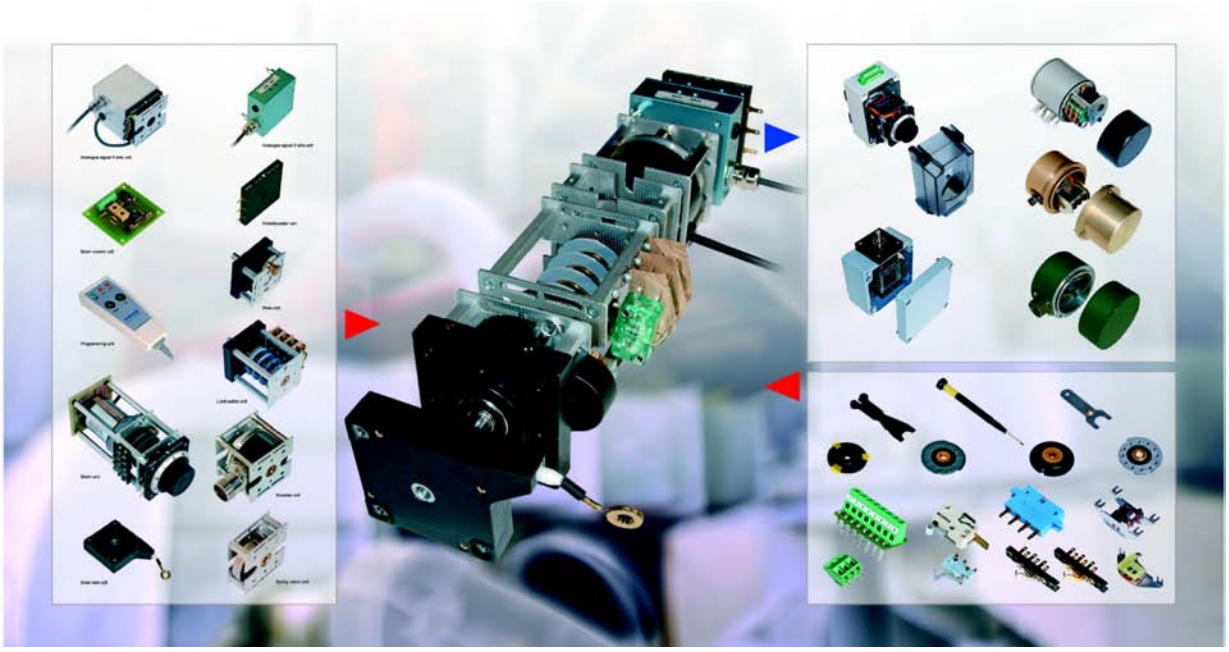
This unit incorporates 2 limit switches set for max cable twist in CW versus CCW direction – plus an incremental encoder for monitoring position.

Features

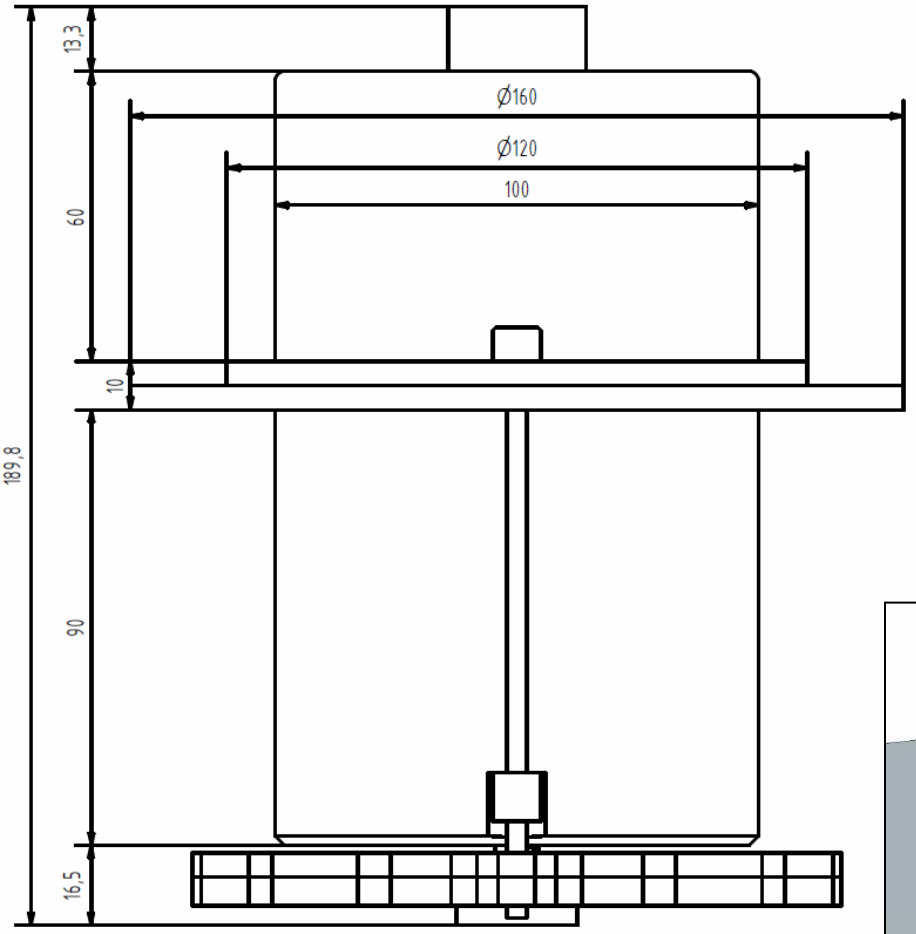




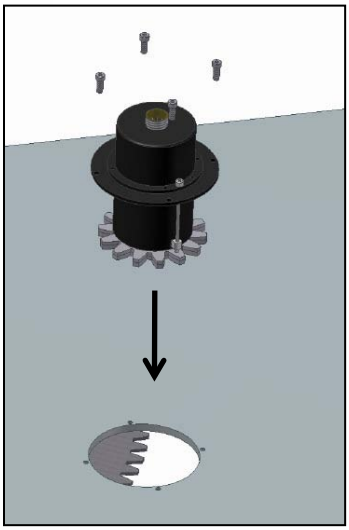
Modular Design

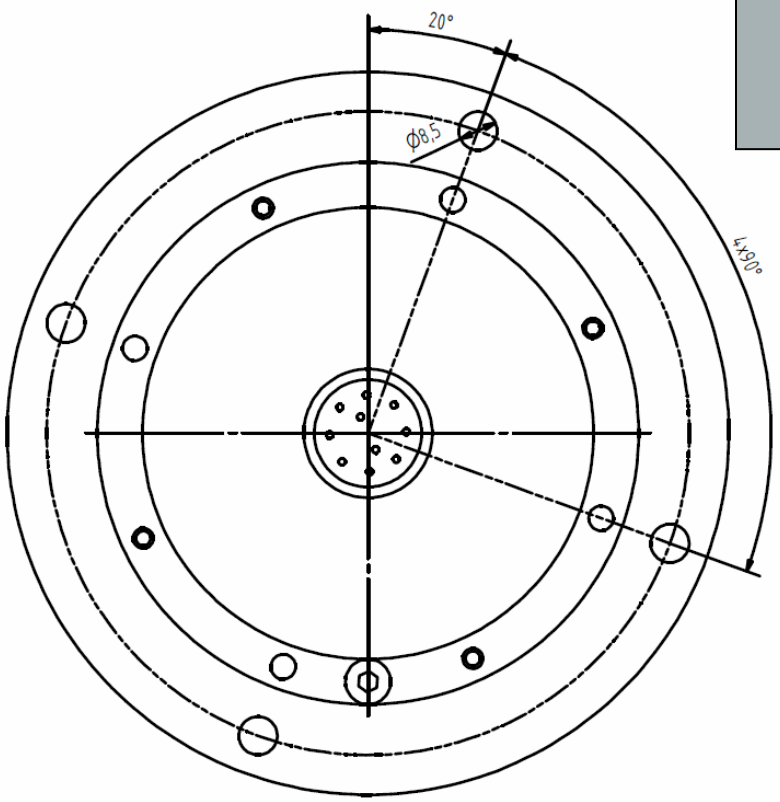


Reference Dimensions



Mounting Example





How To Specify A Position Transducer

Specifying Requirements Step-By-Step For New Applications:

1. Environmental Requirements: What are your temperature and humidity requirements?
   - **-40°C to +80°C (-40°F to +176°F)**
2. Ingress Protection (IP) requirements?
   - IP54 = Dust resistant and protected against splashing water
   - **IP64 = Dust proof and protected against splashing water (typical)**
   - IP65 = Dust proof and protected against water jets (wind driven rain)
3. Packaging: What package style is desired - MR200W shown here, FRL90 synchro can, NEMA-style box, Open Frame or application specific design?
4. Bull Gear: What are the yaw bull gear dimensions? What is the proposed mounting arrangement of the transducer unit?
5. Shaft: What is required shaft size? Shaft key required? External pinion gear?
6. Sensor Functions: What type of feedback sensor and/or type of output is required?
   - Resolver(s) What specific resolver type is required? What overall measurement accuracy and resolution s required – relative to one revolution of the bull gear?
   - Encoder(s): Determine type required– incremental or absolute? What overall measurement accuracy and resolution s required – relative to one revolution of the bull gear? What operating voltage and type of output? For incremental encoders, what resolution (ppr) and is an index pulse required? For absolute encoders – what resolution, coding and interface format (parallel, SSI, CAN, analog output, etc.)?
   - Potentiometer(s): What is the desired resistance value and wattage rating?
   - Programmable Limit Switches: How many switch channels are needed and what are the required limit settings? What are V/I load requirements for the switch?
7. Electrical Interface: Axial or radial mount connections? Fixed connector receptacle or pigtail (and what length)? What are the critical mounting and/or clearance dimensions?

Ordering Info

Contact Micronor for detailed product information on these Standard FBU configurations in synchro-style packages :

- FE 90 Series: Geared Encoder
- FEL 90 Series : Geared Encoder + Limit Switches
- FL/FRL 90 Series: Geared Limit Switches
- FPL 90 Series: Potentiometer/4-20mA Transducer + Limit Switches
- FR 90 Series: Geared Resolver
- FRL 90 Series: Geared Resolver + Limit Switches

Additional standard designs in heavy duty, NEMA-style enclosures:

- KWG120 Series: Geared Limit Switches
- DWG120 Series: Potentiometer + Geared Limit Switches

For other configurations plus Motor Pots and Cam Timers, please contact the local Micronor sales engineer or representative and they will help guide you to the proper product and configuration.

MICRONOR INC.
900 Calle Plano, Suite K
Camarillo, CA 93012
USA
T +1-805-389-6600
F +1-805-389-6605
sales@micronor.com
www.micronor.com

MICRONOR AG
Pumpwerkstrasse 32
CH-8105 Regensdorf
Switzerland
T +41-44-843-4020 F
+41-44-843-4039
sales@micronor.ch
www.micronor.com