



WDS Series  
Draw Wire Modules  
for use with Rotary Encoders  
and Rotary Limit Switches

User Manual

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## 1. Revision History

Revision	Date	Notes
A	01/15/2024	Original Release (English)

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## 2. Product Description

### 2.1 Draw Wire Modules for Linear Position Feedback

Draw Wire modules convert the rotary motion of rotary encoders and rotary limit switches to linear position sensing up to 50m. The resolution of the measurement and electrical output is solely based on the encoder selected by the user.

- Incremental encoders will output A/B quadrature pulses
- Absolute encoders are available with a variety of interface options – with SSI or Analog Output being the most common.

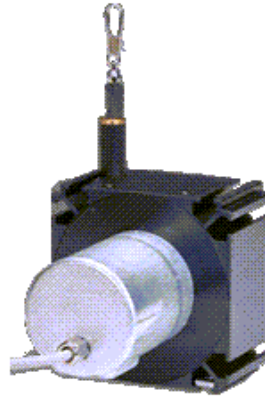


Figure 1. Draw Wire Module with attached Encoder



Figure 2. Draw Wire Module integrated with Rotary Limit Switch

### 2.2 Applications

- Hoists and Cranes
- Lifts and Elevators
- Doors
- Dam and Flood Control Gates
- Hydraulic Cylinders

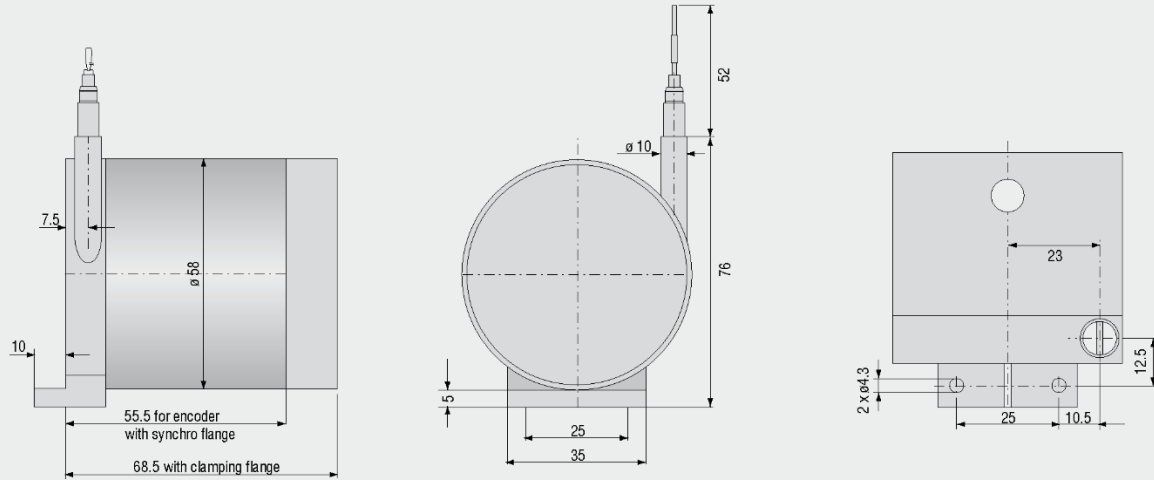
### 3. Specifications

Ordering PN	89-2625141	89-2625202	89-2625202	89-2625165	89-2625166	89-2625221	89-2625222	89-2625223	89-2625307	
Model	WDS-1R5-Z50-M	WDS-3-P96-M	WDS-5-P115-M	WDS-7R5-P115-M-S0	WDS-10-P115-M-S0	WDS-15-P115-M-S0	WDS-30-P200-M-S0	WDS-40-P200-M-S0	WDS-50-P115-M-S0	
Measuring Range	1.5m or 1500mm	3m or 3000mm	5m or 5000mm	7.5m or 7,500mm	10m or 10,000mm	15m or 15,000mm	30m or 30,000mm	40m or 40,000mm	50m or 50,000mm	
With Wire Brush (for self-cleaning)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Output	Dependent on encoder used									
Linearity	FSO=Full Scale Output									
<0.01% FSO	-	-	-	-	1mm	1.5mm	3mm	4mm	5mm	
<0.02% FSO	0.3mm	0.6mm	1mm	1.5mm						
Travel per shaft revolution (mm/rev)	150mm or 5.90in	260.09 or 10.24in	315.07mm or 12.40in				500mm or 19.69in			
Resolution	Dependent on encoder used									
Example: Resolution with 13-bit ST SSI Encoder	0.018 mm or 0.00072 in	0.032 mm or 0.0012 in	0.038mm or 0.0015in				0.061mm or 0.0031in			
Suitable Encoder	For use with Size 58mm synchro mount encoder with 6mm OD shaft									
Temperature Range										
Operation										
Storage										
	-20°C to +80°									
	-40°C to +80°									
Material										
Housing	Aluminum									
Wire	Coated polyamid stainless steel									
	Ø0.45mm	Ø0.8mm	Ø1.0mm				Ø0.8mm			
Wire Mounting	Wire clip	Thread M4	Eyelet							
Wire Acceleration	10g	7g	5g	6g	3g	3g				
Wire Retraction force (min)	3.5N	5N	4N	8N	8N	8N	12N	11N	11N	
Wire Extension Force (max)	5.5N	10N	16N	24N	21N	25N	22N	22N	22N	
IP Protection Class	Dependent on encoder									
Vibration	20g, 20Hz...2kHz									
Mechanical Shock	50, 10ms									
Weight	0.3kg	1.1kg	1.4kg	1.9kg	2.8kg	3.2kg	9.5kg	10kg	11kg	

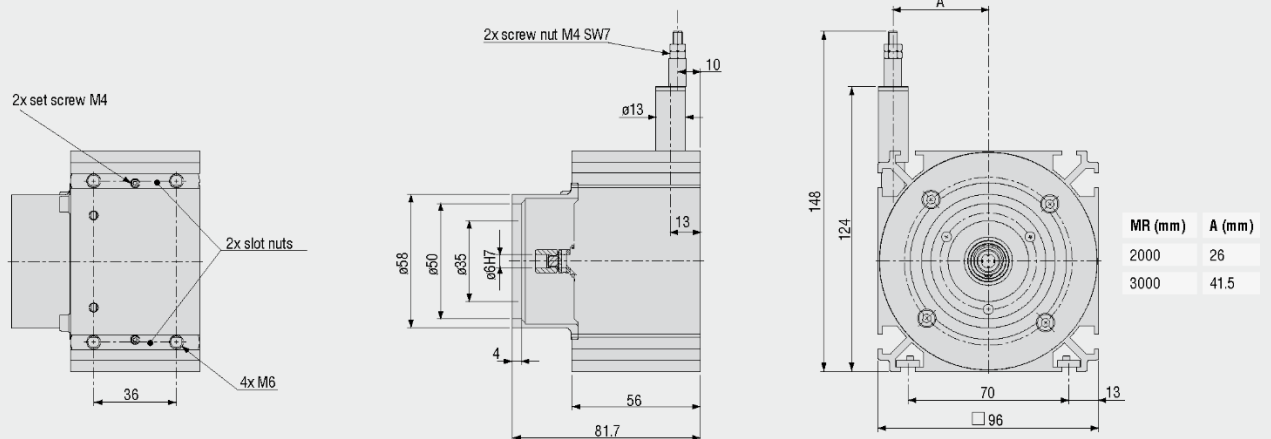
Specifications subject to change without notice

## 4. Mechanical Drawings

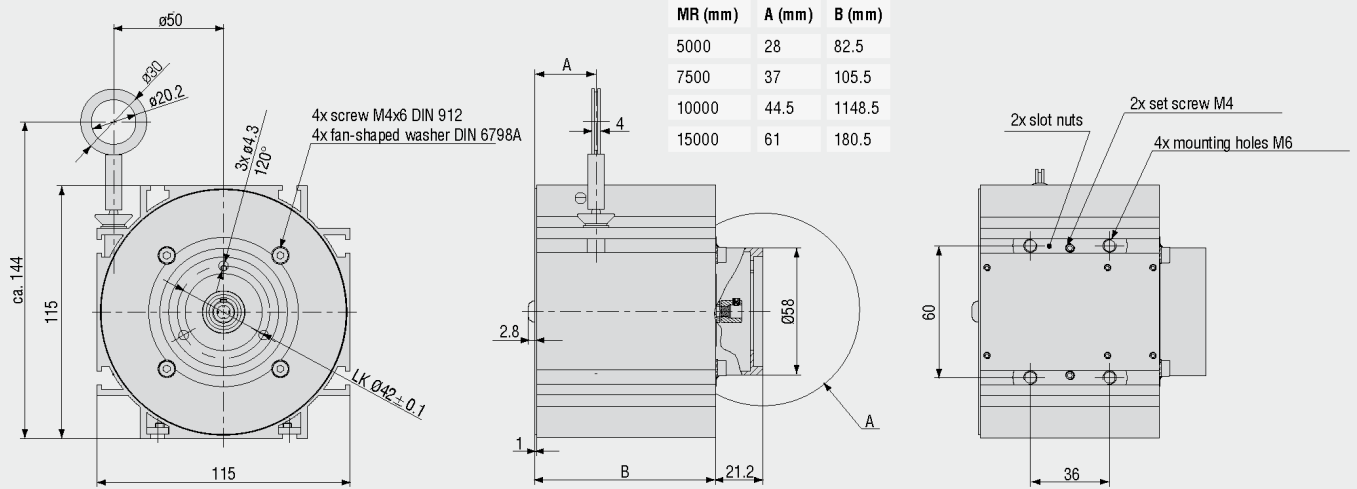
**Model Z60**



**Model P96**



**Model P115**



**Model P200**

