



Motorized E-roller

AR50 analog series

Datasheet

02.03
29-11-2022

AR50 ANALOG SERIES MOTORIZED ROLLERS

Product description

The AR50 analog series consist of motorized E-rollers which are brushless DC motors integrated in a conventional NDW roller with the primary purpose to drive non-driven rollers in conveyor systems. Typical industrial applications range from intralogistics systems to manufacturing applications which include product handling. The E-roller can be used in straight, curved and angled conveyor systems.

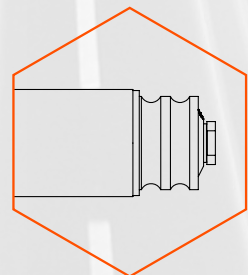
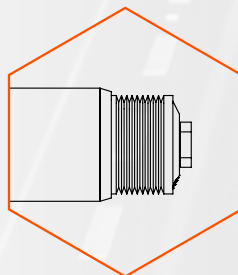
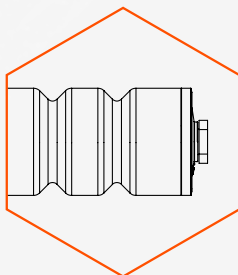
E-roller controllers

Each motorized E-roller must be connected to a compatible motor controller such as the BWU3290 or BWU2478 (Bihl + Wiedemann) modules. AR50 analog motors are designed to be controlled by these modules or modules with a similar interface.



E-roller transmissions

Within the AR50 analog series, E-rollers can be equipped with different transmission alternatives such as poly-v, grooves, toothed belts and round belts. The selection is based on the requirements of the application.



Technical Data

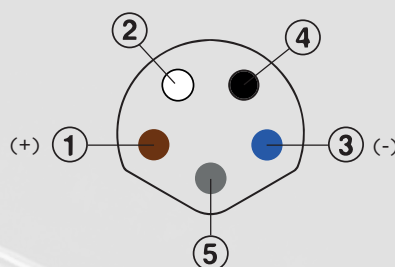
Rated voltage	24Vdc
Rated current	2A (1)
Current limit	5A (1)
Power consumption (Rated max)	50W
Ambient temperature in operation	0 °C to +40 °C, non-condensing
Compatible controllers	Compatible with controllers with an analog interface. E.g BWU3290, BWU2478 and similar.
Motor connector type and cable length	M8 5-pin, male, snap-in, B-coded, length 900mm
Motor shaft	Stainless steel, 11 mm hexagon, thread M12 x 1.75
Tube	50 x 1.5mm, stainless steel or zinc-plated steel
Stall protection	If motor is stalled for more than 2 seconds, the motor will stop and the error signal will become low. To reset turn the power off and on again.
Overvoltage protection / Overcurrent protection	No. Current cap to be provided by controller. Do not use in overload condition, which is higher than 5A for longer than 2 seconds. Overcurrent protection module available separately. See page 7, accessories for article number.
Protection rate	IP54
Maximum noise level	55 dB (2)
Minimum conveyor frame width for E-roller	IL = 275 mm (Poly-v transmission)

1. Actual current is depended on the conditions of the application, such as actual load, section length, slope etc.

2. Measured at 1 meter. Also dependent on the conditions of the application, such as conveyor frame, mounting type, load and resonance behavior of the system.

Schematic Diagram

Connector M8 5-pin, male, snap-in, B-coded cable



Pins	Function	Color	Value	Range
1	Power supply input (+), motor and logic	Brown	24VDC	18VDC - 28VDC
2	Rotation direction	White	<4VDC = CCW >7VDC = CW	MAX 24 V
3	Power supply input (-), motor and logic	Blue	GND	
4	Fault output (stall error)	Black	Fault = low signal No issue = floating	Open collector output, pulled low at I _c = 10mA in case of fault
5	Speed signal	Gray	Analog 0-10VDC	0-24VDC 0-2.3VDC Motor stop 2.3-10VDC 10%-100% speed

Key features

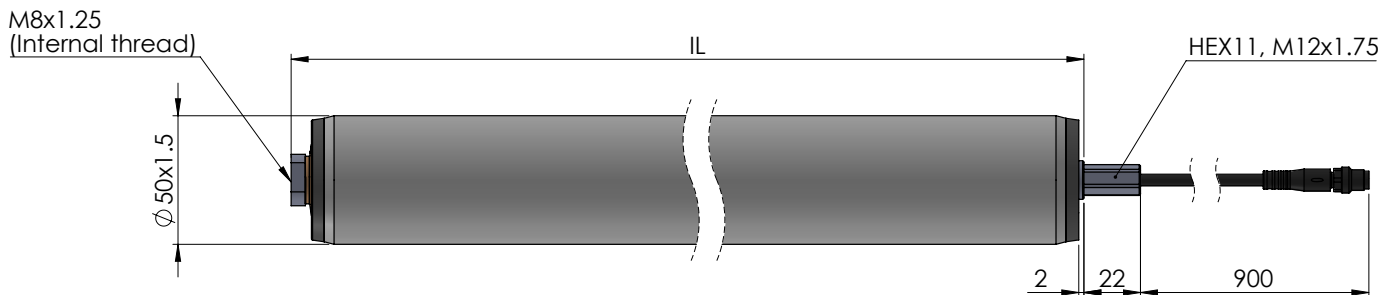
- Energy efficient
- Available in three different gear ratios to suit a wide range of applications
- Seamless integration with non-driven rollers with various transmission options
- Maintenance-free and low-noise
- Analog speed control
- Small minimum roller length
- Easy to install

DIMENSIONS OF THE MOTORIZED E-ROLLER

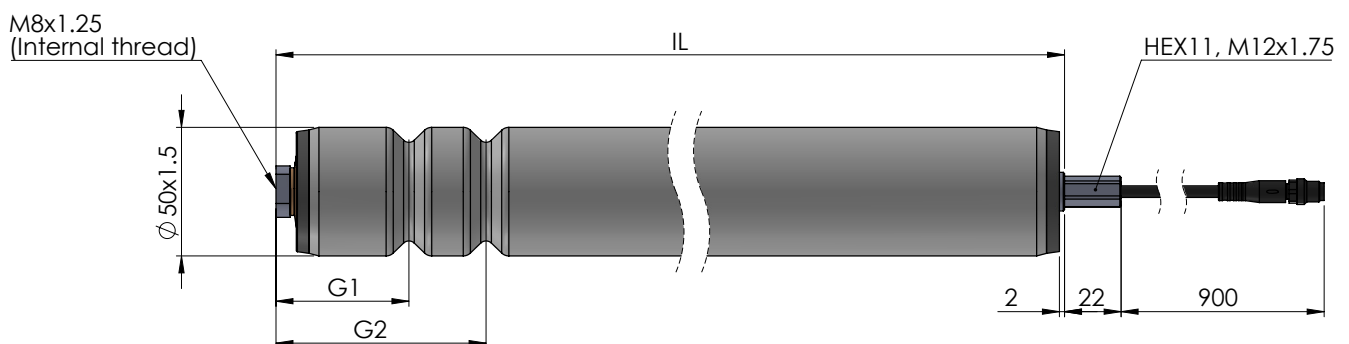
The dimensions of the E-roller depend on the type of transmission type. When ordering a E-roller, the IL-value (enclosed length or frame width) should be used. Since NDW also manufactures the non-driven rollers, alignment between E-rollers and other rollers can be guaranteed.

For other tube diameters, transmission types or mounting type contact NDW.

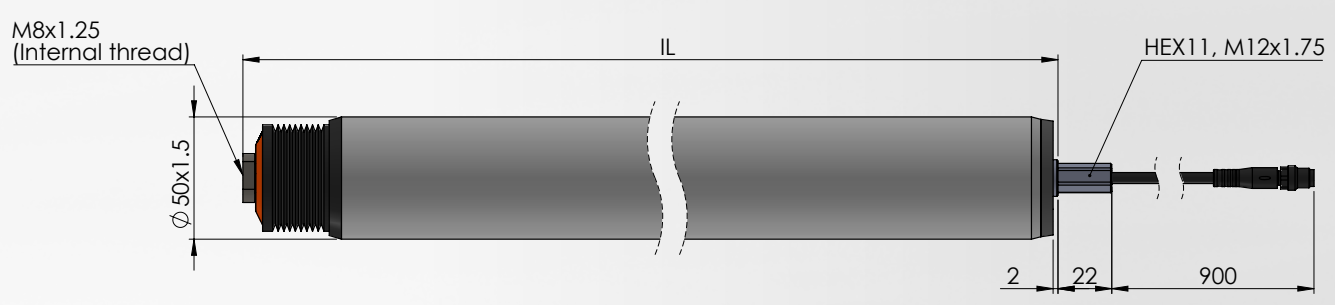
Without grooves - Mounting: M8 internal thread



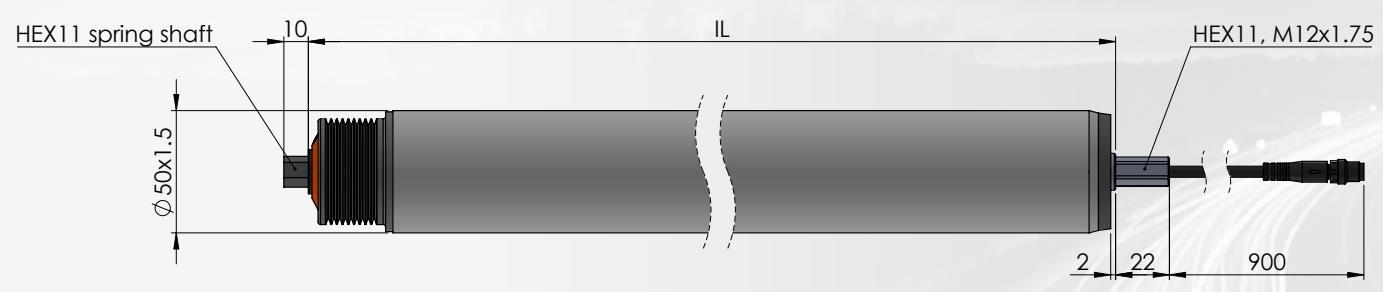
With grooves - Mounting: M8 internal thread



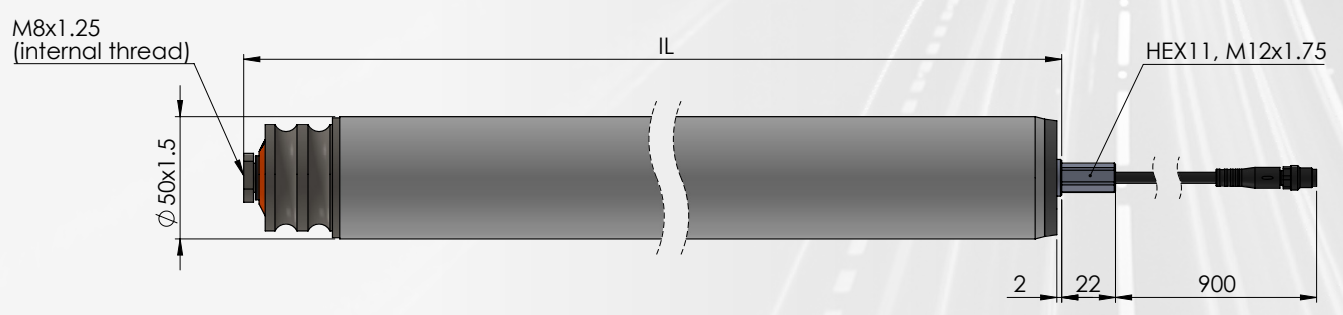
Poly-V - Mounting: M8 internal thread



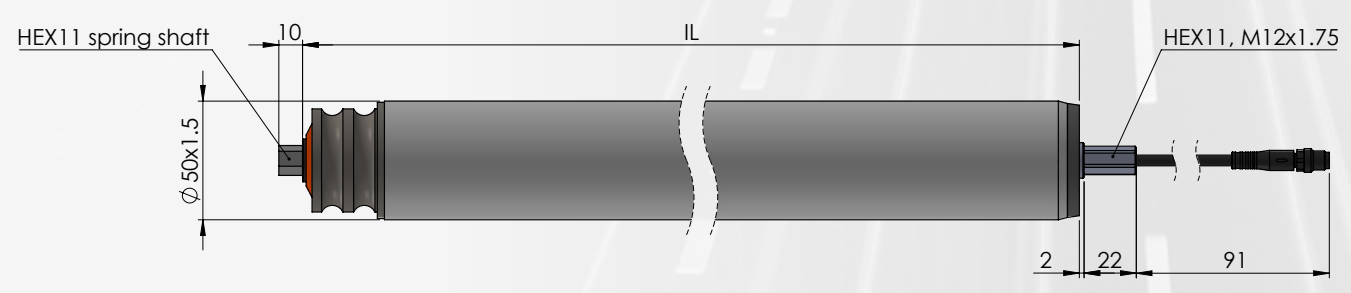
Poly-V - Mounting: HEX11 Spring lock



Round Belt header - Mounting: M8 internal thread



Round Belt header - Mounting: HEX11 spring lock



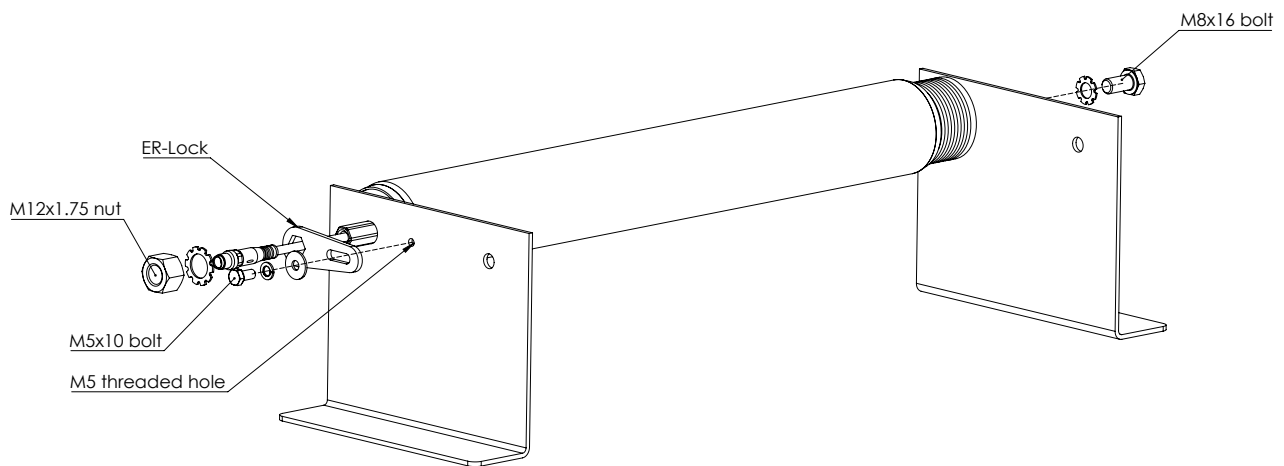
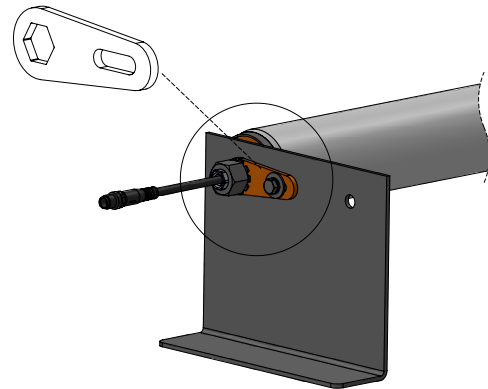
MOUNTING OF THE MOTORIZED E-ROLLER

The AR50 analog motorized roller can be mounted in any conventional conveyor frame consisting of hexagonal holes (min. 11.2 mm) or round holes (min 12.2 mm).

To prevent the roller from twisting in the conveyor frame, one could use the ER-locking plate. This stainless steel plate has a narrow tolerance and can be slid over the AR50 analog shaft. The locking plate can be mounted in multiple directions to ease installation.

Required materials:

- ER-Locking plate
- M12 toothed washer + M12 nut
- M5 toothed washer + M5 washer + M5x10 bolt
- M8 toothed washer + M8x16 bolt



ACCESSORIES

Overcurrent Protection Module

PTC cable analog e-roller

- Overcurrent protection module for analog E-roller
Article number: 901-10910

