

## ASMDR24 | ASMDR48 Motor driven rollers

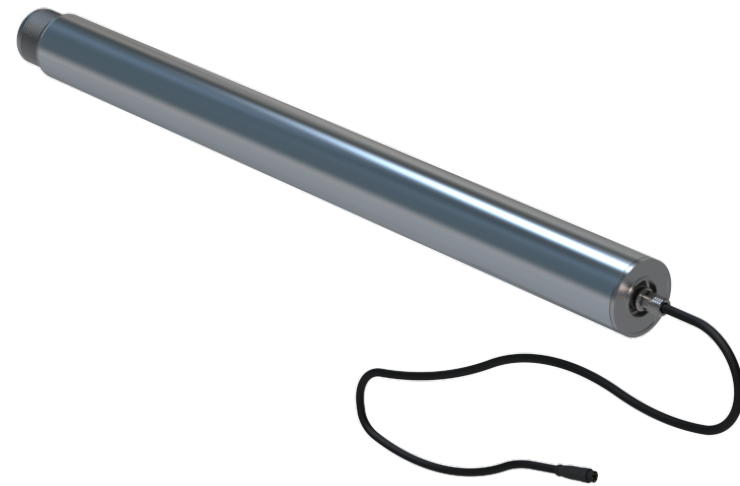
BLDC  
MotorS1  
S412 KHz  
PWMAnalog  
0 -10 V24 V  
90 Watt48 V  
90 Watt

### Intended Use

Motor driven rollers (MDR) are a proven technology used to build low profile conveying systems like driven roller conveyors and belts conveyors.

In combination with our controllers the motorized rollers can be used in the following applications.

- Roller conveyor modules
- Belt conveyor modules
- Linear motion applications
- Sorters and Diverters



### Scope of delivery

The scope of delivery defines the required components in order to create a working application, it is advised to consult our website for training material to choose what components you need more for your application or what kits are available.

	Information	Specifications	Details		
1	AS MDR	Motor Driven Roller	Poly-V   Roundbelt   Belt Pulley   None	90 Watt	Included
2	Accessories	Torque bracket   Half Lock Nut	6 mm SS   5 mm SS + toothed washer	Stainless Steel	Included

### Designed for the future

Our MDRs are designed for most transportation applications in the field of intralogistics and automation including technologically more demanding features.

Operational specifications and state of the art features.

- Brushless motors
- Active braking
- Pulse per rotation feedback
- S1 and S4 duty cycle
- Synchronized running with AS Controllers

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### Technical Specifications

ASMDR24 | ASMDR48 Motor driven roller

	ASMDR 24 VDC	ASMDR 48 VDC
Rated voltage	24 VDC	48 VDC
Rated current	3.7 A @ rated torque	1.9 A @ rated torque
Starting current	4.5 A	3.0 A
Power consumption (Rated)	90 W	90 W
Motor connector   cable	M8 5-pin Snap-in   PU Halogen-free 1000 mm	
Motor shaft	Stainless steel, Hex 11mm thread M12x1,75	
Protection	Stall Protection   Overvoltage   Overheating   External drive	
Overvoltage protection	+28V @24 VDC   +56V @48 VDC	
Temperature protection	> 90 C° shut down, resets after temperature is below 90 C° and speed or power toggle	
Interfaces	PWM 12KHz 10 V (23 - 100%)   Analog 0 -10 V (2.3V - 10.0V)	
Directional Interfaces	CW > 7 VDC   CCW < 4 VDC	
Certifications	CE   ETL <sup>1</sup>	
Ambient Temperature	Operation 0 to +40C   Transport -20 to +80C	
Protection rate	IP 54   IP65 (on request)	
Installation altitude	Max +1000 m from sea level	
Duty Cycles	S1 Continuous at rated torque/ current   S4 50% on/ off *	
Active Braking	The motor brakes with a max current of 2A continuous	

### Additional information

1. Contact us for information about applications in countries that require ETL listed components.
2. The S4 duty cycle at no- load is 50% on and 50% off, without timing restriction. The duty cycle decreases when more load is applied to the motor due the start up current of the motor. A built-in protection protects the motor when it is overloaded and will prevent the motor from breaching the duty cycle parameters.
3. When more force is exerted than the motor can brake, the motor will stop braking. Depending on the specific scenario an error is triggered and a power or speed toggle is required. This typically happens when inertia is too high for the motor and gearbox.

Please visit our website for the latest 3D CAD drawings and variations in dimensions/ configurations.

## ASMDR24 | ASMDR48 Motor driven rollers

BLDC  
Motor

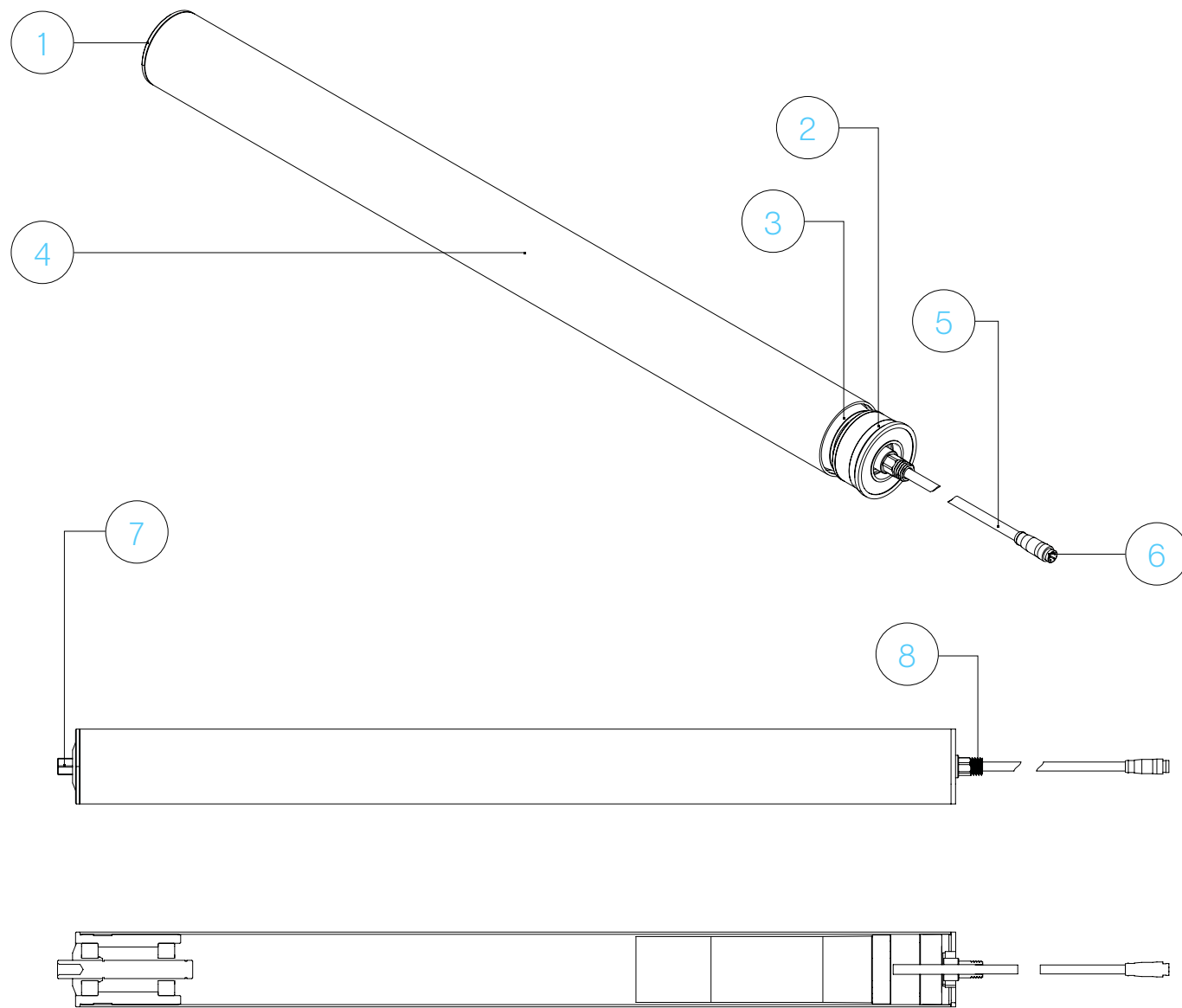
S1  
S4

12 KHz  
PWM

Analog  
0 -10 V

24 V  
90 Watt

48 V  
90 Watt



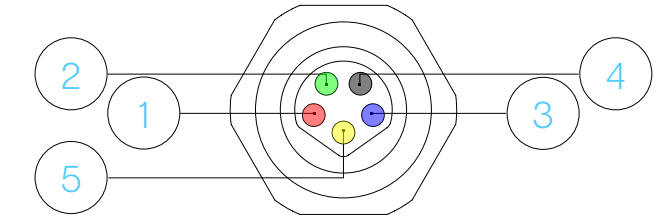
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Description	Details	Description	Details
1 Bearing Cup/ Pulley	Aluminum	5 Motor Cable	6 mm PU Cable
2 Motor Bearing Cup	Aluminum or Stainless Steel	6 Motor Connector	M8 5-pin Snap-in
3 Motor Cartridge	ASMDR24 or AS MDR48	7 Mounting Shaft	Springloaded Hex 11 or Female Thread M8x15
4 Tube 50x1.5 mm	Zinc-plated or Stainless Steel	8 Mounting Shaft Motor Side	M12x1,75 18 mm

### Motor Connector specifications

ASMDR24 | ASMDR48 Motor driven roller

Motor Connector	1	24 V/ 48 V   Red   0.34 mm <sup>2</sup>
	2	Direction   Green   0.25 mm <sup>2</sup>
	3	GND   Blue   0.34 mm <sup>2</sup>
	4	Error/ Pulse   Black   0.25 mm <sup>2</sup>
	5	Speed   Yellow   0.25 mm <sup>2</sup>
	6	



### Pin-out Specifications

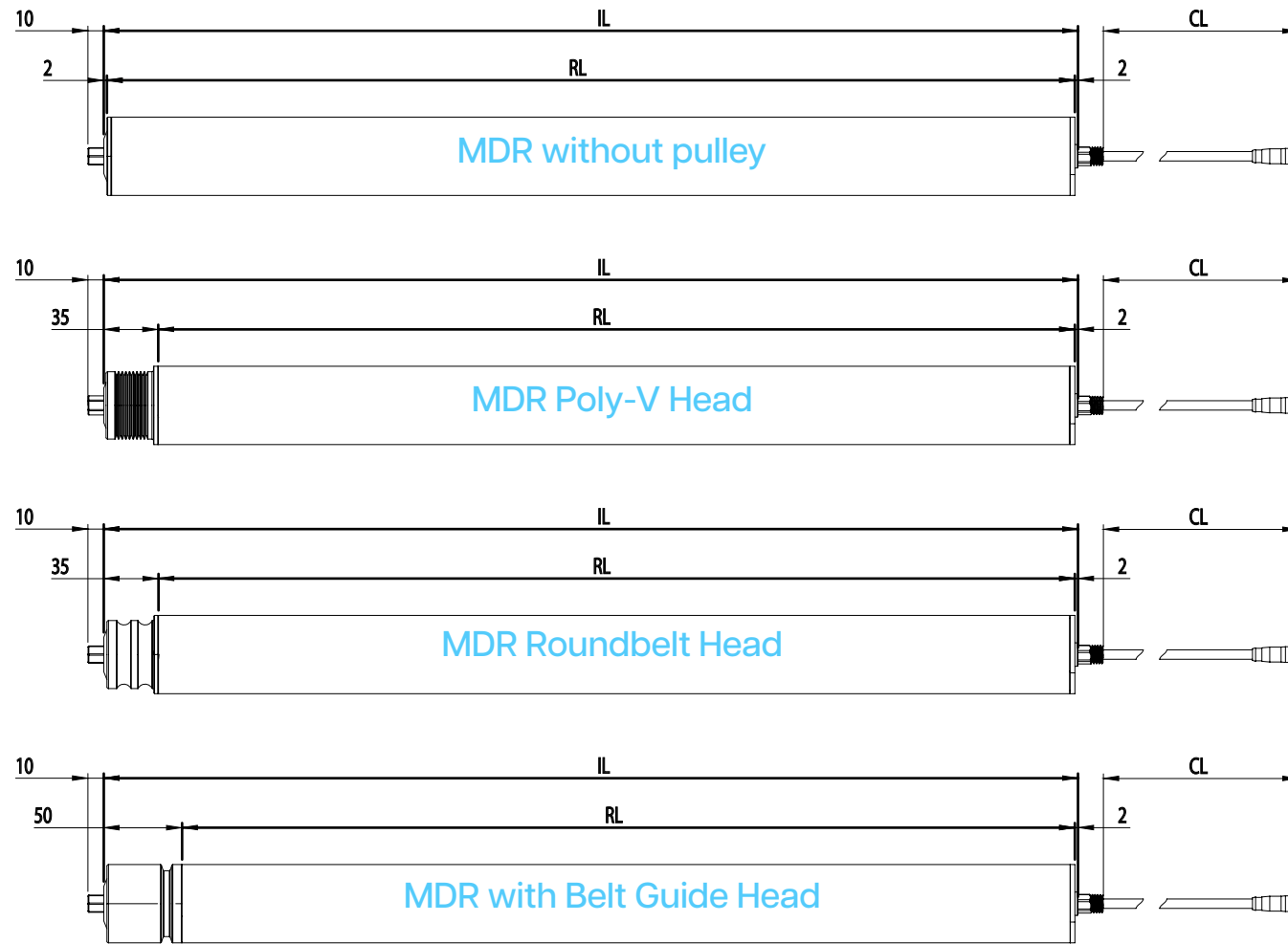
Pin	Colour	Function	Value and Parameters	ASMDR 24 VDC	AS MDR 48 VDC
1	Red	Power in (+)	Rated Voltage Voltage Range	24 VDC <sup>1</sup> 18 - 28 VDC	48 VDC <sup>1</sup> 36 - 56 VDC
2	Green	Direction	'Low' = < 4VDC Counter Clockwise (CCW) 'High' = > 7 VDC Clockwise (CW)		
3	Blue	Ground (-)	Ground (0 V)		
4	Black	Error + Feedback	Open Collector = 24VDC when an error occurs Error modes: 1. Motor Stall <sup>2</sup>   2. Overcurrent   3. Overvoltage   4. Undervoltage   5. Overtemperature  Speed Feedback: A speed feedback signal is superposed on the error signal <sup>2</sup>	U <sup>max</sup> = 30VDC Error = High No Error = Low	I <sup>max</sup> = 5 mA  24VDC 0 VDC
5	Yellow	Speed Control	Analog speed control Analog speed feedback Analog start   Analog stop  PWM speed control PWM speed feedback PWM start   PWM Stop	2.3 VDC = 23 % 2.3 VDC = 23 % Start = >2.3 VDC	9.5 VDC = 100% 9.5 VDC = 100% Stop = < 2 VDC  100% DUTY = 100 % Level = 10V @250us Stop = < 23 %

### Additional information

- The motor stall protection only works with AS Motor Controllers or motor controllers of other brands that support this functionality.
- This speed feedback is a pulse train based on the internal encoder of the motor. When not using an AS Motor controller this may be detected as an error situation by the controller. It is possible to order the motor with this functionality disabled.
- Do not power the 24 VDC MDR with a 48 VDC Power Supply or the 48 VDC MDR with a 24 VDC Power Supply.

## ASMDR24 | ASMDR48 Motor driven rollers

BLDC Motor	S1 S4	12 KHz PWM	Analog 0 -10 V	24 V 90 Watt	48 V 90 Watt
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### Dimensions and variations

Automation Supply MDRs are available in the below configurations and with a minimum and maximum length. You can download our CAD drawings for more specific dimensions.

- IL = in between frame lengths in millimeters
- RL = is the effective roller surface in millimeters
- CL = is the cable length, standard 1000 millimeters

Pulley variations	Specifications	Material	Tube sizes (Ø mm)	Min   Max length (mm)
1 None	Springloaded HEX 11	Aluminum anodized	50   60   80	300   1240
2 Poly-V Head	Springloaded HEX 11   9 ribs	Aluminum anodized	50   60	300   1240
3 Roundbelt Head	Springloaded HEX 11   2 grooves	Aluminum anodized	50	300   1240
4 Belt Guide Head	Springloaded HEX 11   1 groove	Aluminum anodized	50   60	300   1240
5 Timing Belt Head	Springloaded HEX 11   1 or 2 head	Aluminum anodized	50   60   80	300   1240
6 Chain Sprocket Head	Springloaded HEX 11   1 or 2 sprockets	Aluminum anodized	50   60   80   89	300   1240

### Gear ratios and torque specifications

ASMDR24 | ASMDR48 Motor driven roller

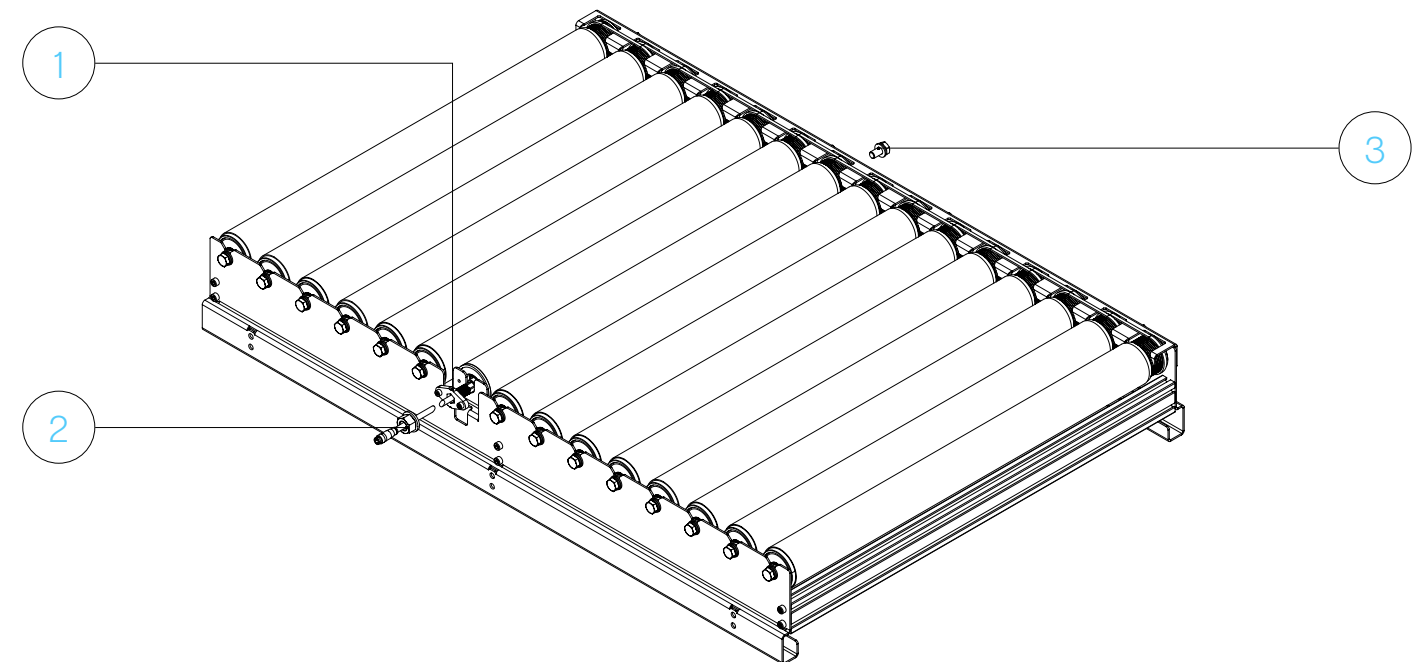
Gear ratio	Rated Speed RPM	Conveying speed 50 mm roller m/s	Rated torque Nm	Max torque Nm	Holding torque Nm	Gear stages
1:6	Min: 210 Max:1033	2.60	0.5	1.25	1.00	1
1:12	Min: 110 Max:506	1.30	0.9	2.25	1.80	2
1:36	Min: 35 Max:172	0.43	2.60	6.50	5.20	2
1:126	Min: 10 Max:49	0.12	8.30	20.75	16.60	3
1:216	Min: 6 Max:30	0.08	13.0	32.50	26.00	3

We have chosen the above gear ratios based on our in field experience of MDR applications for transportation boxes, pallets and sorting applications. Custom gear ratios are available upon request.

### Installation of MDR

Automation Supply MDR are used in various applications, the installation of the MDR is shown below.

- M12 Half lock nut DIN 439 B + Toothed washer DIN 6798J. Hex holes 11.2 mm, round hole 12.2 mm.
- 6 mm torque bracket, to be fastened in frame with 2x M4x12 bolt
- M12x15 bolt or none when using HEX 11 springloaded shaft



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Motor

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S4

12 KHz  
PWM

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90 Watt

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## Example applications

ASMDR24 and ASMDR48 can be used in any common intralogistics solutions and beyond. From typical transportation conveyors, divert & merge modules and many more. Learn more on [www.automationsupply.nl](http://www.automationsupply.nl)



### Disclaimer

AS and AS partners are not responsible for integration and usage of our products outside of the specified application range, technical specifications and in combination with third party components.

Images may differ from the actual product due to our continuous product improvement.



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