WDD140x-BA

Robust, high-performance direct drive for bidirectional vehicles with increased load requirements.

Applications

The WDD140x-BA combines the advantages of a gearless direct drive with a larger motor platform.

The larger diameter enables higher power and torque output, making the drive the ideal solution for demanding mobile applications.



Features & Benefits

- **Higher performance reserves:** More torque due to larger motor diameter
- **Suitable for heavy loads:** Reliable performance even under high stress
- **Gearless design:** Less wear, less maintenance, more availability
- **Energy efficient operation:** High efficiency for long periods of use
- **48V technology:** Seamless integration into modern vehicle architectures
- **Integrated holding brake:** Safe holding at a standstill
- **Flexible electronics options:** Optionally with integrated power electronics or for decentralized control
- **Advanced safety:** With integrated electronics with safe motion functions such as STO, SBC and SLS
- **Diverse encoder integration:** Numerous encoder variants for versions without an integrated Motor Controller

Technical data

		WDD140I-BA with integrated Motor Controller	WDD140E-BA without integrated Motor Controller
Rated voltage	VDC	48	48
Rated power	W	185	185
Speed	m/s	0 - 3.0	0 - 3.0
Rated torque	Nm	4.3	4.3
Maximum torque	Nm	16.4	16.4
Rated current	ADC	5.5	-
Maximum current	ADC	45.0	-
Rated current	Arms	-	11.4
Maximum current	Arms	-	53.6

WDD140x-BA with Motor Controller

		WDD140x-BA with integrated Motor Controller
Max. wheel load*	kg	150
Wheel diameter	mm	140
Ambient temperature	°C	0…40
Relative humidity		<80%, non-condensing
Temperature sensor		PTC
Feedback		2 magn. Encoders
Supply voltage	VDC	integrated in the Motor Controller
Motor commutation signals		
Resolution	Bit	19 per mag. Encoder
brake		integrated motor brake
Braking torque	Nm	10
Voltage	VDC	integrated in the Motor Controller

* Base 20,000 h, duty cycle = 60%, with combined radial and axial force.

Connections supply voltage

Pin	Description	Presentation
1	Supply 48 VDC	 M16 / 3-pin (3x2)/male
2	Supply GND	
3	n.c.	

EtherCAT In connections

Pin	Description	Presentation
1	RX-	 M8 A-coded 4-pin/male
2	RX+	
3	TX-	
4	TX+	

EtherCAT Out connections

Pin	Description	Presentation
1	RX-	 M8 A-coded 4-pin/female
2	RX+	
3	TX-	
4	TX+	

WDD140x-BA without Motor Controller

		WDD140x-BA without integrated Motor Controller
Max. wheel load*	kg	150
Wheel diameter	mm	140
Ambient temperature	°C	0...40
Relative humidity		<80%, non-condensing
Temperature sensor		PTC
Feedback		1 mag. Encoder
Supply voltage	VDC	5
Motor commutation signals		BiSS-C / asynchronous / serial / PWM / SSI / SPI
Resolution	Bit	14
brake		Spring-applied brake
Braking torque	Nm	12
Voltage	VDC	24

* Base 20,000 h, duty cycle = 60%, with combined radial and axial force

Motor cable connections

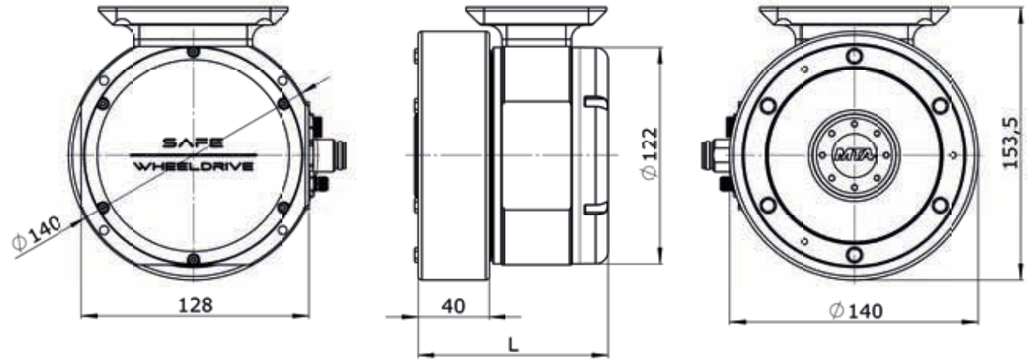
Pin	Description	Presentation
1	U	M16 / 3-pin (3x2)/male
2	V	
3	W	

Sensor cable connections

Pin	Description	Presentation
1	0 VDC	 M16 / 18-pin/male
2	+5 VDC	
3	Z-	
4	Z+	
5	B-	
6	B+	
7	A-	
8	A+	
9	W	
10	V	
11	U	
12	TEMP	
13	Brake-	
14	Brake+	
15-18	n.c.	

Dimensions

	L
without Motor Controller	97.5
with Motor Controller	107



WDD140x-BB

Maximum performance for bidirectional vehicles with the highest demands on dynamics and load capacity.

Applications

The WDD140x-BB is the most powerful version of the WDD series.

Thanks to the combination of larger diameter and extended design, it offers maximum torque and power reserves for heavy loads and demanding driving profiles.



Features & Benefits

- **Maximum power density:** Highest torque in the WDD series
- **For demanding driving profiles:** Ideal for high accelerations and heavy loads
- **Gearless design:** Quiet, precise and low-maintenance
- **High energy efficiency:** Efficient operation despite high performance reserves
- **48V technology:** Optimized for modern AGV and robotics platforms
- **Integrated holding brake:** Safe holding at a standstill
- **Flexible electronics options:** Optionally with integrated power electronics or for external control
- **Advanced safety:** With integrated electronics with safe motion functions such as STO, SBC and SLS
- **Diverse encoder integration:** Numerous encoder variants for versions without integrated electronics

Technical data

		WDD140I-BB with integrated Motor Controller	WDD140E-BB without integrated Motor Controller
Rated voltage	VDC	48	48
Rated power	W	270	270
Rated speed	rpm	410	410
Speed	m/s	0 - 3.0	0 - 3.0
Rated torque	Nm	6.24	6.24
Maximum torque	Nm	25.0	25.0
Rated current	ADC	12.2	-
Maximum current	ADC	45.0	56.0
Rated current	Arms	-	7.2
Maximum current	Arms	-	56.0

WDD140x-BB with Motor Controller

		WDD140x-BB with integrated Motor Controller
Max. wheel load*	kg	150
Wheel diameter	mm	140
Ambient temperature	°C	0...40
Relative humidity		<80%, non-condensing
Temperature sensor		PTC
Feedback		2 magn. Encoders
Supply voltage	VDC	integrated in the Motor Controller
Motor commutation signals		
Resolution	Bit	19 per mag. Encoder
brake		integrated motor brake
Braking torque	Nm	10
Voltage	VDC	integrated in the Motor Controller

* Base 20,000 h, duty cycle = 60%, with combined radial and axial force.

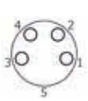
Connections supply voltage

Pin	Description	Presentation
1	Supply 48 VDC	 M16 / 3-pin (3x2)/male
2	Supply GND	
3	n.c.	

EtherCAT In connections

Pin	Description	Presentation
1	RX-	 M8 A-coded 4-pin/male
2	RX+	
3	TX-	
4	TX+	

EtherCAT Out connections

Pin	Description	Presentation
1	RX-	 M8 A-coded 4-pin/female
2	RX+	
3	TX-	
4	TX+	

WDD140x-BB without Motor Controller

		WDD140x-BB without integrated Motor Controller
Max. wheel load*	kg	150
Wheel diameter	mm	140
Ambient temperature	°C	0…40
Relative humidity		<80%, non-condensing
Temperature sensor		PTC
Feedback		1 mag. Encoder
Supply voltage	VDC	5
Motor commutation signals		BiSS-C / asynchronous / serial / PWM / SSI / SPI
Resolution	Bit	14
brake		Spring-applied brake
Braking torque	Nm	12
Voltage	VDC	24

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Motor cable connections

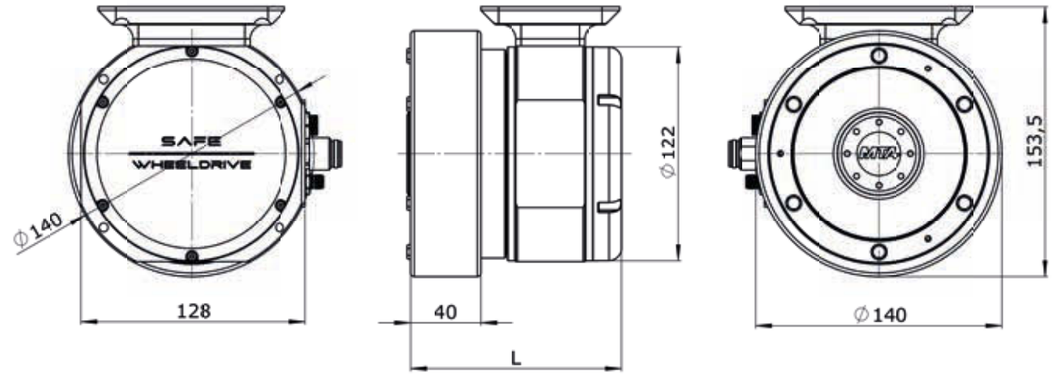
Pin	Description	Presentation
1	U	 M16 / 3-pin (3x2)/male
2	V	
3	W	

Sensor cable connections

Pin	Description	Presentation
1	0 VDC	 M16 / 18-pin/male
2	+5 VDC	
3	Z-	
4	Z+	
5	B-	
6	B+	
7	A-	
8	A+	
9	W	
10	V	
11	U	
12	TEMP	
13	Brake-	
14	Brake+	
15-18	n.c.	

Dimensions

	L
without Motor Controller	110.5
with Motor Controller	120



WDD140x-BB

Modular and flexibly configurable

The drive platform can be optimally adapted to different vehicle and integration requirements.

