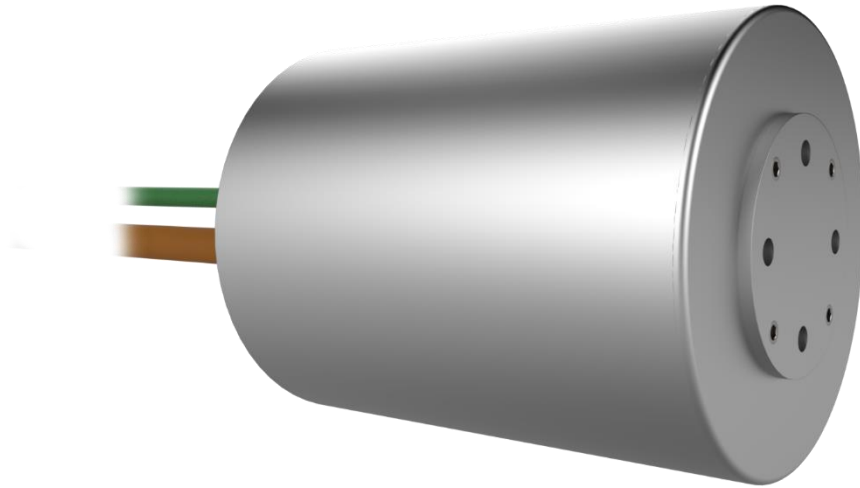


Wheel hub drive ***XANTHOS 50***



The XANTHOS 50 motor rollers come with very powerful, yet efficient, synchronous motors, which have been designed using the very latest calculation methods for the application in question. The version is gearless. Designed as a direct drive, the XANTHOS 50 achieves an extremely long service life as no wear parts are used. The motor rollers can be adapted to the respective application with regard to their connection dimensions and mechanical/electrical interfaces

Characteristics

Applications

- Sorter applications
- Drive for roller conveyors

Features

- External rotor technology,
Gearless version
- Synchronous technology,
Outstanding energy efficiency
- Maintenance-free
- Reversible
- Increased protection
standards

Technical data

Technical data	
Motor type	Synchronous motor
Insulation class of the motor winding	Class F
Voltage	24VDC
Protection type	IP54 (on request IP67)
Noise level	< 48dB (depending on the application)
Length of motor cable	500*
Minimum clamping length	up to 35mm
Ambient temperature	0 to 40
Version A side	Axis M12 x 1, hexagon SW11
Pipe wall thickness	Ø 50 x 1.5
Pipe material	Galvanised steel / stainless steel / plastic
Pipe sleeve	PVC hose, PU hose, rubber coating
Pipe	straight



*Dimensions and design can be adapted according to the customer.

Electric connection XANTHOS 50 motor roller

The following encoder systems are available for operating the motor rollers:

- Sensorless control
- Digital reverberation sensors

Pin assignment sensorless control

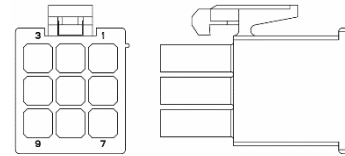
Signal	Pin	Description	Wire colour	
U	1	Motor phase U	Brown	
V	2	Motor phase V	White	
W	3	Motor phase W	Black	
NP	4	Neutral point	Blue	
PE	5	Earth	Grey	
Cable specification:		Connector specification:		
Construction:		Type:		
Material:		Coding:		
Nominal voltage:		Gender:		
Outer diameter:		Number of pins:		
Temperature:		Manufacturer:		
unmoved:				
moved:				
Certification:				
Halogen free				

Pin assignment for reverberation sensor (hybrid cable with combined motor and encoder cable):

Signal	Pin	Description	Wire colour	
U	2	Motor phase U	Grey	
V	1	Motor phase V	Brown	
W	3	Motor phase W	Black	
	4	n.c.		
GND	5	GND reverberation sensor	White	
5V	6	5V supply reverberation sensor	Brown	
H1	7	Reverberation sensor 1	Red	
H2	8	Reverberation sensor 2	pink	
H3	9	Reverberation sensor 3	Yellow	
Cable specification:		Connector specification:		
Construction:		Type:		
Material:		Gender:		
Nominal voltage:		Number of pins:		
Outer diameter:		Manufacturer:		
Temperature:				
unmoved:				
moved:				
Certification:				
Halogen free				

Pin assignment for reverberation sensor (hybrid cable with combined motor and encoder cable):

Signal	Pin	Description	Wire colour
U	2	Motor phase U	Grey
V	1	Motor phase V	Brown
W	3	Motor phase W	Black
	4	n.c.	
GND	5	GND reverberation sensor	White
5V	6	5V supply reverberation sensor	Brown
H1	7	Reverberation sensor 1	Red
H2	8	Reverberation sensor 2	pink
H3	9	Reverberation sensor 3	Yellow
Cable specification:		Connector specification:	
Construction:	3 x AWG16 + 5 x AWG2 unshielded	Type:	Mini Mate-N-Lok Pin
Material:	PUR, black	Gender:	
Nominal voltage:	300V	Number of pins:	9 (3 rows)
Outer diameter:	7.4 +/-0.2mm	Manufacturer:	TE
Temperature:	unmoved: -40°C ... +80°C moved: -25°C ... +80°C		
Certification:	CE, UL		
Halogen free	Yes		



On request, the connection cables can be supplied with open ends or with pre-assembled connection plugs. Connection plugs can be customised on customer request.

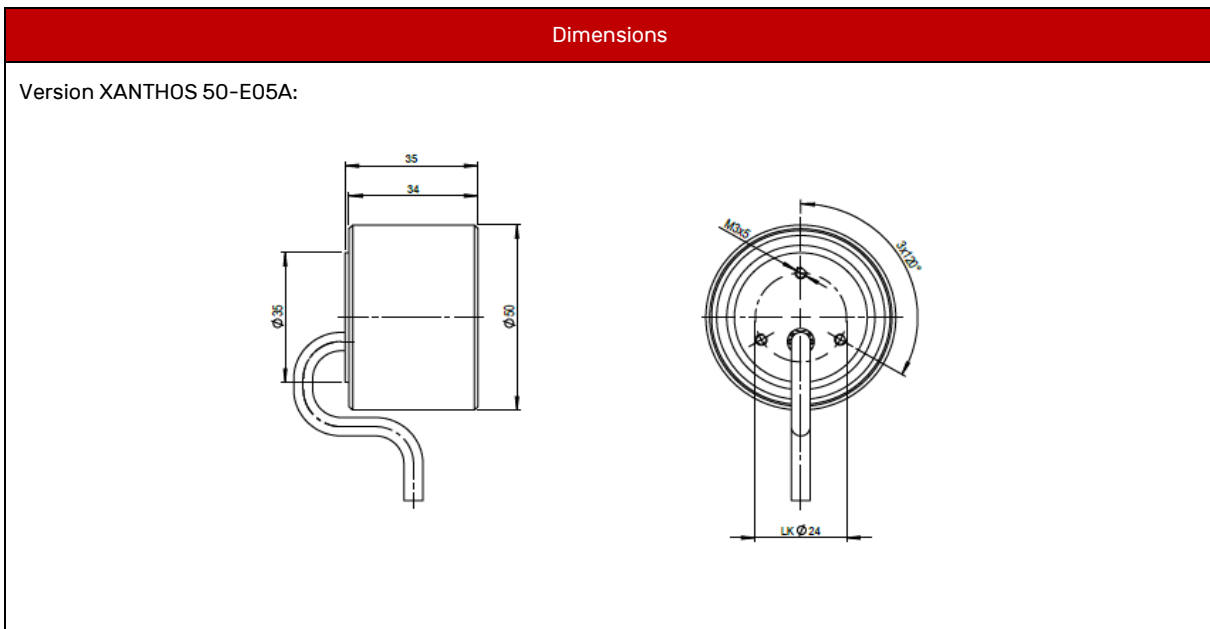
The following tables show motor variants with the corresponding power rating.

Design variants XANTHOS 50 motor roller

Performance data		XANTHOS 50-E05A
Nominal voltage	VDC	24VDC
Nominal current	A	1.4
Nominal torque	Nm	0.15
Nominal speed	rpm	900
Permissible peak current	A	3.4
Maximum torque	Nm	0.3
Continuous power output	W	12.56
Torque constant	Nm/A	0.1
Phase resistance	Ω	1.9
Connection inductance L_q	mH	0.98
Connection inductance L_d	mH	0.81
Winding connection		Star
Number of pole pairs		7

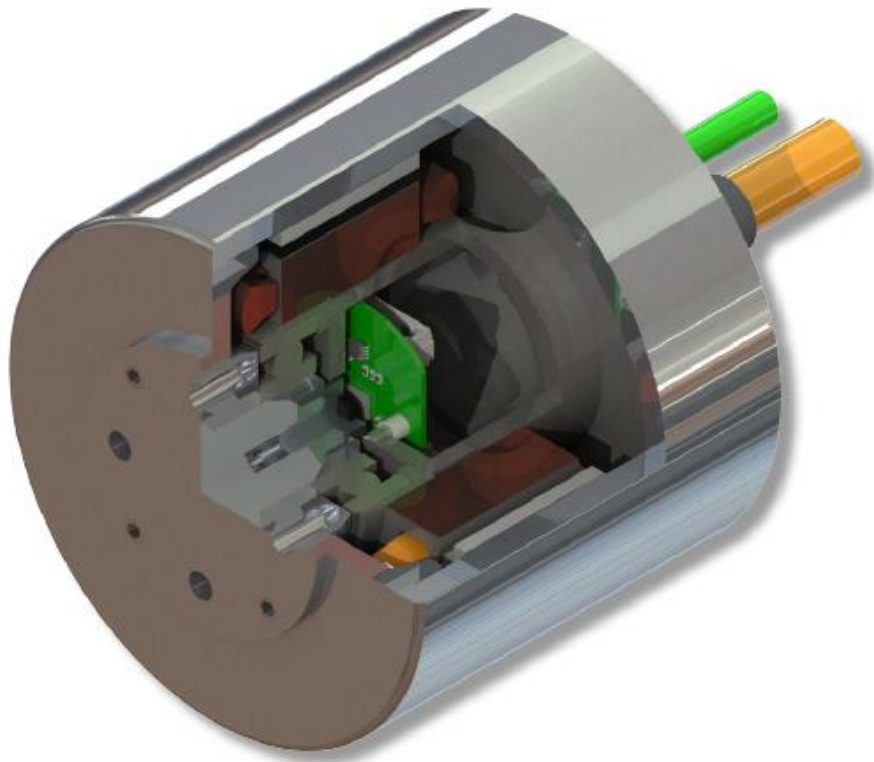


On request, further direct drives with higher torques or outputs are available.



Depending on the mechanical structure of the target application (for example, the sorter), the mechanical design of the XANTHOS 50 motor roller can be adapted.

Wheel hub drive **XANTHOS**



This external rotor hub drive scores with its compact design and very good controllability even at low speeds.

The housing is designed in such a way that rubber can be vulcanized directly onto the rotor housing. Therefore, the housing also acts as a wheel at the same time. The encoder system used is a magnetic angle encoder with 1024 increments, which corresponds to a resolution of 12 bits. Due to the high number of pole pairs and the accuracy of the angle encoder, it is possible without gears to achieve very low speeds "smoothly".

Since the system works gearless, there is no abrasion in the interior which increases the service life.

This is further enhanced by the use of high quality materials.

Technical data

General

Technical data		
Motor type		Xanthos 90E30B
Nominal voltage	VDC	48
Nominal speed	rpm	700
Nominal torque	Nm	3.5
Maximum torque	Nm	12
Rated capacity	W	250
Noise level	dB	
Temperature sensor		PTC
Ambient temperature	°C	0 ... 40
Protection class		IP54
Sealing:		Groove ball bearing with 2 Z washers
Dimensions (LxD):	mm	75 x 90

Motor

Technical data		
Type		Xanthos 90E30B
Nominal voltage	VDC	48
Nominal current	A	6.31
Nominal torque	Nm	3.5
Maximum torque	Nm	12
Nominal speed	rpm	700
Permissible peak current	A	23
Torque constant	Nm/A	0.554
Phase resistance (at 20°C)	Ω	0.414
Connection inductance L_q	mH	0.9297
Connection inductance L_d	mH	0.8798
Winding connection		Star
Number of pole pairs		7

Angle encoder

Technical data		AS5047P
Type		magnetic encoder
Supply voltage	VDC	5
Signals		A, A/, B, B/, I, I/, PWM, PWM/
Increments per revolution		1024
Resolution	Bit	12



Terminal configuration



The delivery of the connecting cables is with open ends. On request, the delivery can be made with pre-assembled connectors. Cable lengths can be adapted according to the customer.

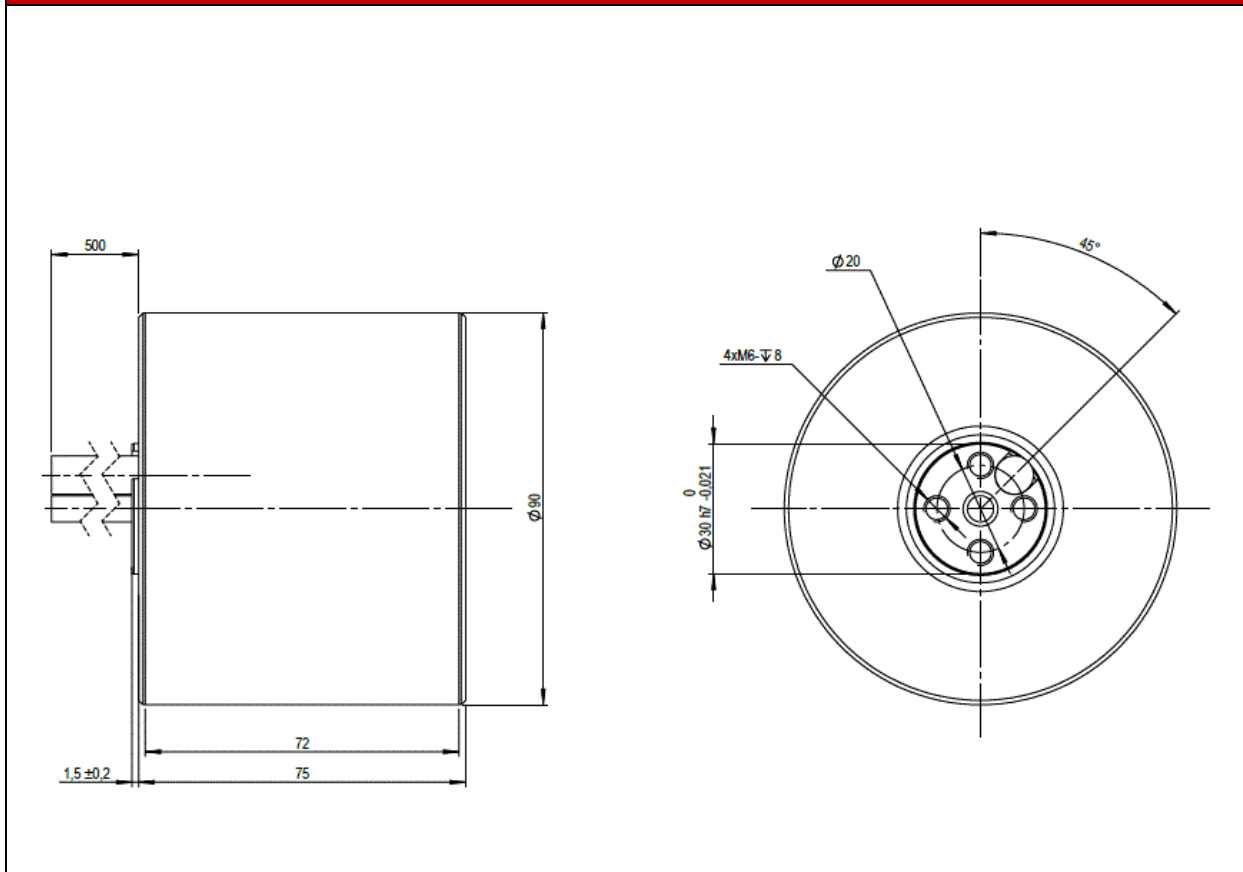
Motor cable

Signal	Pin	Description	Wire colour
U	1	Motor phase U	Black 1
V	2	Motor phase V	Black 2
W	3	Motor phase W	Black 3
PE	4	not connected	Yellow/green

Encoder cable

Signal	Pin	Description	Wire colour
5 VDC	2	Supply +	Green / white
GND	1	Ground	Green / brown
A	8	Track A	Red
B	6	Track B	Grey
I	4	Track I	Yellow
/A	7	inv. Track A	Black
/B	5	inv. Track B	Pink
/I	3	inv. Track I	Purple
PWM	10	Track PWM	Brown
/PWM	9	inv. Track PWM	Green

Dimensions



PROMETHEUS drive controller. One controller for two drives!

The two-axis controller PROMETHEUS is available as the optimum drive controller for the wheel hub motor. With this drive controller, two motors can be controlled with one controller. Communication takes place via CAN. Optionally, communication can take place via ProfiNET or EtherCAT (Q3/2019). With the integrated STO function, the functional safety "safe torque off" is also available directly on the drive controller for both axes. Detailed information can be found in the documentation PROMETHEUS Two-axis controller.