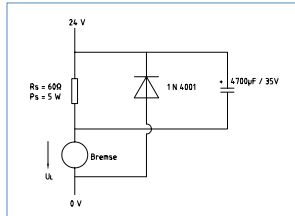


Brakes



The safety brakes from Nanotec have a compact flange design, are low-wear and are equipped with asbestos-free friction linings. They offer a simple and fast installation through the fixed, set air gap. The brakes are electromagnetically released and are used wherever a moving load needs to be decelerated within a short period or held in position and the brake torque generated must be available, even in the case of an interruption of the power supply. The braking force is applied by a compression spring (BW and BL brakes) or a permanent magnet (BKE brake). With all brakes, a voltage of 24 V DC has to be applied during release.

Brake type BL



Technical data

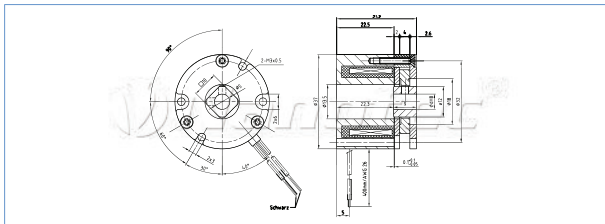
Electrical data: 24 V DC/5 W
Inertia torque: 0.01 kg/cm²
On/Off switching time: 11 ms/17 ms
Nominal torque: 0.24 Nm
Hub: Borehole Ø5H7 with 2 grub screws M3
Fastener: With 3 screws M2.5
Connection: Leads L = 400 mm
Weight: 0.1 kg
 Mounting option: Series 40 motor with B shaft

Order identifier

BRAKE-BL - 0.24 - (5.0)

5.0 = ID hub borehole 5.0

Dimension image (in mm)



Brake type BW



Technical data

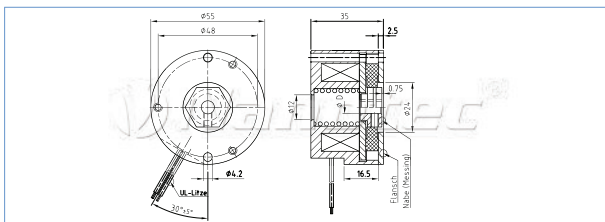
Electrical data: 24 V DC/10 W
Inertia torque: 0.1 kg/cm²
On/Off switching time: 35 ms/25 ms
Nominal torque: 1.4 Nm
Hub: Borehole ... H7 with 2 grub screws M4
Fastener: with 2 stud screws M3 or M4
Connection: Leads L = 400 mm
Weight: 0.5 kg
 Mounting option: 56 series motor with B shaft

Order identifier

BRAKE-BW - 1.4 - (6.3)

6.3 = hub borehole 6.35
 9.5 = hub borehole 9.525

Dimension image (in mm)



Brakes



Integrated brakes with plug connection allow operation in tough ambient conditions (IP54) and ensure fast and mistake-free wiring. The BKE brakes with the Nano brake module are used for this purpose.

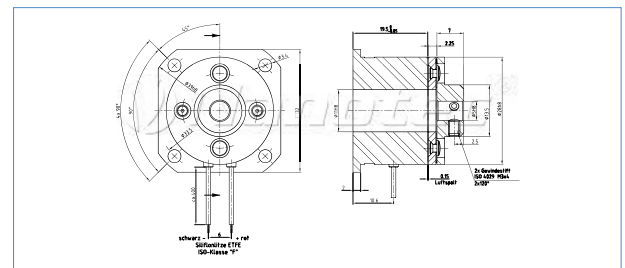
The Nano brake module (PWM controller) reduces the power and heat losses of the brake by 35% thus enabling a higher stopping and activation time of the motor.

The anti-surge diode for the brake is also already integrated in the module.

Technical data

Electrical data: 24 V DC/8 W
Inertia torque: 0.013 kg/cm²
On/Off switching time: 10 ms/6 ms
Nominal torque: 0.4 Nm
Hub: Borehole ... H8 with 2 grub screws AM3x4
Fastener: With 4 M3 screws
Connection: Leads L = 400 mm
Weight: 0.08 kg

Dimension image (in mm)



Order identifier

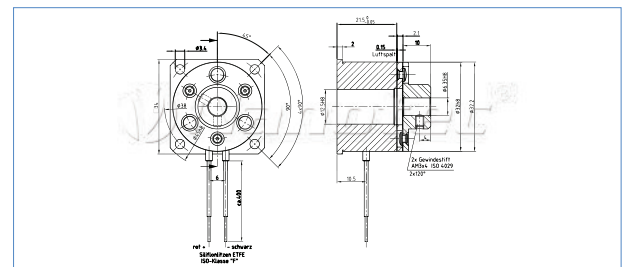
BRAKE-BKE - 0.4 - (5.0)

5.0 = ID hub hole 5.0

Technical data

Electrical data: 24 V DC/10 W
Inertia torque: 0.021 kg/cm²
On/Off switching time: 12 ms/6 ms
Nominal torque: 1 Nm
Hub: Borehole ... H8 with 2 grub screws AM3x4
Fastener: With 4 M3 screws
Connection: Leads L = 400 mm
Weight: 0.11 kg

Dimension image (in mm)



Order identifier

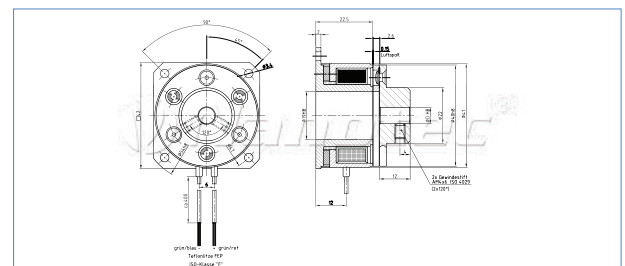
BRAKE-BKE - 1.0 - (6.35)

6.35 = ID hub borehole 6.35

Technical data

Electrical data: 24 V DC/11 W
Inertia torque: 0.067 kg/cm²
On/Off switching time: 25 ms/6 ms
Nominal torque: 2 Nm
Hub: Borehole ... H8 with 2 grub screws AM4x6
Fastener: With 4 M3 screws
Connection: Leads L = 400 mm
Weight: 0.185 kg

Dimension image (in mm)



Order identifier

BRAKE-BKE - 2.0 - (6.35)

6.35 = ID hub borehole 6.35
 8.0 = ID hub borehole 8.0

Switch-mode power supplies for DIN top hat rail 120 - 480 W (sealed construction)



Pin configuration

NTS-24 V-5 A; NTS-24 V-10 A
NTS-48 V-2.5 A; NTS-48 V-5 A

Pin	Designation	
1		RDY
2		
3	out	V+ DC
4		V- DC
5		V.DC
6		V.DC
7		PE, grounding
8	in	L
9		N
	other	DC On
		DC Lo
		V _{adj} Adj.

NTS-48 V-10 A

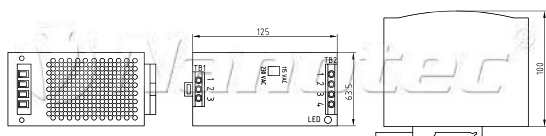
TB1 =	AC input
1 =	FG grounding
2 =	AC/N
3 =	AC/L
TB2 =	DC output
1.2 =	+V
3.4 =	-V

Technical data (all values related to 230 V AC/25 °C)

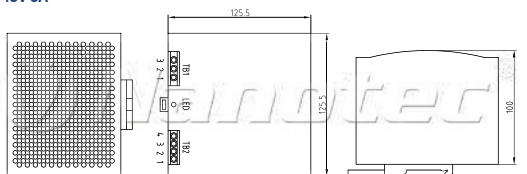
Input voltage:	180 V AC to 264 V AC
Output voltage:	24 V, 48 V
Safety:	Soft start
Protective circuit:	Overload/overvoltage protection, over-bridging loss of power 20 ms below full load, short-circuit proof
Temperature range:	-10 °C to +50 °C (up to +70 °C at 60% load)
Approvals:	CE /UL/TÜV
Efficiency:	86%
Type of connection:	Screw clamps
Fastening type:	DIN carrying rail

Dimension image (mm)

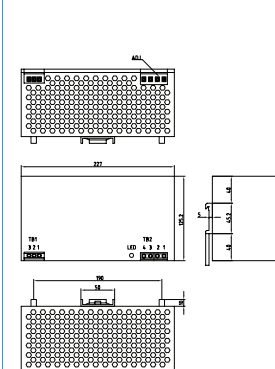
NTS-24V-5A
NTS-48V-2.5A



NTS-24V-10A
NTS-48V-5A



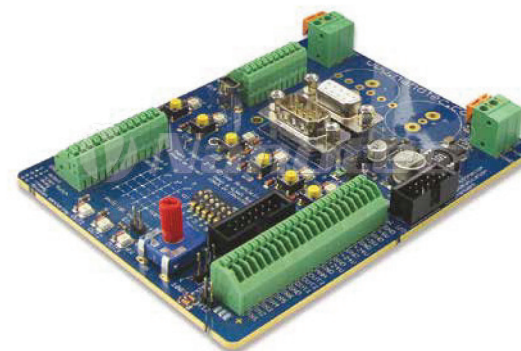
NTS-48V-10A



Technical data

	NTS-24V-5A(120 W)	NTS-48V-2.5A(120 W)	NTS-24V-10A(240 W)	NTS-48V-5A(240 W)	NTS-48V-10A(480 W)
Nominal input current:	1.4 A/230 V	1.4 A/230 V	2.2 A/230 V	2.2 A/230 V	4.0 A/230 V
Input current (cold start):	20 A/115 V 40 A/230 V	20 A/115 V 40 A/230 V	27 A/115 V 45 A/230 V	27 A/115 V 45 A/230 V	40 A/230 V
Output voltage:	24 ~ 32 V	46 ~ 57 V	24 ~ 32 V	46 ~ 57 V	48 ~ 53 V
Power output:	120 W (24 V/5 A)	120 W (48 V/2.5 A)	240 W (24 V/10.0 A)	240 W (48 V/5 A)	480 W (48 V/10 A)
Weight:	0.64 kg	0.64 kg	1.0 kg	1.0 kg	2.2 kg

Setup board ZIB2-PDx-N



Setup and installation of the Nanotec motor controllers and Plug & Drive motors is even more comfortable with the ZIB2 test board.

Technical data

Operating voltage:	24–48 V DC
Interface:	RS485 or CANopen

Functions

Test function for digital I/Os,
direct carrying of the signals on external
sensors/actuators, networking option

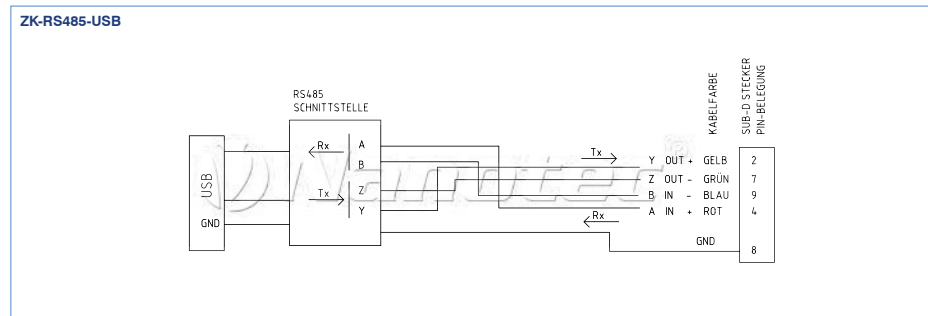
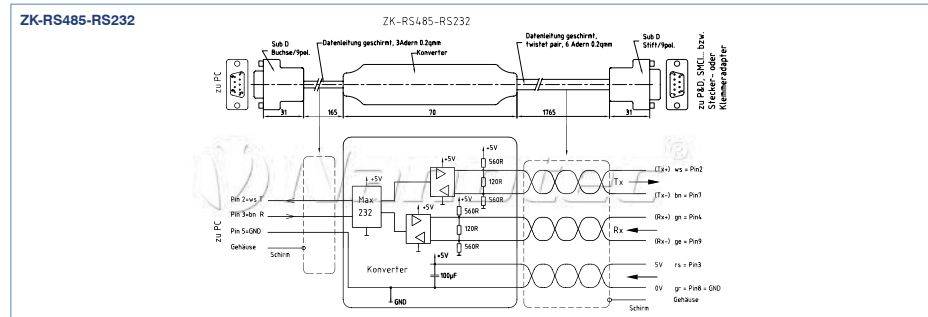
Order identifier

ZIB2-PDx-N

■ Connection cable



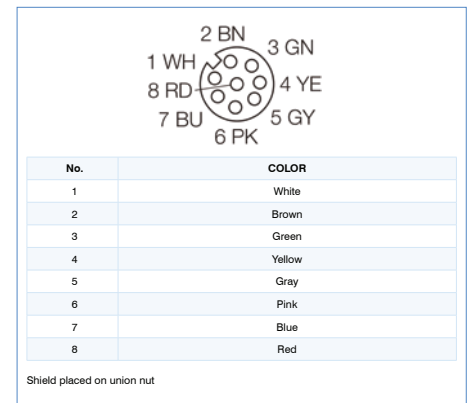
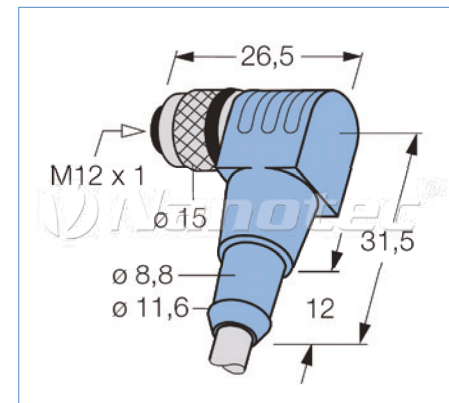
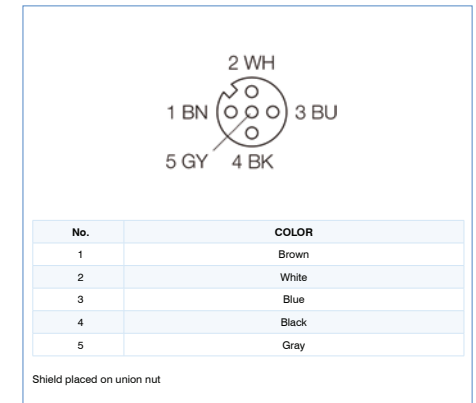
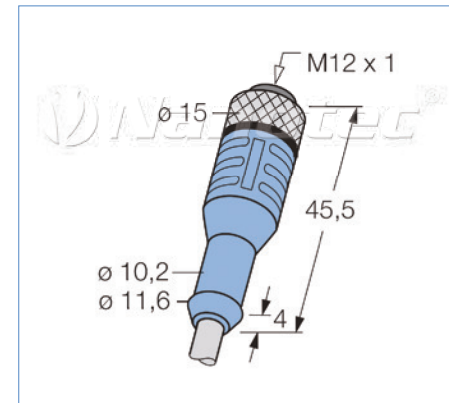
Order identifier	
Interface converter	
ZK-RS485-RS232	Converter from RS232 to RS485, 4-wire
ZK-RS485-USB	Converter from USB to RS485, 4-wire
ZK-RS232-USB-3.3V	Converter RS232-USB (TTL for SMC135)



■ Connection cable

Order identifier	
M12 cable for AS and AD motors with encoder	
ZK-M12-8-2M-1-PUR-S	8-pin, 2 m, straight connector, shielded
ZK-M12-8-5M-1-PUR-S	8-pin, 5 m, straight connector, shielded
ZK-M12-8-2M-2-PUR-S	8-pin, 2 m, angled connector, shielded
ZK-M12-8-5M-2-PUR-S	8-pin, 5 m, angled connector, shielded

Order identifier	
M12 motor connection cable for AS motors	
ZK-M12-5-2M-1-PUR-S	5-pin, 2 m, straight connector, shielded
ZK-M12-5-5M-1-PUR-S	5-pin, 5 m, straight connector, shielded
ZK-M12-5-2M-2-PUR-S	5-pin, 2 m, angled connector, shielded
ZK-M12-5-5M-2-PUR-S	5-pin, 5 m, angled connector, shielded



Order identifier	
Diverse cable sets	
ZK-SMC11	Assembled cable set for SMC11/G/GE, L=300 mm
ZK-SMC12	Assembled cable set for SMC12
ZK-SMC12-3	Assembled cable set for SMC12 with CANopen
ZK-USB	Programming cable for SMC13-1

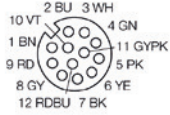
Connection cable

Order identifier			
M16 motor cable for ASB42		M12 signal cable for ASB42, ASB87, AS8918	
2K-TW-4-2M	Motor cable, 7-pin, 2 m, straight connector	ZK-M12-12-2M-1-PUR-S	Signal cable, 12-pin, 2 m, straight connector, shielded

Pin configuration: ZK-TW-4-2M

2K-TW-4-2M		
PIN NO.	Wire no./COLOR	Function
1	1	Phase U
2	-	-
3	2	Phase V
4	-	-
5	3	Phase W
6	-	-
7	Green/yellow	Protective conductor

Pin configuration: ZK-M12-12-2M-1-PUR-S



ZK-M12-12-2M	
PIN NO.	COLOR
1	Brown
2	Blue
3	White
4	Green
5	Pink
6	Yellow
7	Black
8	Gray
9	Red
10	Violet
11	Gray/pink
12	Red/blue

Order identifier	
M16 motor cable for ASB87, AS8918	

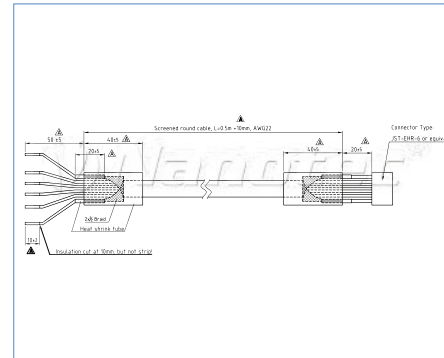
2K-TW-7-2M Motor cable, 7-pin, 2 m, straight connector

Pin configuration: ZK-TW-7-2M

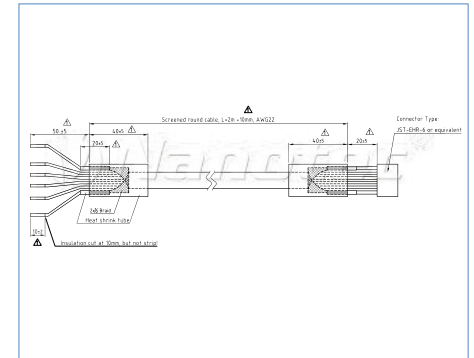
2K-TW-7-2M			
PIN NO.	Wire no./COLOR	Function ASB87	Function AS8918
1	1	Phase U	Motor A
2	2	Phase U	Motor A
3	3	Phase V	Motor B
4	4	Phase V	Motor B
5	5	Phase W	(Brake +24 V)
6	6	Phase W	(Brake GND)
7	Green/yellow	Protective conductor	Protective conductor

Order identifier	
Motor cable for SC4118 series	Motor cable for SC6018 series
ZK-JSTEHR-6-0.5M-S	ZK-JST-VHR-6N-0.5M-S
ZK-JSTEHR-6-2M-S	ZK-JST-VHR-6N-2M-S

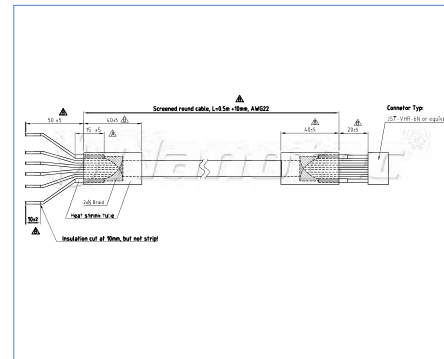
Dimension image (mm) ZK-JSTEHR-6-0.5M-S



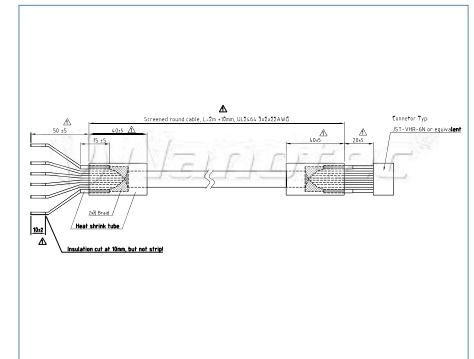
Dimension image (mm) ZK-JST-EHR-6-2M-S



Dimension image (mm) ZK-JST-VHR-6-0.5M-S



Dimension image (mm) ZK-JST-VHR-6-2M-S



Pin configuration: SC4118 and SC6018 series

Connector pin assignment JST-EHR-6/JST-VHR-6		
PIN NO.	COLOR	FUNCTION
1	Gray	shielding
2	Black	A
3	Green	A\
4	Red	B
5	Blue	B\
6	Gray	shielding

Connection cable

Order identifier

Motor cable for PD2-N4118L1804-2

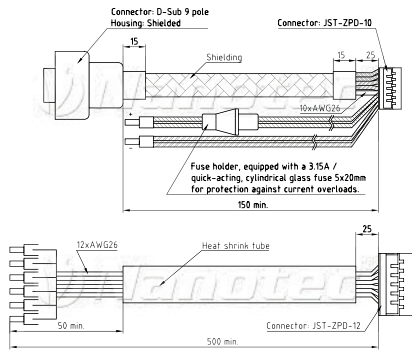
Motor cable for PD2-N4118L1804-3

ZK-PD2N

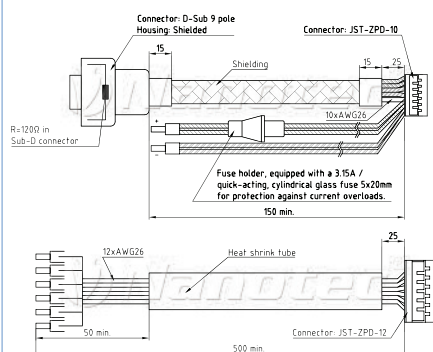
ZK-PD2N-3

Dimension image (mm)

ZK-PD2N



ZK-PD2N-3



Pin configuration: ZK-PD2N

JST ZPD-10 Housing: ZPDR-10V-S Contact:SZPD-002T-PO.3			JST ZPD12 Housing: ZPDR-12V-S Contact:SZPD-002T-PO.3		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	Blue	GND + shielding	1	Gray/brown	GND
2		n.c.	2	Black	Input 1
3	Yellow	RS485 Rx-	3	Violet	Input 2
4	Green	RS485 Rx+	4	Gray/pink	Input 3
5	Pink	RS485 Tx-	5	Red/blue	Input 4
6	Gray	RS485 Tx+	6	White/green	Input 5
7	Black	GND	7	Brown/green	Input 6
8	Brown	+VB	8	White/blue	Analog input
9	Brown	+VB	9	White/yellow	Output 1
10	Black	GND	10	Yellow/brown	Output 2
			11	White/gray	Output 3
			12	Red	GND

D-SUB FEMALE CONNECTOR			EXTERNAL I/O		
PIN NO.	COLOR	FUNCTION	COLOR	FUNCTION	
1		n.c.	Gray/brown	GND	
2	Green	RS485 Rx+	Black	Input 1	
3		n.c.	Violet	Input 2	
4	Gray	RS485 Tx+	Gray/pink	Input 3	
5		n.c.	Red/blue	Input 4	
6		n.c.	White/green	Input 5	
7	Yellow	RS485 Rx-	Brown/green	Input 6	
8	Blue	GND	White/blue	Analog input	
9	Pink	RS485 Tx-	White/yellow	Output 1	
			Yellow/brown	Output 2	
			White/gray	Output 3	
			Red	GND	

Pin configuration: ZK-PD2N-3

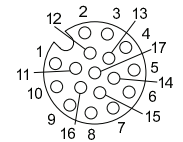
JST ZPD-10 Housing: ZPDR-10V-S Contact:SZPD-002T-PO.3			JST ZPD12 Housing: ZPDR-12V-S Contact:SZPD-002T-PO.3		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	Blue	shielding	1	Gray/brown	GND
2	Green	GND	2	Black	Input 1
3	Yellow	+ VB LOGIC	3	Violet	Input 2
4		n.c.	4	Gray/pink	Input 3
5	Pink	CAN-	5	Red/blue	Input 4
6	Gray	CAN+	6	White/green	Input 5
7	Black	GND	7	Brown/green	Input 6
8	Brown	+VB	8	White/blue	Analog input
9	Brown	+VB	9	White/yellow	Output 1
10	Black	GND	10	Yellow/brown	Output 2
			11	White/gray	Output 3
			12	Red	GND

D-SUB FEMALE CONNECTOR			EXTERNAL I/O		
PIN NO.	COLOR	FUNCTION	COLOR	FUNCTION	
1		n.c.	Gray/brown	GND	
2	Pink	CAN-	Black	Input 1	
3	Green	GND	Violet	Input 2	
4		n.c.	Gray/pink	Input 3	
5	Blue	shielding	Red/blue	Input 4	
6	Green	GND	White/green	Input 5	
7	Gray	CAN+	Brown/green	Input 6	
8		n.c.	White/blue	Analog input	
9	Yellow	+ VB LOGIC	White/yellow	Output 1	
			Yellow/brown	Output 2	
			White/gray	Output 3	
			Red	GND	

Connection cable



Pin configuration



ZK-TW-18-2M	
PIN	COLOR
1	Brown
2	Blue
3	White
4	Green
5	Pink
6	Yellow
7	Black
8	Gray
9	Red
10	Violet
11	Gray/pink
12	Red/blue
13	White/green
14	Brown/green
15	white/brown
16	Yellow/brown
17	White/gray

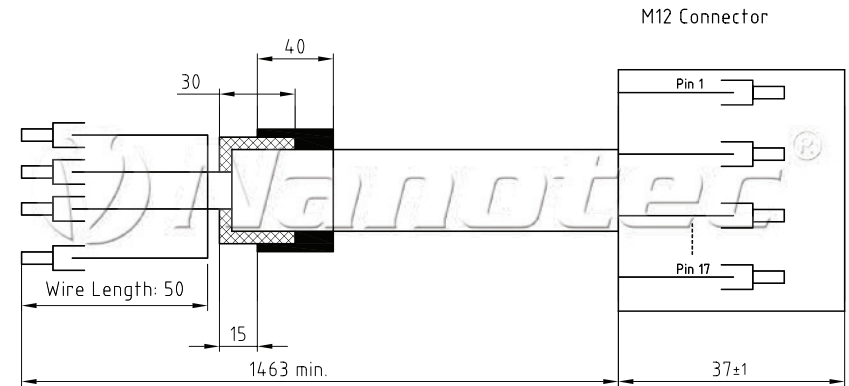
Order identifier

M12 signal cable for PD2-N4118 with IP protection

ZK-M12-17-1M-2-S-FIN

17-pin, 1.5 m, angled connector, shielded

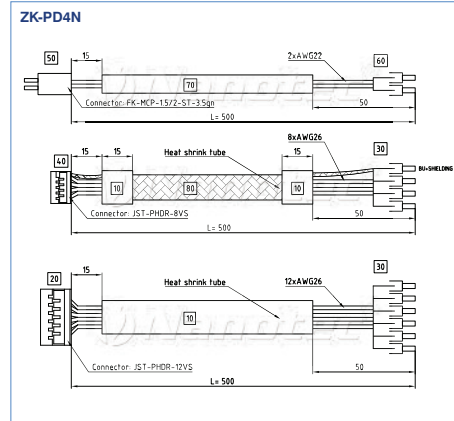
ZK-M12-17-1M-2-S-FIN



Connection cable

Order identifier
Motor cable for PD4-N
ZK-PD4-N

Dimension image (mm)



Pin configuration: ZK-PD4N

FK-MCP-1.5/2-ST-3.5 gn			JST PHDR-12VS		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	Black	GND	1	Gray/brown	COM
2	Brown	Vcc	2	Red	GND
JST PHDR-8VS			3	Black	Input 1
PIN NO.	COLOR	FUNCTION	4	Violet	Input 2
1	Blue	GND + shielding	5	Gray/pink	Input 3
2	White/pink	+Vb external	6	Red/blue	Input 4
3	Yellow	RS485 Rx-	7	White/green	Input 5
4	Green	RS485 Rx+	8	Brown/green	Input 6
5	Pink	RS485 Tx-	9	White/blue	Analog input
6	Gray	RS485 Tx+	10	White/yellow	Output 1
7	Brown	CAN+	11	Yellow/brown	Output 2
8	White	CAN-	12	White/gray	Output 3

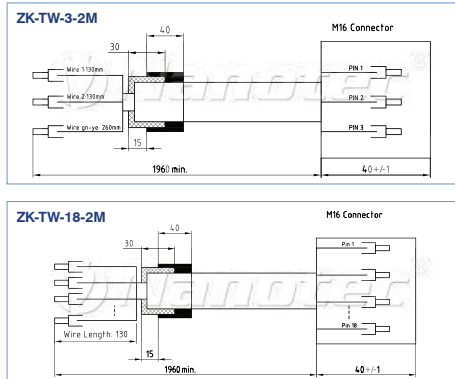
Position	Application 1	Application 2	Quantity
10	Heat shrink tube	Length: 440 mm	2
20	JST PHDR-12VS	12-pin	1
30	Wire end sleeve for AWG26	Isolated 8 mm	20
40	JST PHDR-8VS	8-pin	1
50	FK-MCP-1.5/2-ST-3.5 gn	2-pin	1
60	Wire end sleeve for AWG22	Isolated 8 mm	2
70	AWM STYLE 300V	Length: 500	1
80	SHIELDING	Length: 500	1

Order identifier
M16 motor cable for PD6-N8918...-S motors
ZK-TW-3-2M
ZK-TW-3-5M
ZK-TW-3-10M
ZK-TW-3-2-2 M
ZK-TW-3-5M-2
ZK-TW-3-10M-2

M16 signal cable for PD6-N8918...-S motors

ZK-TW-18-2M Signal cable, 18-pin, 2 m, straight connector
 ZK-TW-18-5M Signal cable, 18-pin, 5 m, straight connector
 ZK-TW-18-10M Signal cable, 18-pin, 10 m, straight connector
 ZK-TW-18-2M-2 Signal cable, 18-pin, 2 m, angled connector
 ZK-TW-18-5M-2 Signal cable, 18-pin, 5 m, angled connector
 ZK-TW-18-10M-2 Signal cable, 18-pin, 10 m, angled connector

Dimension image (mm)



Pin configurations: ZK-TW-3-2M, ZK-TW-18-2M

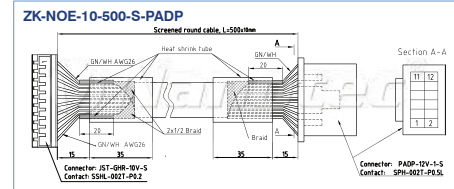
PIN/WIRE NO.			ZK-TW-18-2M		
WIRE NO./COLOR	FUNCTION		FUNCTION	PIN	COLOR
1	+VB		Output 1	1	White/yellow
2	GND		Output 2	2	Yellow/brown
3 (green/yellow)	Protective conductor		Output 3	3	White/gray
			Analog input	4	White/blue
			+Vb external	5	White/pink
			GND (W001)	6	Red
			RS485 Tx+	7	Gray
			RS485 Tx-	8	Pink
			RS485 Rx-	9	Yellow
			RS485 Rx+	10	Green
			Input 1	11	Black
			Input 2	12	Purple
			Input 3	13	Gray/pink
			Input 4	14	Red/blue
			Input 5	15	White/green
			Input 6	16	Brown/green
			CAN -	17	White
			CAN +	18	Brown

Connection cable

Order identifier
Encoder cable
ZK-NOE-10-500-S-PADP
ZK-M12-8-2M-2-PADP
ZK-M12-12-2M-2-PADP
ZK-PADP-12-500-S

Encoder cable for NOE1 and NOE2, straight connector
 Encoder cable for AS motors, angled connector
 Encoder cable for ASB motors, angled connector
 Adapter cable for encoder connection, straight connector

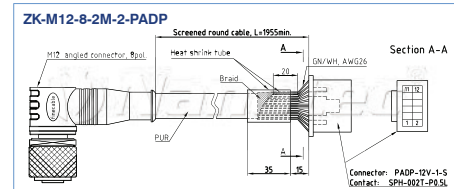
Dimension image (mm)



Pin configuration: ZK-NOE-10-500-S-PADP

JST-GHR-10V-S			PADP-12V-1-S		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	White/green	SHIELDING	1	Black	GND
2	Green	A	2	Red	Vcc
3	Brown	A ₁	3	Green	A
4	Gray	B ₁	4	White	B
5	White	B	5	Brown	A ₁
6	Yellow	I ₁	6	Gray	B ₁
7	Orange	I	7	Orange	I
8	Black	GND	8	Yellow	I ₁
9	Red	Vcc	9	n.c.	n.c.
10	White/green	SHIELDING	10	n.c.	n.c.
			11	n.c.	n.c.
			12	White/green	SHIELDING

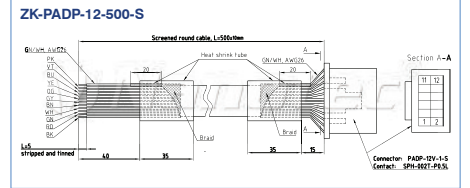
Dimension image (mm)



Pin configuration: ZK-M12-8-2M-2-PADP

M12 angled connector			PADP-12V-1-S		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	White	GND	1	White	GND
2	Brown	Vcc	2	Brown	Vcc
3	Green	A	3	Green	A
4	Yellow	B	4	Yellow	B
5	Brown	A ₁	5	Gray	A ₁
6	Yellow	B ₁	6	Pink	B ₁
7	Blue	I	7	Blue	I
8	Pink	I ₁	8	Red	I ₁
9	n.c.	n.c.	9	Orange	Bordeaux H1
10	n.c.	n.c.	10	Black	H2
11	n.c.	n.c.	11	Violet	H3
12	White/green	SHIELDING	12	White/green	SHIELDING

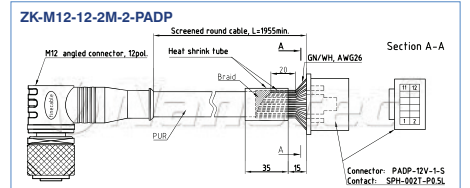
Dimension image (mm)



Pin configuration: ZK-PADP-12-500-S

PADP-12V-1-S		
PIN NO.	COLOR	FUNCTION
1	Black	GND
2	Red	Vcc
3	Green	A
4	White	B
5	Brown	A ₁
6	Gray	B ₁
7	Orange	I
8	Yellow	I ₁
9	Blue	H1
10	Violet	H2
11	Pink	H3
12	White/green	SHIELDING

Dimension image (mm)

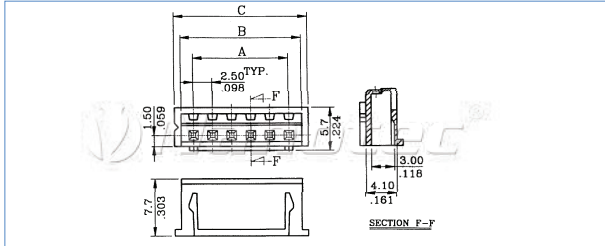


Pin configuration: ZK-M12-12-2M-2-PADP

M12 angled connector			PADP-12V-1-S		
PIN NO.	COLOR	FUNCTION	PIN NO.	COLOR	FUNCTION
1	White	GND	1	White	GND
2	Brown	Vcc	2	Brown	Vcc
3	Green	A	3	Yellow	A
4	Yellow	B	4	Pink	B
5	Gray	A ₁	5	Gray	A ₁
6	Pink	B ₁	6	Blue	B ₁
7	Blue	I	7	Red	I
8	Red	I ₁	8	Orange	I ₁
9	Orange	Bordeaux H1	9	Bordeaux	H1
10	Bordeaux	H2	10	Black	H2
11	Black	H3	11	Violet	H3
12	Violet	SHIELDING	12	White/green	SHIELDING

■ Plug connector

Socket housing JST-XHP



Pin configuration

Pins	⊗	Size A	Size B	Size C
2	2	2,5	5,7	7,3
3	3	5,0	8,2	9,8
4	4	7,5	10,7	12,3
5	5	10,0	13,2	14,8
6	6	12,5	15,7	17,3
8	8	17,5	20,7	22,3

Order identifier

ZCJST-XHP ⊗

Order identifier

ZCJST-SXH

Order identifier

Crimping tool for individual contact springs
ZC2WC-110

Pin configuration

Pins	⊗	Size A	Size B
4	04NR	7,5	12,5
5	05NR	10,0	15,0
6	06NR	12,5	17,5
8	08NR	17,5	22,5

Order identifier

ZCJST ⊗

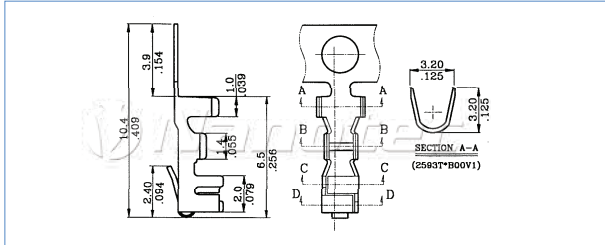
Pin configuration

Pins	⊗	Size A	Size B	Size C
4	SL4-2.54	7,5	12,5	11,1
6	SL6-2.54	12,5	17,5	16,1
8	SL8-2.54	17,5	22,5	21,1

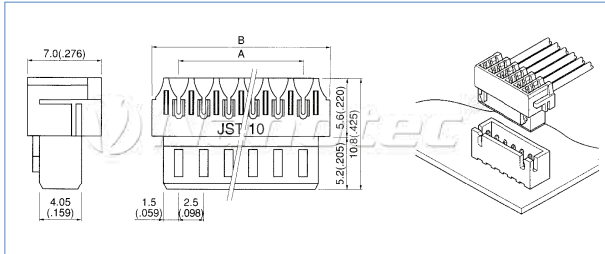
Order identifier

ZC2 ⊗

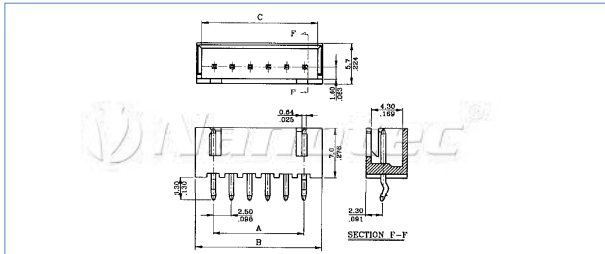
Contact springs AWG22 - 26



Insulation displacement connection technology, connector for AWG24

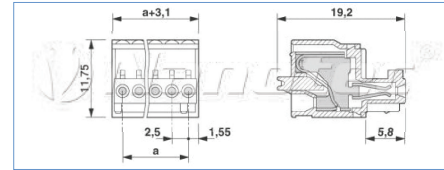


Pin connector for RM print assembly 2.54 mm (JST-XHP)



■ Plug connector

COMBICON connector socket housing



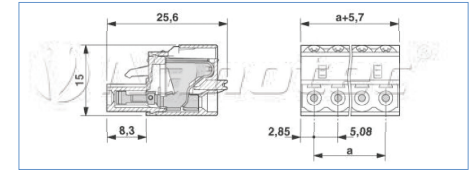
Order identifier

ZCPHOFK-MC0.5 ⊗

Pin configuration

Pins	X	Size A
2	2	2,5
4	4	7,5
5	5	10,0
8	8	17,5
12	12	27,5

COMBICON HC connector socket housing



Order identifier

ZCPHOFKC-2.5HC ⊗

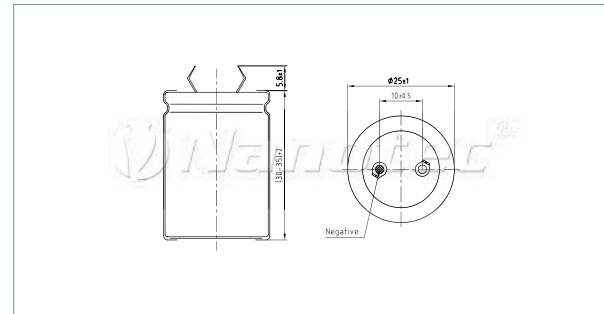
Pin configuration

Pins	X	Size A
2	2	5,08
4	4	15,24

■ Charging capacitor

Parallel to the operating voltage, charging capacitors are required on drivers or Plug&Drive stepper motors so that the admissible voltage is not exceeded during the braking process.

Dimension image (in mm)



Charging capacitor 4,700 µF

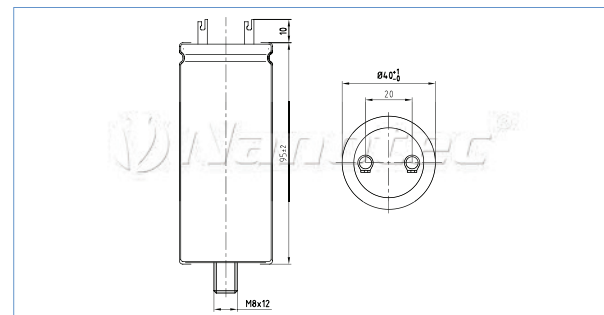


Capacitance: 4.700 µF/50 V
Temperature range: -40 to +85 °C
Dimensions: cylindrical aluminum cup, approximately 25X35 mm
Capacitance tolerance: ±20%
Grid dimensions: 10 mm

Order identifier

Z-K4700/50

Dimension image (in mm)



Charging capacitor 10,000 µF



Capacitance: 10,000 µF/100 V
Temperature range: -40 to +105 °C
Dimensions: cylindrical aluminum cup, approximately 40 x 95 mm
Capacitance tolerance: -10% ~ 30%
Grid dimensions: 20 mm

Order identifier

Z-K10000/100

■ Damper



The dampers D28, D40 and D56m from Nanotec can be installed on all stepper motors with a second shaft end (28-58 mm size). Alongside the improved settling time, system resonances are suppressed, and vibrations and motor noises in the lower speed range are greatly reduced. With device-specific resonance and noise problems, device setup is made considerably easier by fitting the damper.

ZD-D28

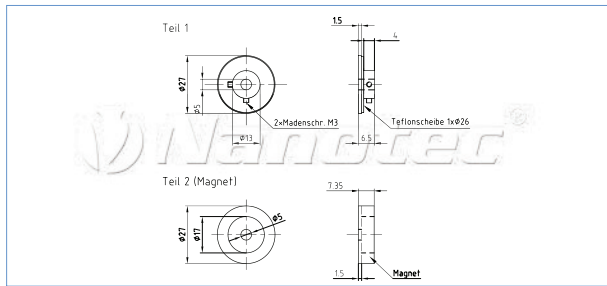


for all stepper motors with shaft diameter of 5.0 mm and B shaft, weight: 26 g. Adapted for stepper motor sizes ST28..

Order identifier

ZD-D28

Dimension image (in mm)



ZD-D40

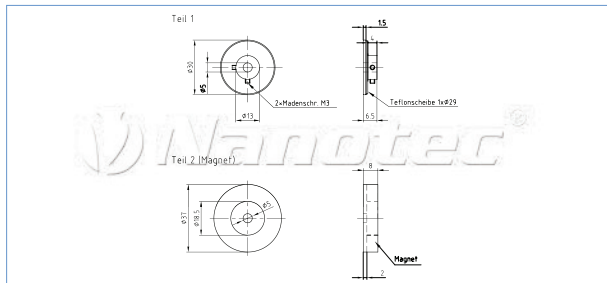


for all stepper motors with shaft diameter of 5.0 mm and B shaft, weight: 40 g. Adapted for stepper motor sizes ST41.., ST42..

Order identifier

ZD-D40

Dimension image (in mm)



ZD-D56

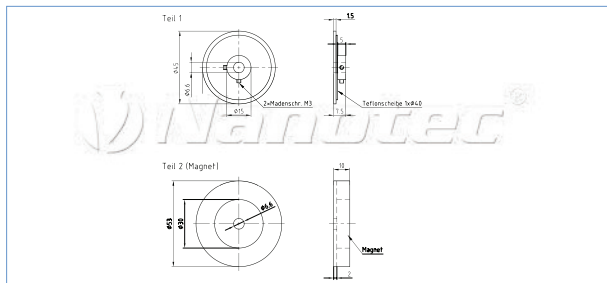


for all stepper motors with shaft diameter of 6.35 mm and B shaft, weight: 100 g. Adapted for stepper motor sizes ST57.., ST59..

Order identifier

ZD-D56

Dimension image (in mm)



■ Damper for mounting flange

The vulcanized rubber secured between 2 flange rings serves in the ZD damper first and foremost to suppresses the rigid-body sound*, which, depending on frequency, can be reduced in relation to direct flange installation and its size, design and stability to approx. 3 to 10 dB(A). due to the different sound speeds - steel/air/rubber = 5000/331/50 m/s - and the tendency of the ZD-DF damper to vibrate, a cost-effective dampening of noise is possible.

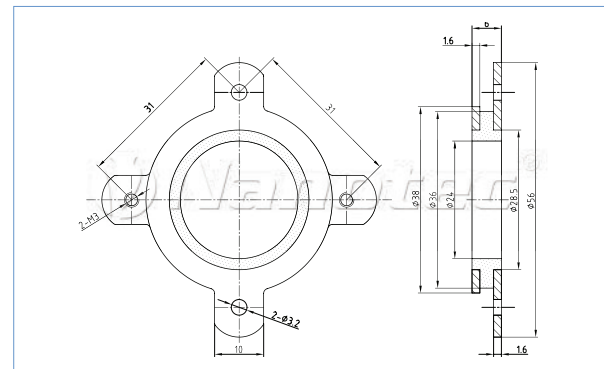
Compared to the well-known rubber silencer, the ZD silencer still provides an acceptable setting of the often important axis spacing between motor shaft and shaft to be driven.

The interrupted flange cooling surface (additional cooling surface that is often utilized for direct flange mounting) must be taken into account for the admissible motor temperature.

* **Noises created during their generation** are initially rigid-body sound, and are first emitted as airborne noise. If these waves of noise impact a component, e.g. a housing wall, it will be put into vibration. Through the vibration, this wall (small bending vibrations), the air in the room is in turn stimulated and is audible to humans as airborne noise. Because every component has its own resonance frequency, countless other sources of noise can be stimulated and thus also amplified.



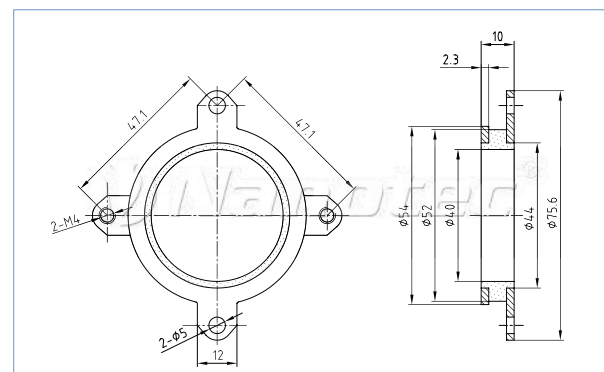
ZD-DF40



Order identifier

ZD-DF40

ZD-DF56



Order identifier

ZD-DF56

Lead screws



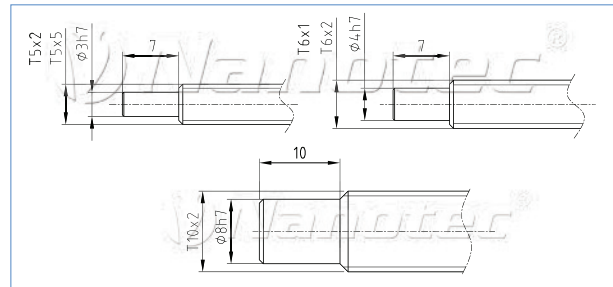
Fast and economic for the complete module

To make it possible to easily and quickly achieve linear motion with a stepper motor, we offer a matching lead screw for every linear actuator or linear motor. Not only does this reduce the order and delivery costs, it also increases compliance with the specified tolerances.

Lubrication:

The PEEK material used for the lead nut and the nut is self-lubricating. However, we recommend lubricating these parts once during setup and installation for a longer service life. Suitable substances are dry lubricants (especially in the case of slower speeds and short duty cycles) or roller bearing greases such as Klüber Microlube GBUY131. You can also order a suitable grease directly from Nanotec under the order identifier "Nanolube". The lubrication intervals, lubricant suitability and the resulting service life always depend on the application and the ambient conditions, and therefore need to be tested in the application.

Standard finishing



Order identifier

ZS T 6 1 - 200 1

T = trapezoidal
 Thread size
 Pitch of screw
 Screw length 200 = 200 mm (standard)
 (others on request)
 With standard finishing

Lead screws p = 1 - 5 mm

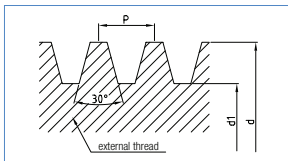
The pitch of p = 1, 2 and 5 mm offers an extended range of applications, where larger strokes are conveyed in a minimum of time.

Screw material

Material No.: 1.4021 = Stainless (not resistant to acid and salt water)
 all lead screw other than T6X2 (1.4404)

Tensile strength
 760 N/mm²

Screw with thread

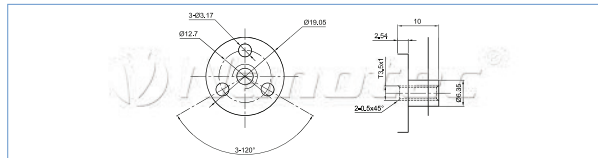


Available screws						
Thread size Ø	Pitch p	Thread pitch delay mm/on section	Exterior - Ø d	Core - Ø d1	Max. axial play mm	available screw lengths mm
T3.5x1	1,00	±0.1/300 mm	3,50	2,30	0,06	L.....T3.5x1 200, 300
T6x1	1,00	±0.1/300 mm	6,00	4,70	0,05	L.....T6x1 200, 300
T6x2 P1	2,00	±0.1/300 mm	6,00	4,70	0,05	L.....T6x2 200, 300
T5x2 P1	5,00	±0.1/300 mm	5,00	3,70	0,03	L.....T5x2 200, 300
T5x5	5,00	±0.1/300 mm	5,40	3,60	0,10	L.....T5x5 200, 300
T10x2	2,00	±0.1/300 mm	9,70	8,20	0,07	L.....T10x2 200, 300

Lead nuts



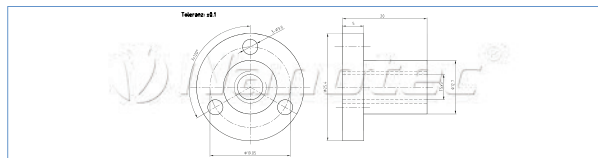
Dimension image (in mm) LSNUT-T3.5X1



Order identifier

LSNUT-T3.5X1

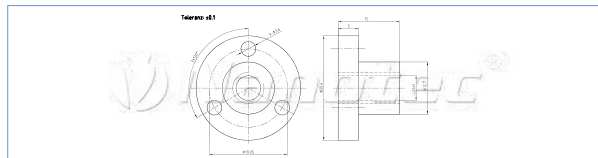
Dimension image (in mm) LSNUT-T5x5-F



Order identifier

LSNUT-T5x5-F

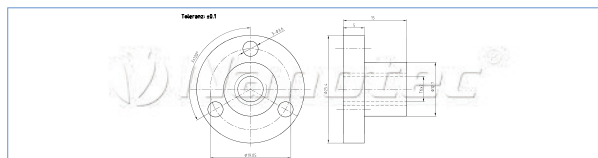
Dimension image (in mm) LSNUT-T6x1-F



Order identifier

LSNUT-T6x1-F

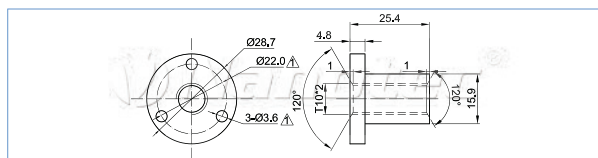
Dimension image (in mm) LSNUT-T6x2-F



Order identifier

LSNUT-T6x2-F

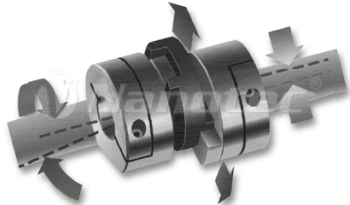
Dimension image (in mm) LSNUT-T10x2-F



Order identifier

LSNUT-T10x2-F

■ Shaft couplings



The Oldham couplings from Nanotec are easy to install due to the efficient design, and can transfer high forces at low shaft displacement. Through the clamp fastening, damage to the shaft is ruled out.

A nylon transmission disc dampens noise and provides good insulation properties (3 kV between two shafts) with a potential-free construction.

Use

Where a zero-play transfer of force is needed: Stepper motors, servo motors, encoders, tachogenerators, etc.

- Temperature range:** -20 to +60 °C
- Materials:** Hub aluminum alloy 2011T3 and 2011T8 BS4300/5FC1
- Transmission disc:** Nylon 11 (colorless)
- Tapped blind hole:** Length of the parallel borehole ±0.2.
Drill holes end with 118° bevel

Operating factors

Maximum torques based on drives with no displacement or axial movement.
The operating factors are multiplied by the load torques as explained, e.g.

- Load torque of the application = 1 Nm
- Operating factor = 2
- Required torque = 2 Nm**

Load duration	Operating factor
Momentary load	1
1 hours per day	2
3 hours per day	4
6 hours per day	6
12 hours per day	8

Order identifier

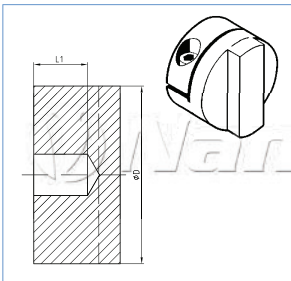
ZW-X (e.g. ZW-234-19-20)

Order 2 hubs + 1 transmission disc

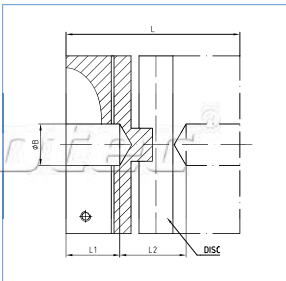
From 50 pcs, special boreholes are possible!

Order number with special hub hole: e.g. 8.0 mm = ZW - 234-19-99-8.0

Hubs with tapped blind hole



Dimension image (in mm)



Coupling-specific parameters

Size	Short-circuit torque Nm	Max. displacement @3000 r.p.m.			Static break torque Nm
		Angle ±°	Radial ±mm	Axial ±mm	
19	1,7	0,5	0,2	0,10	10
25	4,0	0,5	0,2	0,10	13
41	17,0	0,5	0,2	0,15	57

Available shaft couplings

Hubs	Size	Hub hole +0.03/-0 mm	Ø D	Dimensions			Fixing screws			Inertia torque kgm ² ·10 ⁻⁸	Weight	Transmission disc Order number
				L	L1	L2	Setting screw	removal torque Nm				
234-19-20	19	5	19,1	22,0	6,3	9,4	M3	0,94	67	12	ZW-234-19-0	
234-19-99	19	X	19,1	22,0	6,3	9,4	M3	0,94	67	12	ZW-234-19-0	
234-25-24	25	6,35	25,4	28,4	8,6	11,2	M4	2,27	252	31	ZW-234-25-0	
234-25-28	25	8	25,4	28,4	8,6	11,2	M4	2,27	252	31	ZW-234-25-0	
234-25-99	25	X	25,4	28,4	8,6	11,2	M4	2,27	252	31	ZW-234-25-0	
234-41-38	41	14	41,3	50,8	16,7	17,4	M5	4,62	3327	148	ZW-234-41-0	
234-41-99	41	X	41,3	50,8	16,7	17,4	M5	4,62	3327	148	ZW-234-41-0	

Notes

Blank area for notes.