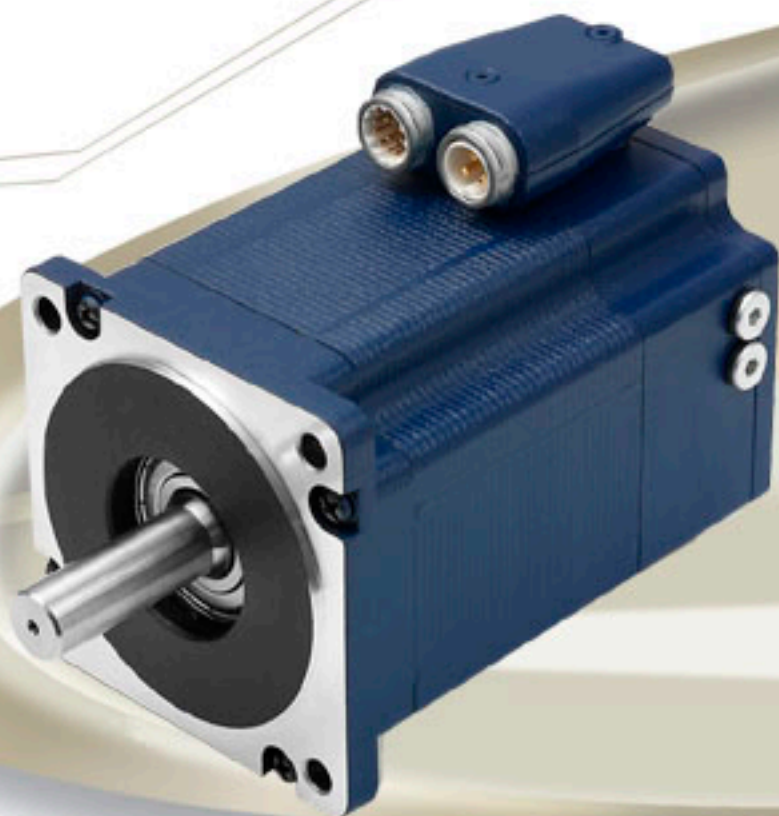


entraînement

SERVOMOTEURS AVEC VARIATEUR INTEGRE

m o t i o n
la force de la gamme !

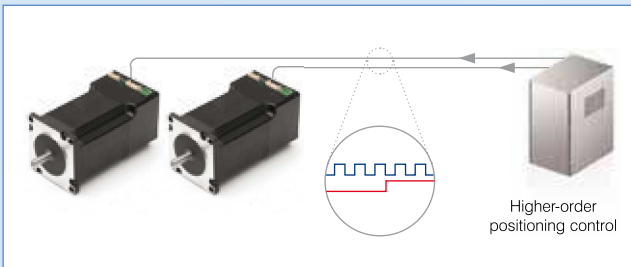


transtechnik
servomécanismes

■ Plug & Drive® Stepper motors



■ Motors with integrated and external controllers



Clock & direction

- Microstep up to a 64th of a step
- Step multiplication/microstep emulation so that the smooth running of the microstep can also be used with older higher-order controllers that only output full or half steps.

Control via digital and analog inputs

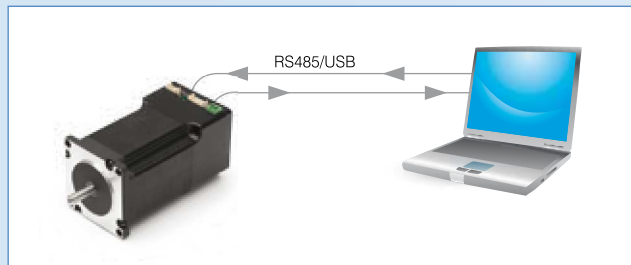
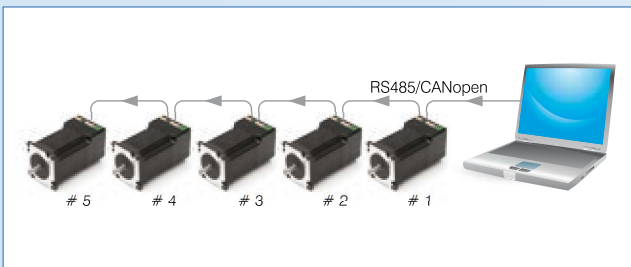
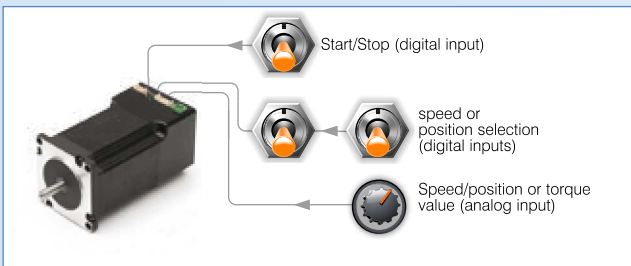
- Up to 16 motion sequences (position or Speedprofile) can be stored in the controller, and selected, started and stopped via digital inputs
- Also speed, position or torque can be controlled via the analog input
- Inputs are freely configurable for additional functions (e.g. reference switch, enable)

Control over field bus

- Open protocol over RS232/RS485 with adjustable Baud rate of 9.6-115 kbit
- Standard protocol in compliance with CANopen/DSP402 over CAN bus

Sequential control with *Nano*

- Java-based programming language, programs run autonomously (without a PC) on the Plug & Play motor
- Access to all control parameters and inputs/outputs
- Variables, branches, loops, logical and mathematical functions
- Programs can be stored in the controller via RS485/USB



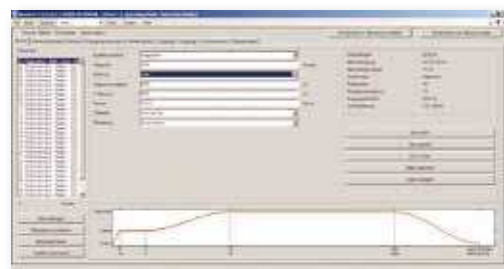
Simple configuration and start-up with our free-of-charge Nanopro and NanoCAN software.

A stepper motor can be put into operation in a few minutes with the Windows Nanopro software.

It is just as easy to set specific motor and machine parameters, set up reference and limit switches, and much more. After the initial configuration of the drive, e.g. in positioning mode, the individual travel profiles – incl. different ramp types such as trapezoidal or sinusoidal ramps – can be set.

The behavior of the drive can be graphically displayed by an integrated scope function which is helpful, especially in the optimization of the control parameters in closed loop mode.

For an initial setting sample values for standard motors are recommended that can be adapted to the requirements of the application by an integrated auto tuning. Specially developed for activation via CANopen, the NanoCAN commissioning software can now be used to conveniently set the general settings in the same way as Nanopro via RS485.



After the configuration, the positioning can be started either via the digital inputs or directly from a PLC via the interface or another higher-order controller.

PD4-N5918/N6018 series stepper motor with integrated controller



Option



Pin configuration

Technical data

Operating voltage:	24 to 48 V DC
Max. phase current:	Adjustable per software up to 4.8 A (1% steps), 100%=3.2 A
Interface:	RS485 or CANopen
Operating mode:	Position, speed, flag position, clock direction, analog, analog position, torque
Operating mode:	1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/32, 1/64, adaptive (1/128)
Step frequency:	0 to 50 kHz in the clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 optocoupler inputs (5 - 24 V)
Outputs:	Open-Drain (0 switching, max. 24 V/0.5 A)
Position monitoring:	Automatic error correction to 0.9° (variation E)
Current reduction:	Adjustable in 1% values
Protection circuit:	Overvoltage and heatsink temperature > 80 °C
Temperature range:	-10 to + 40 °C
Type of connection:	Connection with JST connectors, M12 variant possible
New features:	Closed Loop - sinusoidal commutation /dsp drive / programmable as sequential control with NanoJ easy

JST PHD-8		
PIN	CABLE COLOR	ASSIGNMENT
1	Blue	GND
2	White/pink	+Vb external
3	Yellow	RS485 Rx-
4	Green	RS485 Rx+
5	Pink	RS485 Tx-
6	Gray	RS485 Tx+
7	Brown	CAN+
8	White	CAN-

JST PHD-12		
PIN	CABLE COLOR	ASSIGNMENT
1	Gray/brown	COM
2	Red	GND
3	Black	Input 1
4	Violet	Input 2
5	Gray/pink	Input 3
6	Red/blue	Input 4
7	White/green	Input 5
8	Brown/green	Input 6
9	White/blue	Analog input
10	White/yellow	Output 1
11	Yellow/brown	Output 2
12	White/gray	Output 3

PHÖNIX CONNECTOR		
PIN	CABLE COLOR	ASSIGNMENT
1	1	GND
2	2	UB_IN

Accessories

ZK-PD4-N

Connecting cable set
500 mm long with connector

ZIB-PDx-N Interface board for fast commissioning

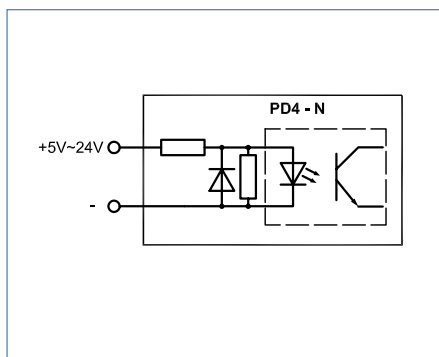
ZK-RS485-USB
RS485-USB cable for PC connection

Order identifier

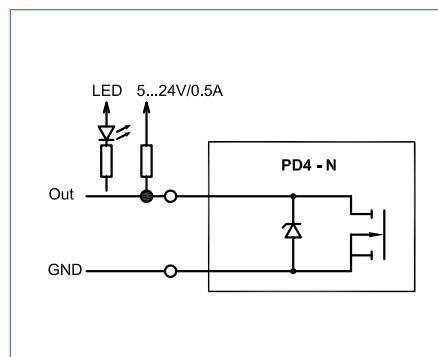
PD4-N5918X4204
PD4-N5918M4204
PD4-N5918L4204
PD4-N6018L4204

Note: An intermediate circuit capacitor of at least 4,700 µF (Z-K4700/50) must be provided on the supply voltage.

Input circuits



Output circuits



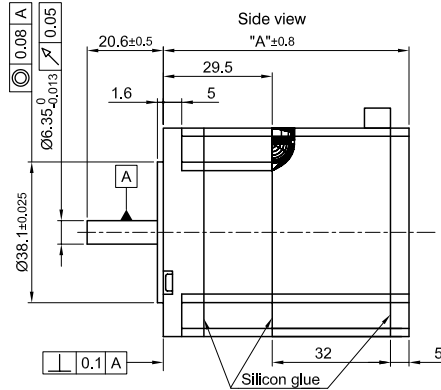
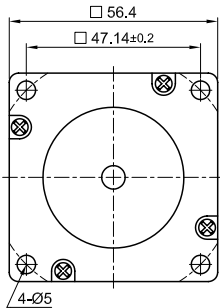
Available power sizes (others on request)

Type	Holding torque (duration) Ncm	Holding torque (max.) Ncm	Weight kg	"A" mm
PD4-N5918X4204	53.7	80.6	0.49	66.5
PD4-N5918M4204	113.0	170.0	0.80	80.6
PD4-N5918L4204	198.0	297.0	1.22	101.6
PD4-N6018L4204	354.0	531.0	1.48	112.5

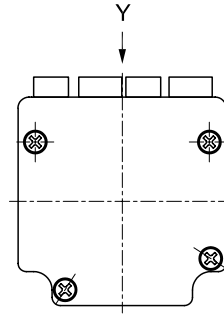
Outline drawing (in mm)

PD4N5918...

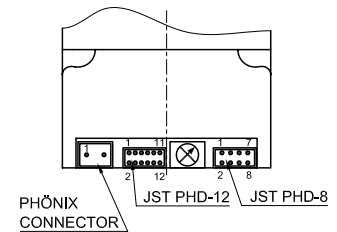
Front view and mounting



Rear view

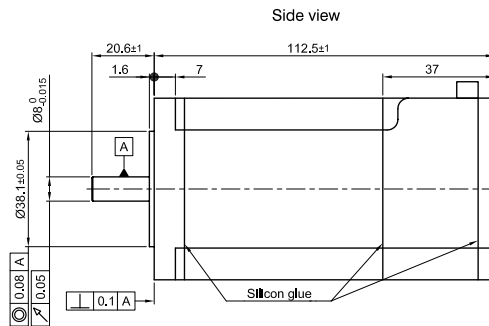
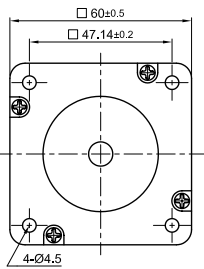


Y view

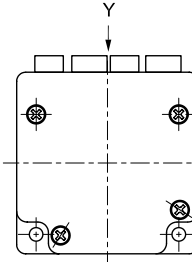


PD4N6018L4204

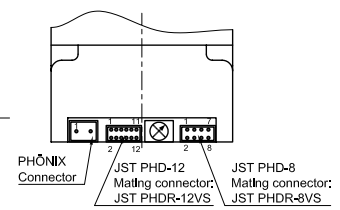
Front view and mounting



Rear view

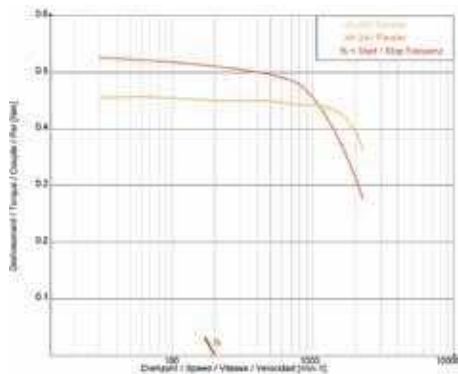


Y view

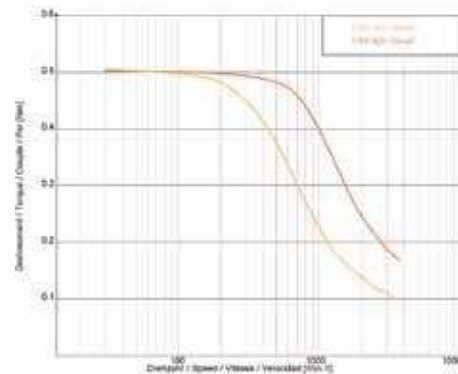


Speed/torque curves

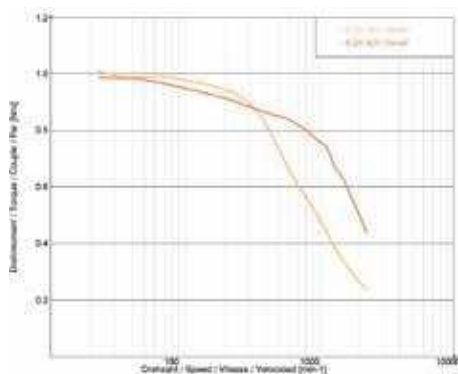
PD4-N5918X4204



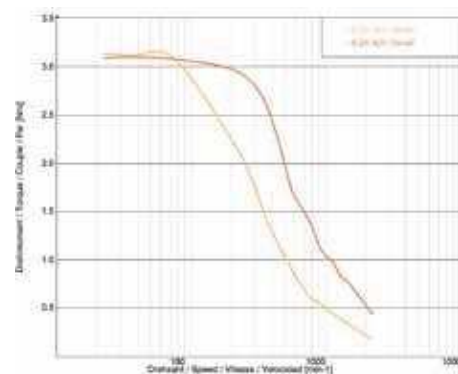
PD4-N5918L4204



PD4-N5918M4204



PD4-N6018L4204



Plug & Drive® stepper motors

■ PD4-N5918 series stepper motor with integrated controller and junction box with protection class IP65



Option



Pin configuration RS485

M12 CONNECTOR 17 PIN		M12 CONNECTOR 5 PIN	
FUNCTION	PIN NO.	FUNCTION	PIN NO.
Output 1	1	24 - 48 V	1
Output 2	2	24 - 48 V	2
Output 3	3	Power GND	3
Analog input	4	Power GND	4
+VB External	5	N.C.	5
GND	6		
RS485 Tx+	7		
RS485 Tx-	8		
RS485 Rx-	9		
RS485 Rx+	10		
Input 1	11		
Input 2	12		
Input 3	13		
Input 4	14		
Input 5	15		
Input 6	16		
NC	17		

Technical data

Operating voltage: 24 to 48 V DC
Max. phase current: Adjustable per software up to 4.8 A (1% steps), 100%=3.2 A
Interface: RS485 or CANopen
Operating mode: Position, speed, flag position, clock direction, analog, analog position, torque
Operating mode: 1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/32, 1/64, adaptive (1/128)
Step frequency: 0 to 50 kHz in the clock/direction mode, 0 to 25 kHz in all other modes
Inputs: 6 optocoupler inputs (5 - 24 V)
Outputs: Open-Drain (0 switching, max. 24 V/0.5 A)
Position monitoring: Automatic error correction to 0.9° (variation E)
Current reduction: Adjustable in 1% values
Protection circuit: Overvoltage and heatsink temperature > 80 °C
Temperature range: -10 to + 40 °C
Type of connection: Connection with JST connectors, M12 variant possible
New features: Closed Loop - sinusoidal commutation /dsp drive / programmable as sequential control with Nanopro easy

CAN Open pin configuration

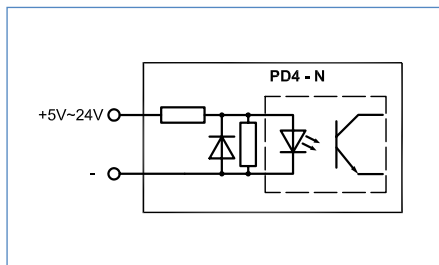
M12 CONNECTOR 17 PIN		M12 CONNECTOR 5 PIN	
FUNCTION	PIN NO.	FUNCTION	PIN NO.
Output 1	1	24 - 48 V	1
Output 2	2	24 - 48 V	2
Output 3	3	Power GND	3
Analog input	4	Power GND	4
+VB External	5	N.C.	5
GND	6		
CAN - H	7		
CAN - L	8		
N.C.	9		
N.C.	10		
Input 1	11		
Input 2	12		
Input 3	13		
Input 4	14		
Input 5	15		
Input 6	16		
NC	17		

I Note: An intermediate circuit capacitor of at least 4,700 µF (Z-K4700/50) must be provided on the supply voltage.

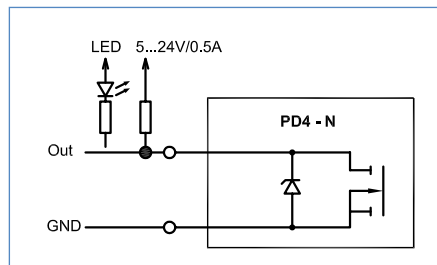
Order identifier

PD4-N5918L4204 -IP-2
IP = with IP protection
 2 = RS485
 3 = CANopen
 (available from Q4/2010)

Input circuits



Output circuits



Accessories

ZK-M12-17-1m-2-pur-S,
 angled, L=1.5m
ZK-M12-5-2m-2-pur-S,
 angled, L=2m

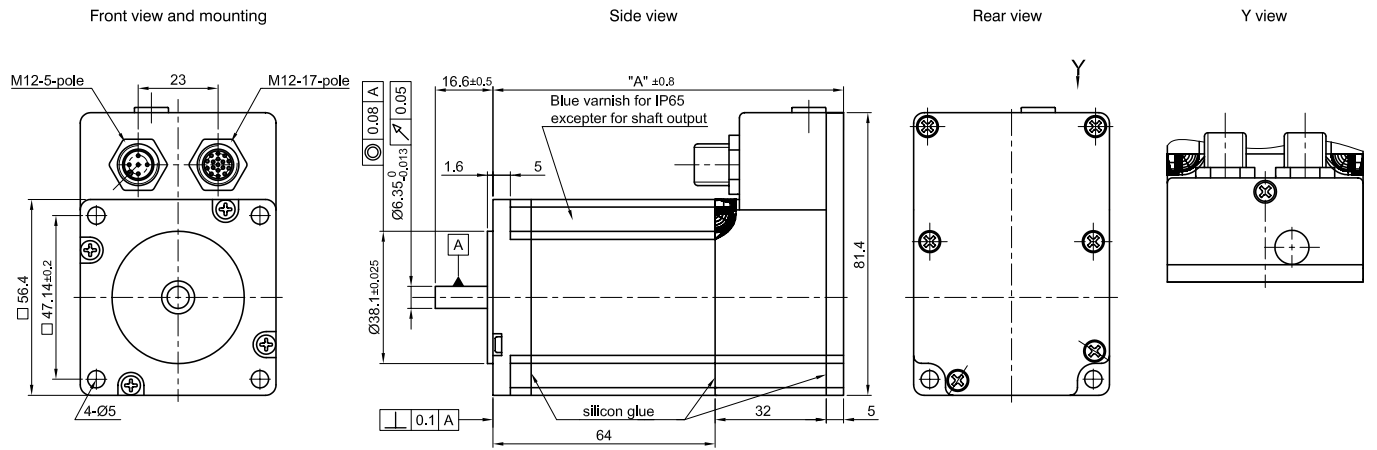
Other cable lengths in large quantities on request.

Available power sizes (others on request)

Type	Holding torque (duration) Ncm	Holding torque (max.) Ncm	Weight kg	"A" mm	Interface
PD4-N5918X4204-IP-2	53.7	80.6	0.49	66.5	RS485
PD4-N5918X4204-IP-3	53.7	80.6	0.49	66.5	CANopen
PD4-N5918M4204-IP-2	113.0	170.0	0.80	80.6	RS485
PD4-N5918M4204-IP-3	113.0	170.0	0.80	80.6	CANopen
PD4-N5918L4204-IP-2	198.0	297.0	1.22	101.6	RS485
PD4-N5918L4204-IP-3	198.0	297.0	1.22	101.6	CANopen

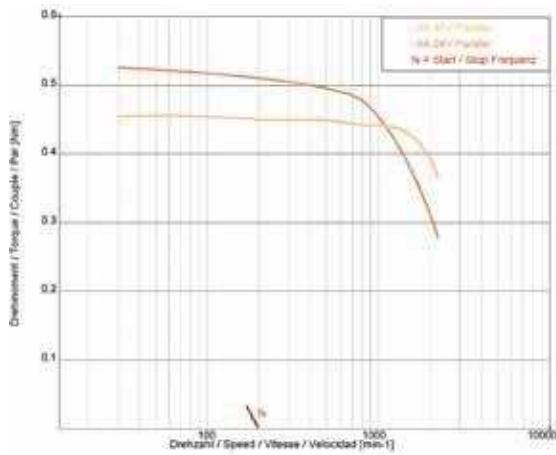
Outline drawing (in mm)

PD4N5918...-IP

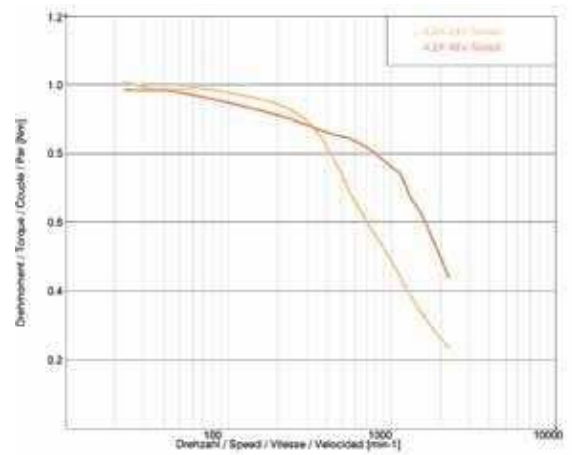


Speed/torque curves

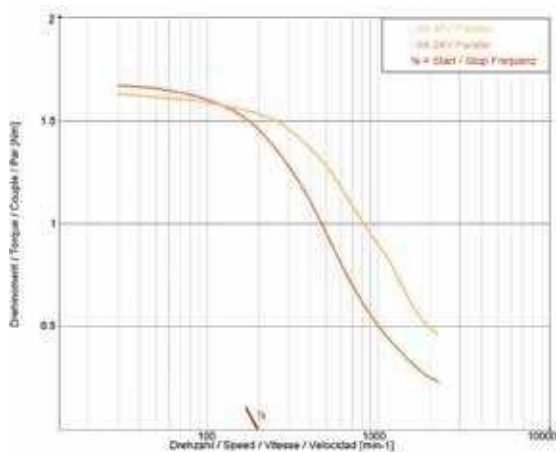
PD4-N5918X4204



PD4-N5918M4204



PD4-N5918L4204



Plug & Drive® stepper motors

PD6-N8918 series stepper motor with integrated controller



Option



Pin configuration of cable

SIGNAL CABLE	
FUNCTION	COLOR
Input 1	Black
Input 2	Violet
Input 3	Gray/pink
Input 4	Red/blue
Input 5	White/green
Input 6	Brown/green
Analog input	White/blue
Output 1	White/yellow
Output 2	Yellow/brown
Output 3	White/gray

SIGNAL CABLE	
FUNCTION	COLOR
RS485 Tx+	Gray
RS485 Tx-	Pink
RS485 Rx-	Yellow
RS485 Rx+	Green
CAN +	Brown
CAN -	White
Signal GND (COM)	Gray/brown
GND	Blue/pink + brown
GND LOGIC	Red
+ UB LOGIC	White/pink (20~48V)

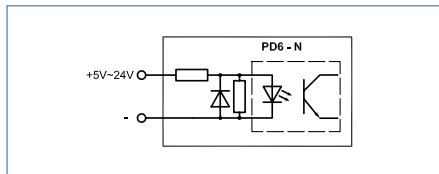
POWER CABLE	
FUNCTION	Cable no./COLOR
+ UB	1
GND	2
PROTECTIVE CABLE	Green/yellow

Technical data

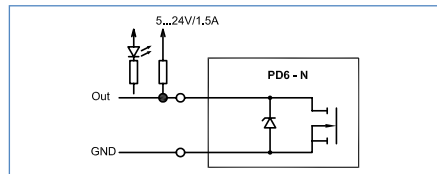
Operating voltage:	24 to 48 V DC
Max. phase current:	Adjustable up to max. 10.5 A/phase, 7A nominal current
Interface:	RS485 or CANopen
Operating mode:	Position, speed, flag position, clock direction, analog, analog position, torque
Position monitoring:	Automatic error correction up to 0.9°
Operating mode:	1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/32, 1/64, adaptive (1/128)
Step frequency:	0 to 50 kHz in the clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 optocoupler inputs (5..24 V), analog input
Outputs:	Open-Drain (0 switching, max. 24 V/1.5 A)
Current reduction:	Adjustable in 1% values
Protection circuit:	Overvoltage and heatsink temperature > 80 °C
Temperature range:	0 to + 40 °C
Type of connection:	2 x 2 m cable

Note: An intermediate circuit capacitor of at least 4,700 µF (Z-K4700/50) must be provided on the supply voltage.

Input circuits



Output circuits



Accessories

- ZIB- PDx-N** Interface board for fast commissioning
- ZK-RS485-USB**
RS485-USB cable for PC connection
- ZK-TW-18**
ZK-TW-3
Cable for Twintus connector

Order identifier

PD6-N8918S6404 -S

S = motor length

S = M16 Twintus connector

M16 Twintus connector pin configuration

M16 CONNECTOR 18 PIN		M16 CONNECTOR 3 PIN	
FUNCTION	PIN NO.	FUNCTION	PIN NO.
Output 1	1	+ UB	1
Output 2	2	GND	2
Output 3	3	Protective wire	3
Analog input	4		
+VB External	5		
GND (W001)	6		
RS485 Tx+	7		
RS485 Tx-	8		
RS485 Rx-	9		
RS485 Rx+	10		
Input 1	11		
Input 2	12		
Input 3	13		
Input 4	14		
Input 5	15		
Input 6	16		
CAN -	17		
CAN +	18		

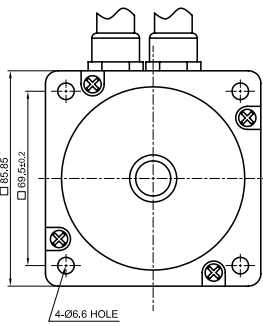
Available power sizes (others on request)

Type	Holding torque Ncm	Supply voltage Ncm	Weight kg	"A" mm	Option with Twintus connector
PD6-N8918S6404	320	24-48	1.7	89	
PD6-N8918S6404-S	320	24-48	1.7	89	X
PD6-N8918M9504	590	24-48	3.4	121	
PD6-N8918M9504-S	590	24-48	3.4	121	X
PD6-N8918L9504	930	24-48	4.0	151	
PD6-N8918L9504-S	930	24-48	4.0	151	X

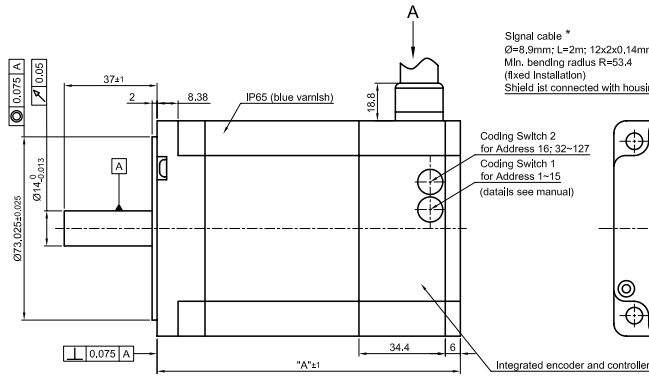
Outline drawing (in mm)

PD6-N8918...

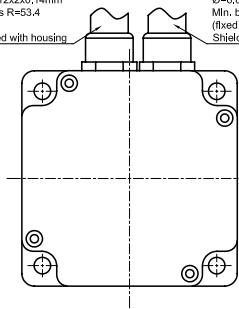
Front view and mounting



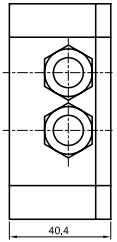
Side view



Rear view



Top view A



Signal cable *
 $\varnothing=8.9\text{mm}$; L=2m; 12x2x0.14mm²
 Min. bending radius R=53.4
 (fixed installation)
 Shield ist connected with housing

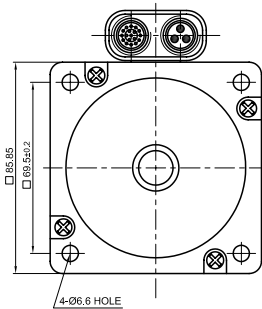
Power supply cable *
 $\varnothing=8.8$; L=2m; 3x1mm²
 Min. bending radius R=40.8
 (fixed installation)
 Shield is connected with housing

Coding Switch 2
 for Address 16; 32-127
 Coding Switch 1
 for Address 1-15
 (details see manual)

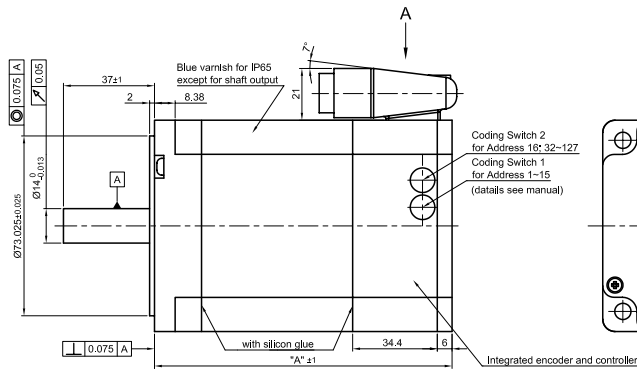
Integrated encoder and controller

PD6-N8918...-S

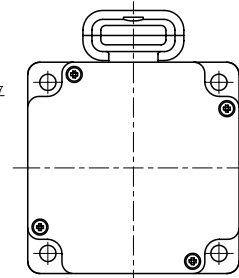
Front view and mounting



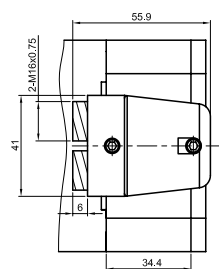
Side view



Rear view

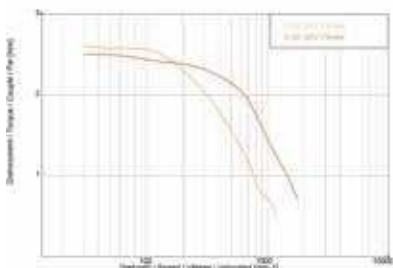


Top view A

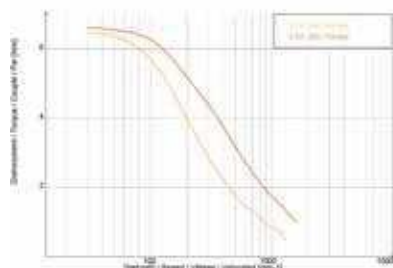


Speed/torque curves

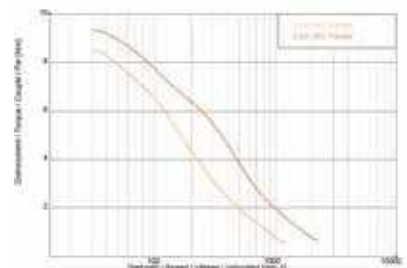
PD6-N8918S6404



PD6-N8918M9504



PD6-N8918L9504





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■ **Siège social &
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■ Bureau Lyon

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