PD2-O4118 series

Option

Gear

Software

NanoPro

NanoCAN

NanoJ

Pin configuration RS485

JST-PHDR-12		JST-PHDR-8	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	GND	1	GND
2	Input 1	2	GND
3	Input 2	3	Rx-
4	Input 3	4	Rx+
5	Input 4	5	Tx-
6	Input 5	6	Tx+
7	Input 6	7	GND
8	Analog In	8	VB 12-24 V DC
9	Output 1		
10	Output 2		
11	Output 3		
12	GND		

Technical data

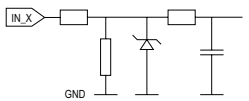
Type:	stepper motor
Operating voltage:	DC 12 to 24 V
Max. phase current:	Max. 2.7 A (1% steps) = 150%. 100% = 1.8 A
Interface:	RS485 or CANopen
Operating type:	Clock-direction, position, speed, flag position, analog, joystick. CANopen: Profile positioning, velocity, homing
Step frequency:	Up to 1MHz at 1/64
Inputs:	6 digital inputs (5-V TTL), 1 analog input max. +10/min. -10 V adjustable
Outputs:	3 open collector, 24 V/0.5 A max.
Current reduction:	Adjustable in values of 1%
Protective circuit:	Overvoltage, undervoltage and temperature > 80 °C, integr. ballast switching
Temperature range:	-10 to + 40 °C
New functions:	dspDrive/programmable as a sequential controller using NanoJEasy (RS485)

CANopen pin configuration

JST-PHDR-12		JST-PHDR-8	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	GND	1	GND
2	Input 1	2	GND
3	Input 2	3	n.c.
4	Input 3	4	n.c.
5	Input 4	5	CAN low (CAN-)
6	Input 5	6	CAN high (CAN+)
7	Input 6	7	GND
8	Analog In	8	VB 12-24 V DC
9	Output 1		
10	Output 2		
11	Output 3		
12	GND		

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

Input circuit



Order identifier

PD2-O4118L1804 (2)

2 = RS485

3 = CANopen

Accessories

ZK-SMCI12 incl. RS485
ZK-SMCI12-IO excl. RS485
ZK-SMCI12-3 for CANopen

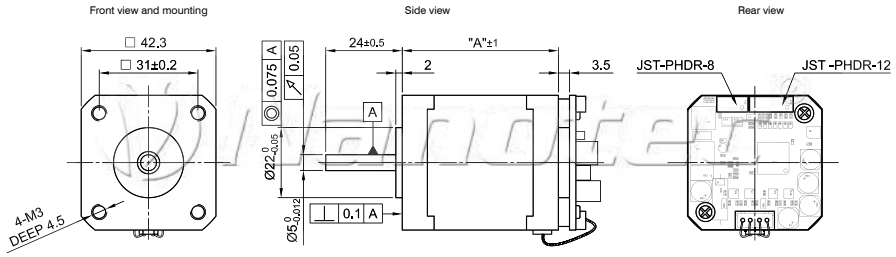
Other cable lengths in large quantities on request.

Available versions (others on request)

Type	Holding torque (duration) Ncm	Weight kg	"A" mm	Interface
PD2-O4118S1404-2	20	0,21	31	RS485
PD2-O4118S1404-3	20	0,21	31	CANopen
PD2-O4118L1804 -2	50	0,39	49	RS485
PD2-O4118L1804 -3	50	0,39	49	CANopen

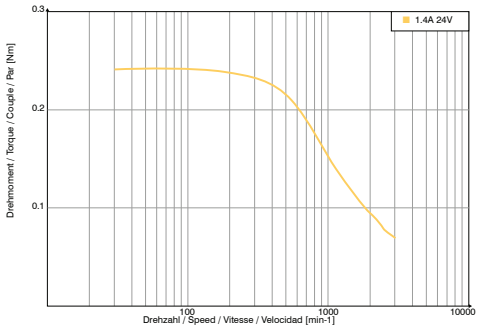
Dimension image (in mm)

PD2-O4118

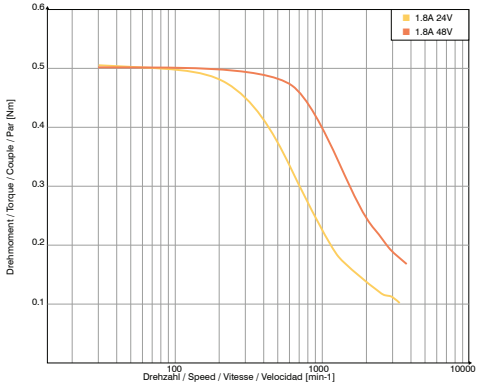


Speed/torque curves

PD2-O4118S1404



PD2-O4118L1804



PD2-N4118 series

Option

Gear

Software

NanoPro

NanoCAN

NanoJ

Pin configuration RS485

JST-ZPD-10		JST-ZPD-12	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	GND	1	GND
2	GND	2	Input 1
3	RS485 Rx-	3	Input 2
4	RS485 Rx+	4	Input 3
5	RS485 Tx-	5	Input 4
6	RS485 Tx+	6	Input 5
7	GND	7	Input 6
8	Vcc	8	Analog input
9	Vcc	9	Output 1
10	GND	10	Output 2
		11	Output 3
		12	GND

Technical data

Art:	High-pole DC servo motor (stepper motor)
Operating voltage:	12 to 48 V DC
Max. phase current:	Adjustable via software up to 2.7 A, (1% steps), 100%=1.8 A
Interface:	RS485 or CANopen
Operating type:	RS485 interface: Position, speed, reference run, flag position, clock-direction, analog and joystick, analog position, torque CANopen interface: Profile position, speed, reference run, interpolated position, torque
Operating mode:	1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/16, 1/32, 1/64, adaptive microstep, feed rate
Step angle:	1.8°
Step frequency:	0 to 50 kHz in clock/direction mode, 0 to 25 kHz in all other modes
Encoder:	Integrated magnetic encoder, 1024 CPR
Inputs:	6 digital inputs (5-24 V), 1 analog input (+-10 V)
Outputs:	3 outputs in open drain circuit (0 switching, max. 24 V/0.5 A)
Position monitoring:	Automatic error correction up to 0.9°
Current reduction:	Adjustable by values of 1%
Protective circuit:	Overvoltage and heat sink temperature > 80 °C
Temperature range:	-10 to + 40 °C
Connection type:	Plug connection with JST connectors
New functions:	Closed loop/sinusoidal commutation/dspDrive/ programmable as a sequence controller using NanoJEasy (RS485)

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

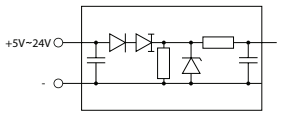
CANopen pin configuration

JST-ZPD-10		JST-ZPD-12	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	GND	1	GND
2	GND	2	Input 1
3	RS485 Rx-	3	Input 2
4	n.c.	4	Input 3
5	CAN-	5	Input 4
6	CAN+	6	Input 5
7	GND	7	Input 6
8	Vcc	8	Analog input
9	Vcc	9	Output 1
10	GND	10	Output 2
		11	Output 3
		12	GND

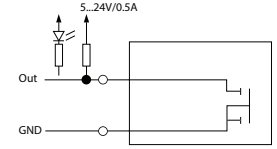
Accessories

ZK-PD2N/ZK-PD2N-3
Connection cable set
500 mm long with connector

Input circuit



Output circuit



Order identifier

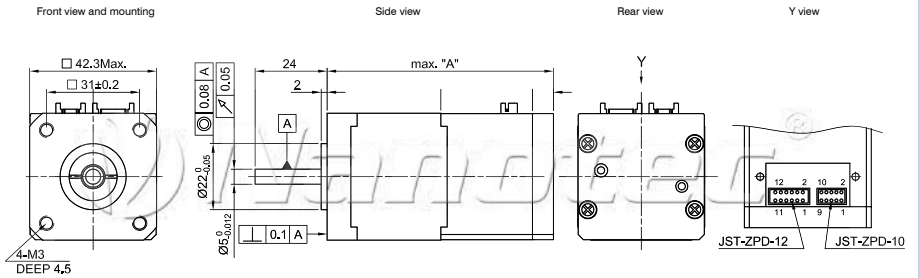
PD2-N4118L1804
2= RS485
3= CANopen

Available versions (others on request)

Type	Holding torque (duration) Ncm	Weight kg	"A" mm
PD2-N4118L1804	50	0,39	76,5

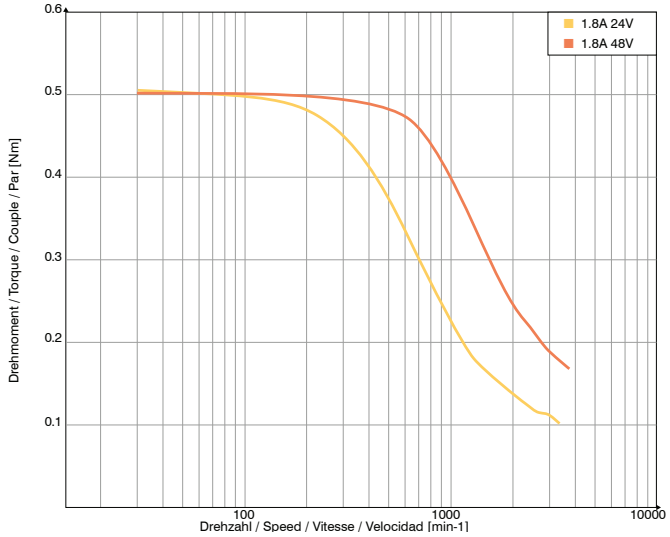
Dimension image (in mm)

PD2-N4118



Speed/torque curves

PD2-N4118L1804



PD2-N4118 series with protection class IP65

Option

Gear

Software

NanoPro

NanoCAN

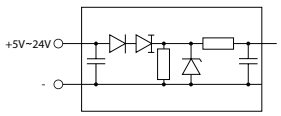
NanoJ

Technical data

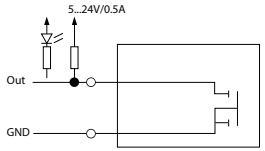
Art:	High-pole DC servo motor (stepper motor)
Operating voltage:	12 to 48 V DC
Max. phase current:	Adjustable via software up to 2.7 A, (1% steps), 100%=1.8 A
Interface:	RS485 or CANopen
Operating type:	Position, speed, flag position, clock-direction, analog, analog position, torque
Operating mode:	1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/32, 1/64, adaptive (1/128)
Step frequency:	0 to 50 kHz in clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 digital inputs (5-24 V), 1 analog input (+-10 V)
Outputs:	Open drain (0 switching, max. 24 V/0.5 A)
Position monitoring:	Automatic error correction up to 0.9°
Current reduction:	Adjustable by values of 1%
Protective circuit:	Overvoltage and heat sink temperature > 80 °C
Temperature range:	-10 to + 40 °C
Connection type:	Plug connection with 2xM12
New functions:	Closed loop/sinusoidal commutation/dspDrive/programmable as a sequential controller using NanoJEasy (RS485)

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

Input circuit



Output circuit



Pin configuration RS485

W12 CONNECTOR 17 PIN		JST-ZPD-12	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Output 1	1	12 - 46 V
2	Output 2	2	12 - 46 V
3	Output 3	3	Power GND
4	Analog input	4	Power GND
5	GND	5	n.c.
6	GND		
7	RS485 Tx+		
10	RS485 Tx-		
9	RS485 Rx-		
8	RS485 Rx+		
11	Input 1		
12	Input 2		
13	Input 3		
14	Input 4		
15	Input 5		
16	Input 6		
17	n.c.		

CANopen pin configuration

W12 CONNECTOR 17 PIN		JST-ZPD-12	
PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Output 1	1	12 - 46 V
2	Output 2	2	12 - 46 V
3	Output 3	3	Power GND
4	Analog input	4	Power GND
5	+VB External	5	n.c.
6	GND (W001)		
7	CAN - H		
10	CAN - L		
9	GND		
8	GND		
11	Input 1		
12	Input 2		
13	Input 3		
14	Input 4		
15	Input 5		
16	Input 6		
17	GND		

Accessories

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

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

Other cable lengths available for larger quantities upon request

Order identifier

PD2-N4118L1804-IP

2= RS485

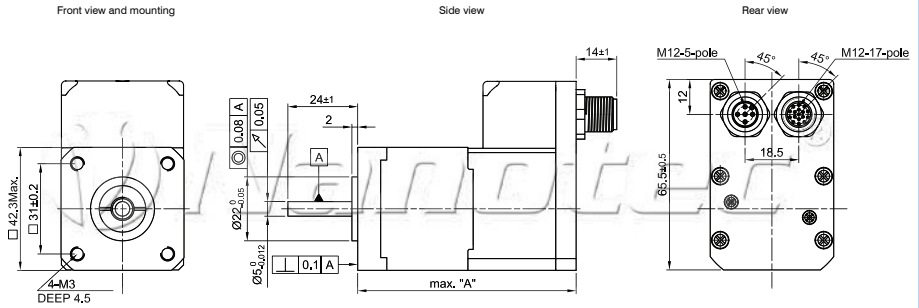
3= CANopen

Available versions (others on request)

Type	Holding torque (duration) Ncm	Weight kg	"A" mm
PD2-N4118L1804-IP	50	0,5	76,5

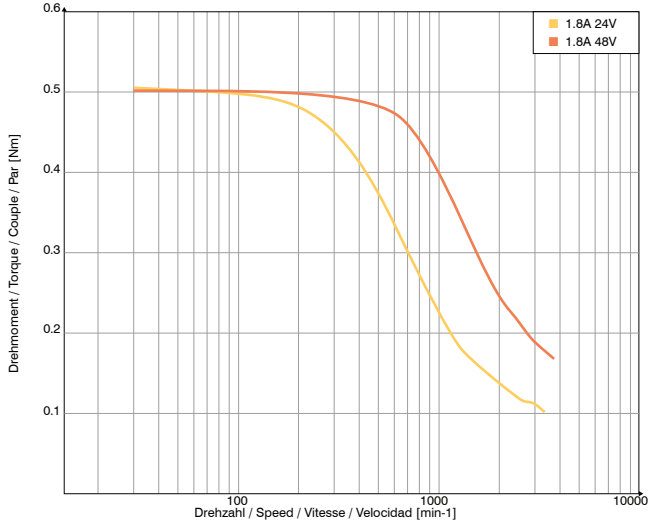
Dimension image (in mm)

PD2-N4118-IP



Speed/torque curves

PD2-N4118L1804-IP



PD4-N5918/N6018 series

Option

Gear

Software

NanoPro

NanoCAN

Nano

Technical data

Art:	High-pole DC servo motor (stepper motor)
Operating voltage:	24 to 48 V DC
Max. phase current:	Adjustable via software up to 4.8 A, (1% steps), 100%=3.2 A
Interface:	RS485 or CANopen
Operating type:	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 clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 opto-coupler inputs (5 to 24 V)
Outputs:	Open drain (0 switching, max. 24 V/0.5 A)
Position monitoring:	Automatic error correction up to 0.9°
Current reduction:	Adjustable by values of 1%
Protective circuit:	Overvoltage and heat sink temperature > 80 °C
Temperature range:	-10 to + 40 °C
Connection type:	Plug connection with JST connectors
New functions:	Closed loop/sinusoidal commutation/dspDrive/ programmable as a sequential controller using NanoJEasy (RS485)

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

Pin configuration

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-

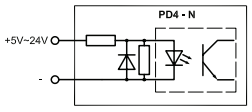
JST PHD-12

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

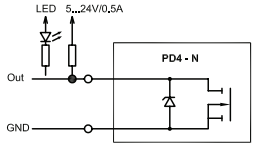
PHÖNIX CONNECTOR FK-MCP 1.5/2-ST-3.5

PIN	CABLE COLOR	ASSIGNMENT
1	Black	GND
2	Brown	VB_IN

Input circuit



Output circuit



Accessories

ZK-PD4N
Connection cable set
500 mm long with connector

ZIB-PDx-N Interface board for rapid setup and installation

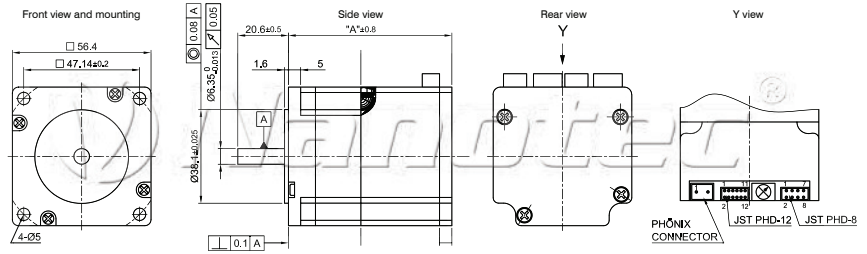
ZK-RS485-USB
RS485-USB cable for PC connection

Available versions (others on request)

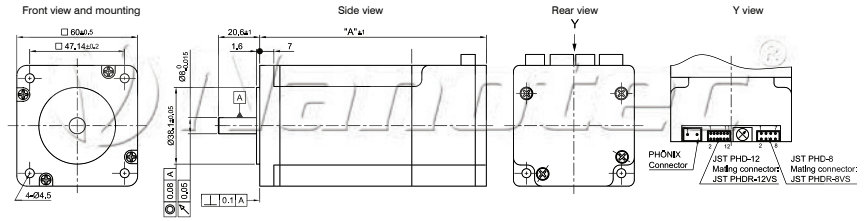
Type	Holding torque Ncm	Weight kg	"A" mm
PD4-N5918X4204	53,7	0,49	66,5
PD4-N5918M4204	113,0	0,80	80,6
PD4-N5918L4204	198,0	1,22	101,6
PD4-N6018L4204	354,0	1,48	112,5

Dimension image (in mm)

PD4-N5918...

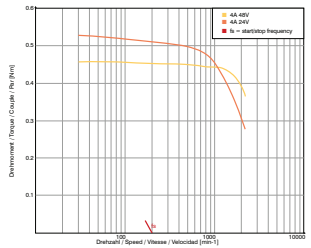


PD4-N6018L4204

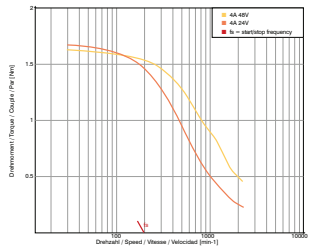


Speed/torque curves

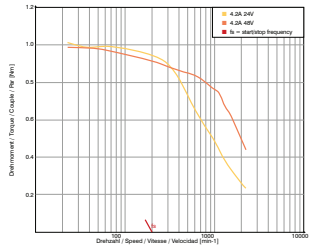
PD4-N5918X4204



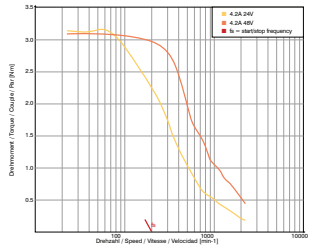
PD4-N5918L4204



PD4-N5918M4204



PD4-N6018L4204



PD4-N5918 series with protection class IP65

Option

Gear

Software

NanoPro

NanoCAN

NanoJ

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	8	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-	10		
RS485 Rx-	9		
RS485 Rx+	2		
Input 1	11		
Input 2	12		
Input 3	13		
Input 4	14		
Input 5	15		
Input 6	16		
n.c.	17		

CANopen 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	10		
n.c.	9		
n.c.	8		
Input 1	11		
Input 2	12		
Input 3	13		
Input 4	14		
Input 5	15		
Input 6	16		
n.c.	17		

Technical data

Art:	High-pole DC servo motor (stepper motor)
Operating voltage:	24 to 48 V DC
Max. phase current:	Adjustable via software up to 4.8 A, (1% steps), 100%=3.2 A
Interface:	RS485 or CANopen
Operating type:	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 clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 opto-coupler inputs (5 to 24 V)
Outputs:	Open drain (0 switching, max. 24 V/0.5 A)
Position monitoring:	Automatic error correction up to 0.9°
Current reduction:	Adjustable by values of 1%
Protective circuit:	Overvoltage and heat sink temperature > 80 °C
Temperature range:	-10 to + 40 °C
Connection type:	M12
New functions:	Closed loop/sinusoidal commutation/dspDrive/programmable as a sequential controller using NanoJEasy (RS485)

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

Order identifier

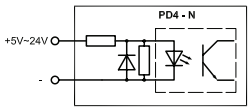
PD4-N5918L4204 - IP - 2

IP = with IP protection

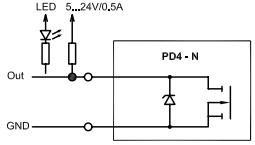
2 = RS485

3 = CANopen

Input circuit



Output circuit



Accessories

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

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

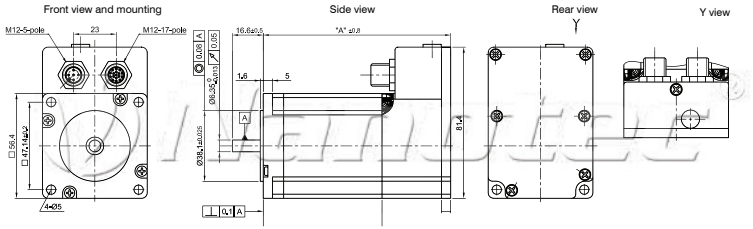
Other cable lengths in large quantities on request.

Available versions (others on request)

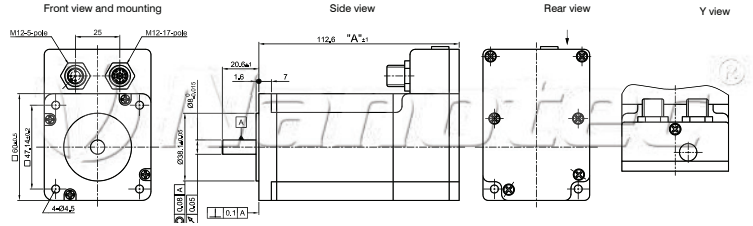
Type	Holding torque Ncm	Weight kg	"A" mm	Interface
PD4-N5918X4204-IP-2	53,7	0,49	66,5	RS485
PD4-N5918X4204-IP-3	53,7	0,49	66,5	CANopen
PD4-N5918M4204-IP-2	113,0	0,80	80,6	RS485
PD4-N5918M4204-IP-3	113,0	0,80	80,6	CANopen
PD4-N5918L4204-IP-2	198,0	1,22	101,6	RS485
PD4-N5918L4204-IP-3	198,0	1,22	101,6	CANopen
PD4-N6018L4204-IP-2	354,0	1,48	112,0	RS485
PD4-N6018L4204-IP-3	354,0	1,48	112,0	CANopen

Dimension image (in mm)

PD4N5918...-IP

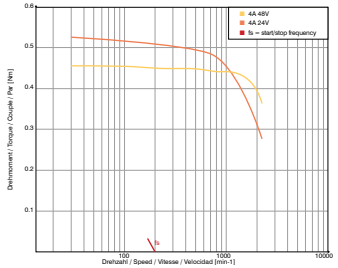


PD4N6018...-IP

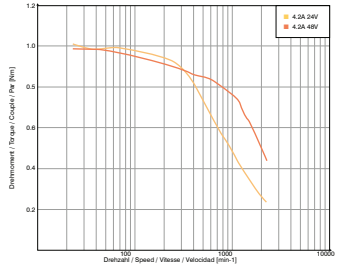


Speed/torque curves

PD4-N5918X4204



PD4-N5918M4204



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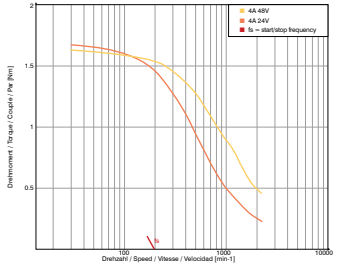
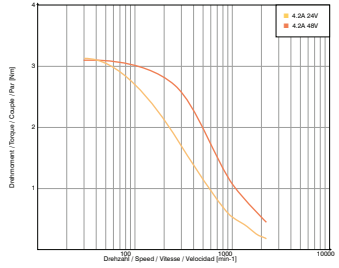


PD4-N6018L4204



PD4-C/CB series

Software

NanoJ V2

Technical data of motor

	PD4-C	PD4-CB
Version:	PD4-C	PD4-CB
Type:	High-pole DC servo (stepper motor)	Low-pole DC servo (BLDC)
Operating voltage:	12-48 V	12-24 V
Phase current eff.	4,2 A	8 A
RMS for 1S:	Max. 6,3 A	Max. 20 A

Technical data of I/O

Version:	01(USB)	08(CAN)
Operating types:	Torque, speed, position, homing	
Target value specification/programming:	Clock-direction, analog input, NanoJ V2, USB	CANopen, analog input, CANopen
Inputs:	Single/differential Clock/direction/enable (+5 V/+24 V), 3 digital inputs (+24 V) 1 analog input (0-10 V)	4 digital input (+5 V/+24 V), 1 analog input (0-10 V)
Outputs:	1 output, max. 0.5 A, open drain	2 outputs, max. 0.5 A, open drain

Integrated encoder: single turn, magnetic absolute encoder, 1024 CPR

Pin configuration PD4-C/-CB

X1 4 pin	
CONNECTOR/PIN	**FUNCTION**
1	GND
2	Analog input (0-10 V)
3	Output (open drain)
4	+12 V (voltage output, max. 100 mA)

X2 10 pin	
CONNECTOR/PIN	**FUNCTION**
1	Input1 (+24 V)
2	Input2 (+24 V)
3	Input3 (+24 V)
4	-Enable +5/+24 V
5	Enable +5/+24 V
6	-Direction +5/+24 V
7	Direction +5/+24 V
8	-Clock +5/+24 V
9	Clock +5/+24 V
10	GND

X3 2 pin	
CONNECTOR/PIN	**FUNCTION**
1	+Vcc
2	GND

Pin configuration PD4-C-CAN/CB-CAN

X1 4 pin	
CONNECTOR/PIN	**FUNCTION**
1	GND
2	CAN-
3	CAN+
4	+VB external

X2 10 pin	
CONNECTOR/PIN	**FUNCTION**
1	GND
2	Analog input (0-10 V)
3	+12 V (voltage output, max. 100 mA)
4	Output1 (open drain)
5	Output2 (open drain)
6	Input1 (+5/+24 V)
7	Input2 (+5/+24 V)
8	Input3 (+5/+24 V)
9	Input4 (+5/+24 V)
10	GND

X3 2 pin	
CONNECTOR/PIN	**FUNCTION**
1	+Vcc
2	GND

Order identifier

PD4-C5918M4204-E-

01 = USB/dip switch

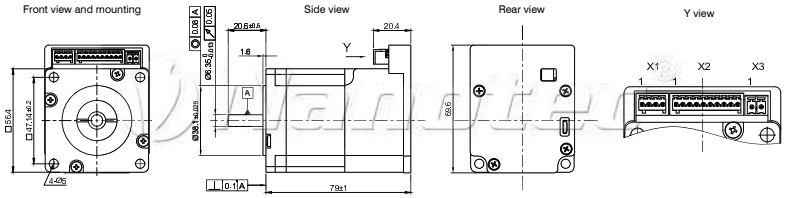
08 = CAN

Available versions (others on request)

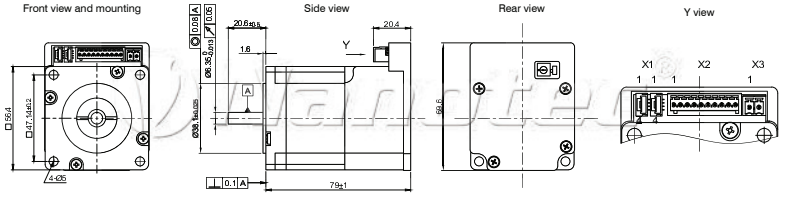
Type	Holding torque Ncm	Nom./peak torque Ncm	Nominal Speed (rpm)	Length mm	Weight kg
PD4-C5918M4204-E-01/-08	110			81	0,8
PD4-C6018L4204-E-01/-08	350			111	1,5
PD4-CB59M024035-E-01		37 (110)	3500	86	0,9

Dimension image (in mm)

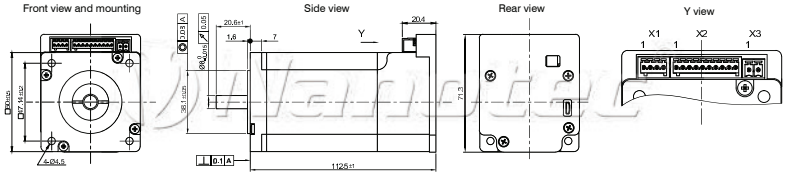
PD4-C5918M4204-E-01



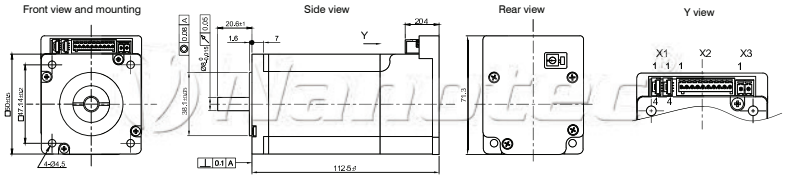
PD4-C5918M4204-E-08



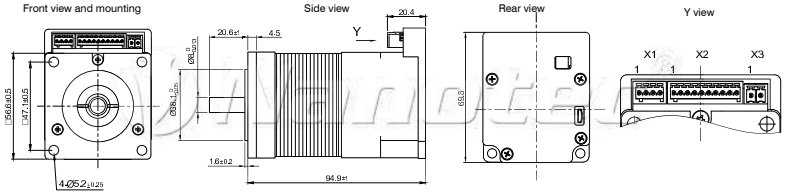
PD4-C6018L4204-E-01



PD4-C6018L4204-E-08



PD4-CB59M024035-E-01



PD6-N8918 series

Option

Gear

Software

NanoPro

NanoCAN

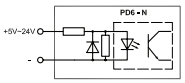
NanoJ

Technical data

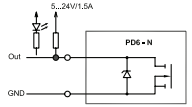
Art:	High-pole DC servo motor (stepper motor)
Operating voltage:	24 to 48 V DC
max. phase current:	Adjustable up to max. 10.5 A/phase, 7 A nominal current
Interface:	RS485 or CANopen
Operating type:	Position, speed, flag position, clock-direction, analog, analog position, torque
Position monitoring:	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 clock/direction mode, 0 to 25 kHz in all other modes
Inputs:	6 opto-coupler inputs (5 to 24 V), analog input
Outputs:	Open drain (0 switching, max. 24 V/1.5 A)
Current reduction:	Adjustable by values of 1%
Protective circuit:	Overvoltage and heat sink temperature > 80 °C
Temperature range:	0 to + 40 °C
Connection type:	2 x 2 m cable
New functions:	Closed loop/sinusoidal commutation programmable as a sequential controller using NanoJEasy (RS485)

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

Input circuit



Output circuit



Accessories

ZIB-PDx-N Interface board for rapid startup and installation

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

ZK-TW-18 length 2 m

ZK-TW-3 length 2 m
Cable for Twintus connector
Other lengths on request (from 50 units)

Order identifier

PD6-N8918S6404 -(S)

S = motor length

S = M16 Twintus connector

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
+ VB LOGIC	White/pink (20~48 V)

POWER CABLE	
FUNCTION	**Cable no./COLOR**
+ VB	1
GND	2
Protective conductor	Green/yellow

M16 Twintus connector pin configuration

M16 CONNECTOR 18 PIN	
FUNCTION	**PIN NO.**
Output 1	1
Output 2	2
Output 3	3
Analog input	4
+VB External	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
CAN -	17
CAN +	18

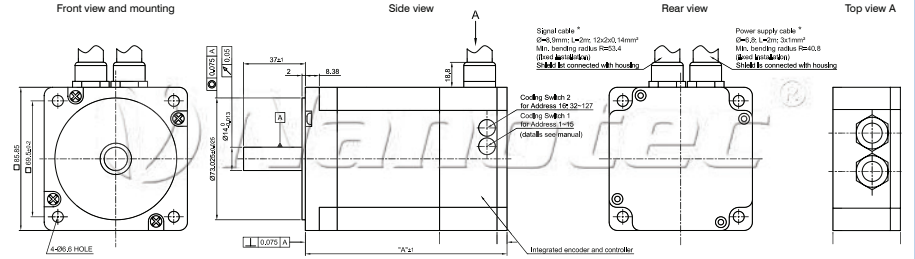
M16 CONNECTOR 3 PIN	
FUNCTION	**PIN NO.**
+ VB	1
GND	2
Protective wire	3

Available versions (others on request)

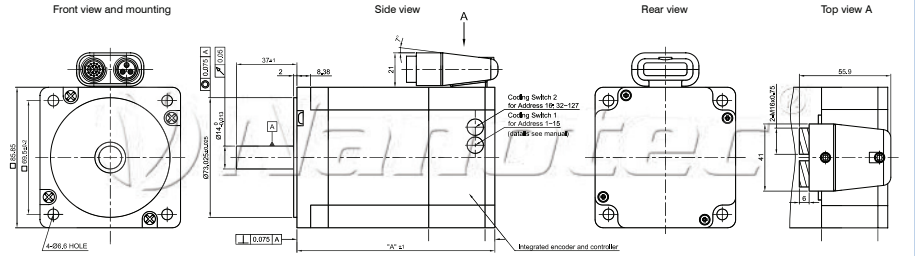
Type	Holding torque Ncm	Supply voltage Ncm	Weight kg	"A" mm	Option with Twintus connector
PD6-N8918S6404	320	24-48	1,7	89	
PD6-N8918S6404-S	320	24-48	1,7	89	X
PD6-N8918M9504	590	24-48	3,4	121	
PD6-N8918M9504-S	590	24-48	3,4	121	X
PD6-N8918L9504	930	24-48	4,0	151	
PD6-N8918L9504-S	930	24-48	4,0	151	X

Dimension image (in mm)

PD6-N8918...

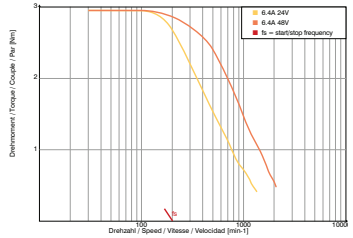


PD6-N8918...-S

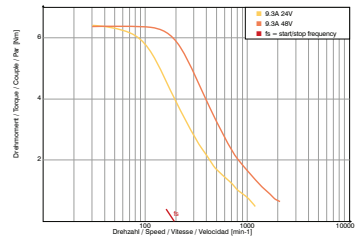


Speed/torque curves

PD6-N8918S6404



PD6-N8918M9504



PD6-N8918L9504