

Motor types and sizes

Motor identification

Designation	Motor		
	Type	Size □ [mm]	Brake
STMN-28-L-E*	Stepper	28	-
STMN-28-L-E-B*	Stepper	28	with
STMN-42-L-E	Stepper	42	-
STMN-42-L-E-B	Stepper	42	with
STMN-56-L-E	Stepper	56	-
STMN-56-L-E-B	Stepper	56	with

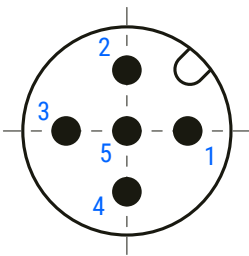
*Available soon.

Motor pin allocation

Valid for stepper motor size of 42 and 56 mm. Stepper motor size of 28 mm is available soon.

Motor connector

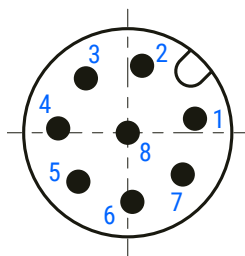
Connector type: M12 5-pole



Pin	Function
1	A-
2	A+
3	B+
4	B-
5	Housing

Encoder connector

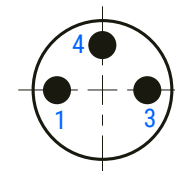
Connector type: M12 8-pole



Pin	Function
1	A-
2	A+
3	B+
4	B-
5	GND
6	I-
7	I+
8	VCC (5 V)
Housing	GND/shielding

Brake connector

Connector type: M8 3-pole



Valid only for motors with a brake.

Pin	Function
1	Brake +24V
3	Brake/GND
4	NC

Technical data

Motor

Designation	Voltage [V DC]	Current per phase [A]	Mass moment of inertia [kg cm ²]	Holding torque [Nm]	Step angle [°]
STMN-28-L-E			Available soon		
STMN-28-L-E-B			Available soon		
STMN-42-L-E	3,15	1,8	0,082	0,5	1,8 ± 5 %
STMN-42-L-E-B	3,15	1,8	0,095	0,5	1,8 ± 5 %
STMN-56-L-E	2,4	4,2	0,480	1,87	1,8 ± 5 %
STMN-56-L-E-B	2,4	4,2	0,501	1,87	1,8 ± 5 %

Designation	Resistance per phase [Ohm]	Inductance per phase [mH]	Voltage constant [mV/min ⁻¹]	Mass [kg]
STMN-28-L-E			Available soon	
STMN-28-L-E-B			Available soon	
STMN-42-L-E	1,75 ± 10 %	3,3 ± 20 %	23	0,44
STMN-42-L-E-B	1,75 ± 10 %	3,3 ± 20 %	23	0,57
STMN-56-L-E	0,58 ± 15 %	1,9 ± 20 %	32,5	1,14
STMN-56-L-E-B	0,58 ± 15 %	1,9 ± 20 %	32,5	1,33

Encoder

Designation	Type	Measuring principle	Interface	Resolution [cpr/ppr]	Operating voltage [V DC]
STMN-28-L-...					Available soon
STMN-42-L-...	Incremental	Opto-electrical	Line drive	500/2000	5
STMN-56-L-...	Incremental	Opto-electrical	Line drive	500/2000	5

Brake

Designation	Operating voltage [V DC]	Rated output [W]	Holding torque [Nm]	Mass moment of inertia [kg cm ²]
STMN-28-L-...				Available soon
STMN-42-L-...	24 (+6/-10 %)	8	0,4	0,013
STMN-56-L-...	24 (+6/-10 %)	10	1,0	0,021

Operating conditions

Ambient temperature	-10 °C ~ +50 °C
Ambient humidity	max. 85 % (non-condensing)
Protection class*	IP65
Duty cycle	100 %

*Except the shaft output.

Drive types

Drive identification and compatibility

Designation	Type	Drive Protocol/control	Compatible with
STDF-28-A-EC*	Stepper	EtherCat	STMN-28-L-...
STDF-42-A-EC	Stepper	EtherCat	STMN-42-L-...
STDF-56-A-EC	Stepper	EtherCat	STMN-56-L-...
STDF-28-A-EN*	Stepper	Ethernet based communication	STMN-28-L-...
STDF-42-A-EN	Stepper	Ethernet based communication	STMN-42-L-...
STDF-56-A-EN	Stepper	Ethernet based communication	STMN-56-L-...
STDF-28-A-PD*	Stepper	Pulse-direction control	STMN-28-L-...
STDF-42-A-PD	Stepper	Pulse-direction control	STMN-42-L-...
STDF-56-A-PD	Stepper	Pulse-direction control	STMN-56-L-...

*Available soon.

Technical data

Designation	Operating voltage [V DC]	Current consumption* [mA]	Rotational speed [rpm]	Supported resolution** [ppr]
STDF-...-EC	24 ± 10 %	max. 500	0 ~ 3000	500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000
STDF-...-EN	24 ± 10 %	max. 500	0 ~ 3000	500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000
STDF-...-PD	24 ± 10 %	max. 500	0 ~ 3000	500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000

Designation	Input signals	Output signals
STDF-...-EC	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN); 7 user inputs (Photocoupler)	6 user outputs (Photocoupler); Brake
STDF-...-EN	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN); 9 Programmable inputs (Photocoupler)	1 dedicated output (Compare out); 9 programmable outputs (Photocoupler); Brake
STDF-...-PD	Position command pulse; Servo on/off; Alarm reset (Photocoupler input)	In-position; Alarm (Photocoupler output); Encoder signal, brake

*Except the motor current.

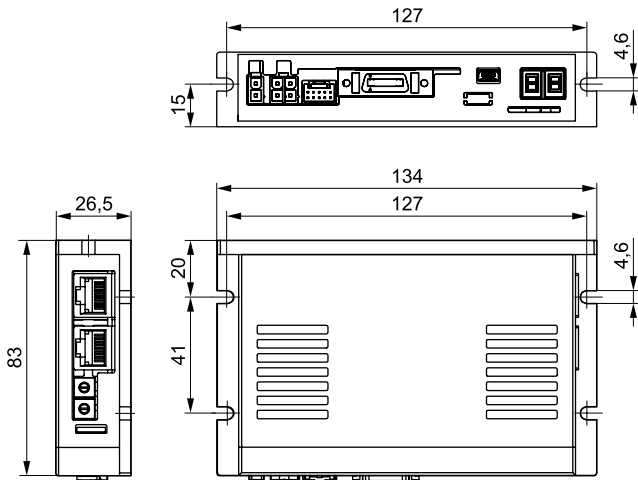
**For the case that resolution is higher than the encoder's resolution, the motor shall operate by micro-step between pulses.

Operating conditions

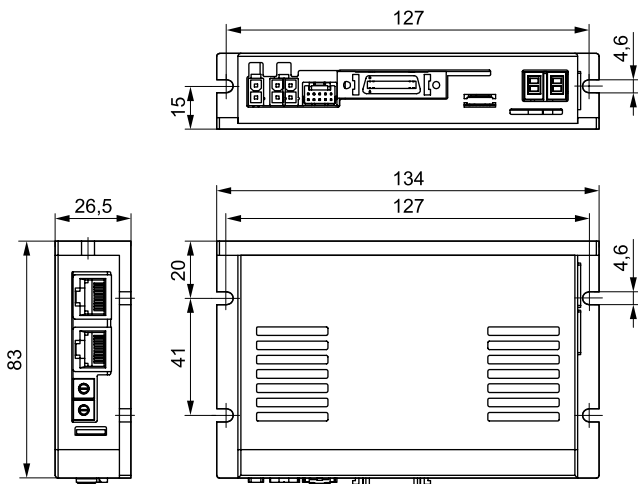
Ambient temperature	0 °C ~ +50 °C
Ambient humidity	35 % - 85 % (non-condensing)
Vibration resistance	0,5 G
Duty cycle	100 %

Dimensions

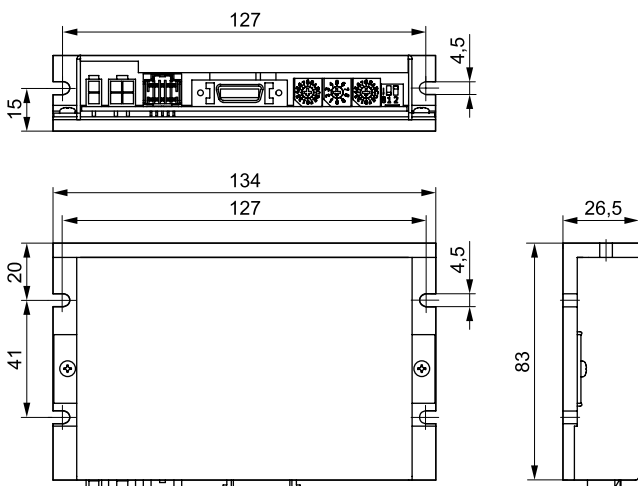
Stepper drive → EtherCAT protocol



Stepper drive → Ethernet based communication



Stepper drive → Pulse-direction control



Drive-motor cables

Drive to motor cables in general consist of:

- 1 - a motor cable
- 2 - an encoder cable
- 3 - a brake cable (only if a motor with brake is used).

For the stepper motor size of 28 motor and brake cables are combined in one cable.

Additional cable, i.e. brake to terminal cable is included for the case of the motor (□28) with the brake.

Cables identification and compatibility

Designation	Cable type	Compatible with
STCF-M-_8-...*	Motor; Brake	STMN-28-...; STMN-28-...-B
STCF-M-_12-...	Motor	STMN-42-...; STMN-42-...-B; STMN-56-...; STMN-56-...-B
STCF-BT-02*	Brake to terminal	STMN-28-...-B
STCF-B-_8-...	Brake	STMN-42-...-B; STMN-56-...-B
STCF-E-_8-...*	Encoder	STMN-28-...; STMN-28-...-B
STCF-E-_12-...	Encoder	STMN-42-...; STMN-42-...-B; STMN-56-...; STMN-56-...-B

*Available soon.

Technical data

Stepper motor size of 28 mm

Available soon.

Stepper motor size of 42 and 56 mm

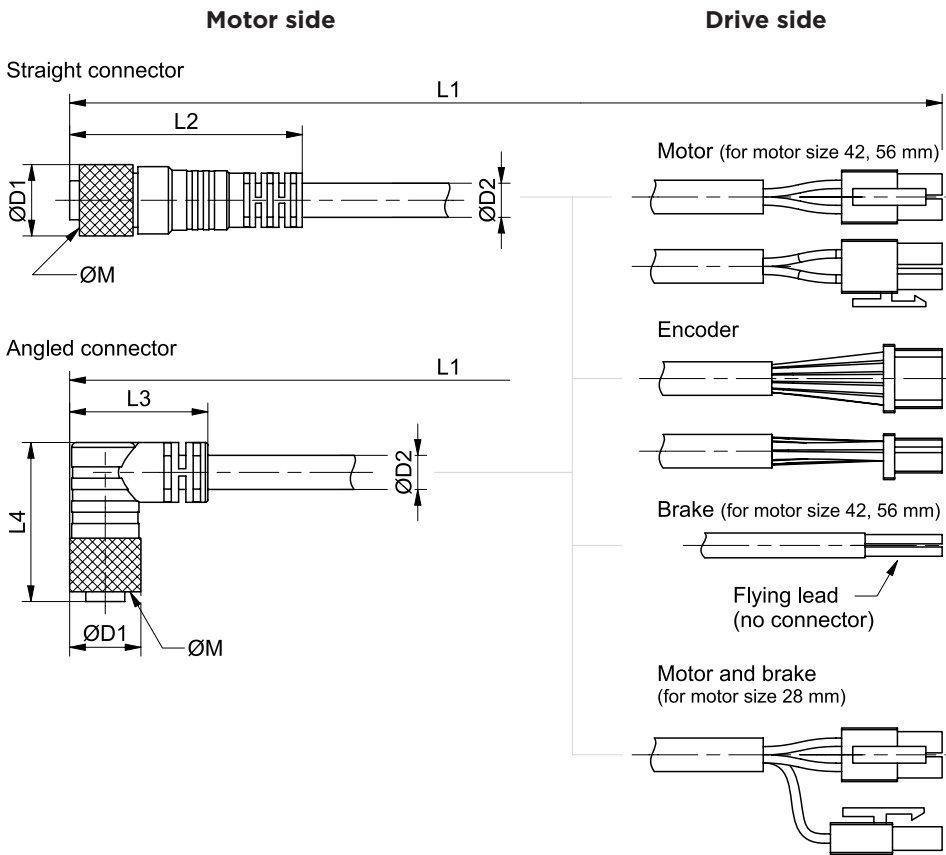
Designation	Length [m]	Cable diameter D [mm]	Material, color	Bending radius (dyn.) [mm]	Shielded?
STCF-M-_12-...	3, 5, 10	5,1	TPE, black	min. 7,5 × D	Yes
STCF-B-_8-...	3, 5, 10	4,5	TPE, black	min. 7,5 × D	Yes
STCF-E-_12-...	3, 5, 10	6,7	TPE, black	min. 7,5 × D	Yes

Operating conditions

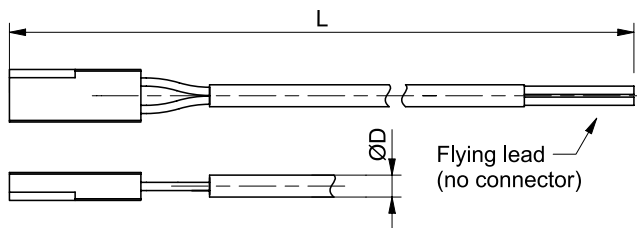
Ambient temperature (fixed laying)	-40 °C ~ +70 °C
Ambient temperature (flexible application)	5 °C ~ +70 °C

Dimensions

Drive to motor cables for the stepper motors (only for the STDF and STMN motors).



Brake to terminal cables



Motor, encoder, brake and brake to terminal cables

Designation	Cable type	L [m]	L1 [m]	L2 [mm]	L3 [mm]	L4 [mm]	$\varnothing D$ [mm]	$\varnothing D_1$ [mm]	$\varnothing D_2$ [mm]	$\varnothing M$ [mm]
STCF-M-_8-...	Motor	-	-	-	-	-	-	-	-	-
STCF-M-_12-...	Motor	-	3, 5, 10	47,7	28,4	32,6	-	14,6	5,1	M12
STCF-B-_8-...	Brake	-	3, 5, 10	41,7	30,9	25,2	-	9,9	4,5	M8
STCF-BT-02	Brake to terminal	2	-	-	-	-	Available soon	-	-	-
STCF-E-_8-...	Encoder	-	-	-	-	-	-	-	-	-
STCF-E-_12-...	Encoder	-	3, 5, 10	47,7	28,4	32,6	-	14,6	6,7	M12

Power and signal cables

Power cable is used for supplying the power from power supply to the drive. Signal cable is mandatory for the following cases:

- 1 - If a motor with brake is used
- 2 - If a pulse-direction drive control is used
- 3 - If the limit switches are used.

Cables identification and compatibility

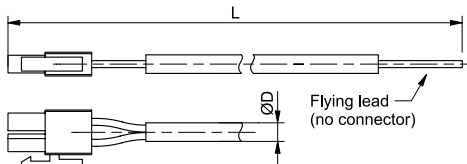
Designation	Cable type	Compatible with
STCF-P-02	Power	STDF-...-EC; STDF-...-EN; STDF-...-PD
STCF-S-EC-02	Signal	STDF-...-EC
STCF-S-EN-02	Signal	STDF-...-EN
STCF-S-PD-02	Signal	STDF-...-PD

Technical data

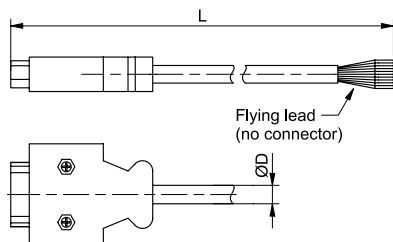
Designation	Length [m]	Cable diameter [mm]	Material, color	Shielded?
STCF-P-02	2	4,6	PVC, black	Yes
STCF-S-EC-02	2	6,4	PVC, black	Yes
STCF-S-EN-02	2	6,9	PVC, black	Yes
STCF-S-PD-02	2	6,4	PVC, black	Yes

Dimensions

Power cables for the stepper motors (only for the STDF drives)



Signal cables for the stepper motors (only for the STDF drives)



Designation	Cable type	L [m]	ØD [mm]
STCF-P-02	Power	2	4,6
STCF-S-EC-02	Signal	2	6,4
STCF-S-EN-02	Signal	2	6,9
STCF-S-PD-02	Signal	2	6,4