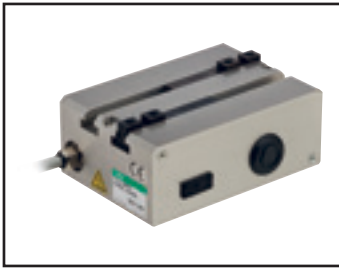




### CONTENTS

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• FFLD-30	4
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● Model selection	20
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## Electric Actuator 2-Finger Gripper

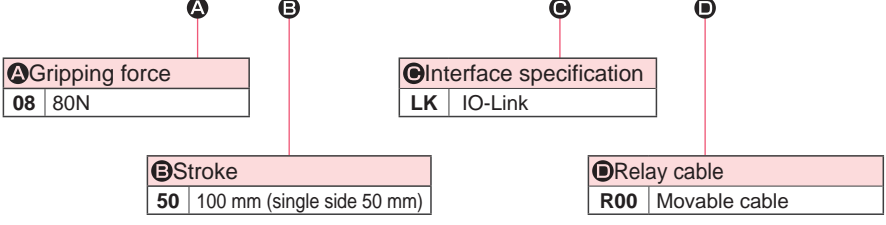
# FFLD-08

20 Stepper motor



### How to order

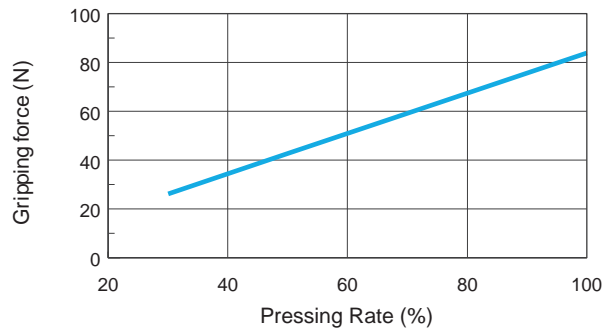
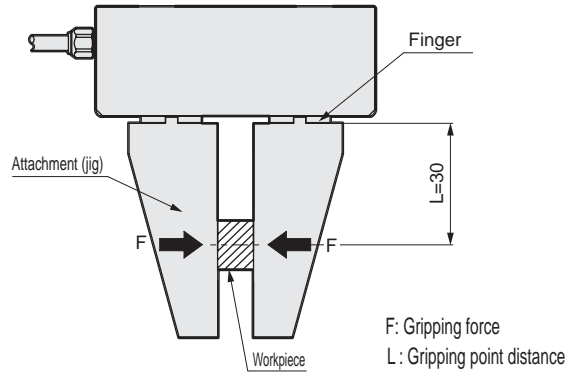
**FFLD** - **08** **50** **N C N 30** - **LK** **S** **R00**



### Specifications

Motor	<input type="checkbox"/> 20 stepper motor
Encoder type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke	mm 100 (50 per side)
Max. gripping force *1	N 80 (per side)
Open/close speed range	mm/s 1 to 10 (per side)
Gripping speed range *1	mm/s 1 to 5 (per side)
Repeatability *2	mm ±0.02
Positioning repeatability *3	mm ±0.05 (per side)
Lost motion	mm 0.4 or less (per side)
Static allowable moment	Nm MP: 15, MY: 15, MR: 15
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply voltage	Communication/control 24 VDC ±10%
	Power 24 VDC ±10%
Current consumption	Communication/control A 0.2 or less
	Power A 1.1 or less
Motor section max. instantaneous current	A 1.5
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	kg 1.2

### Gripping force and pressing rate

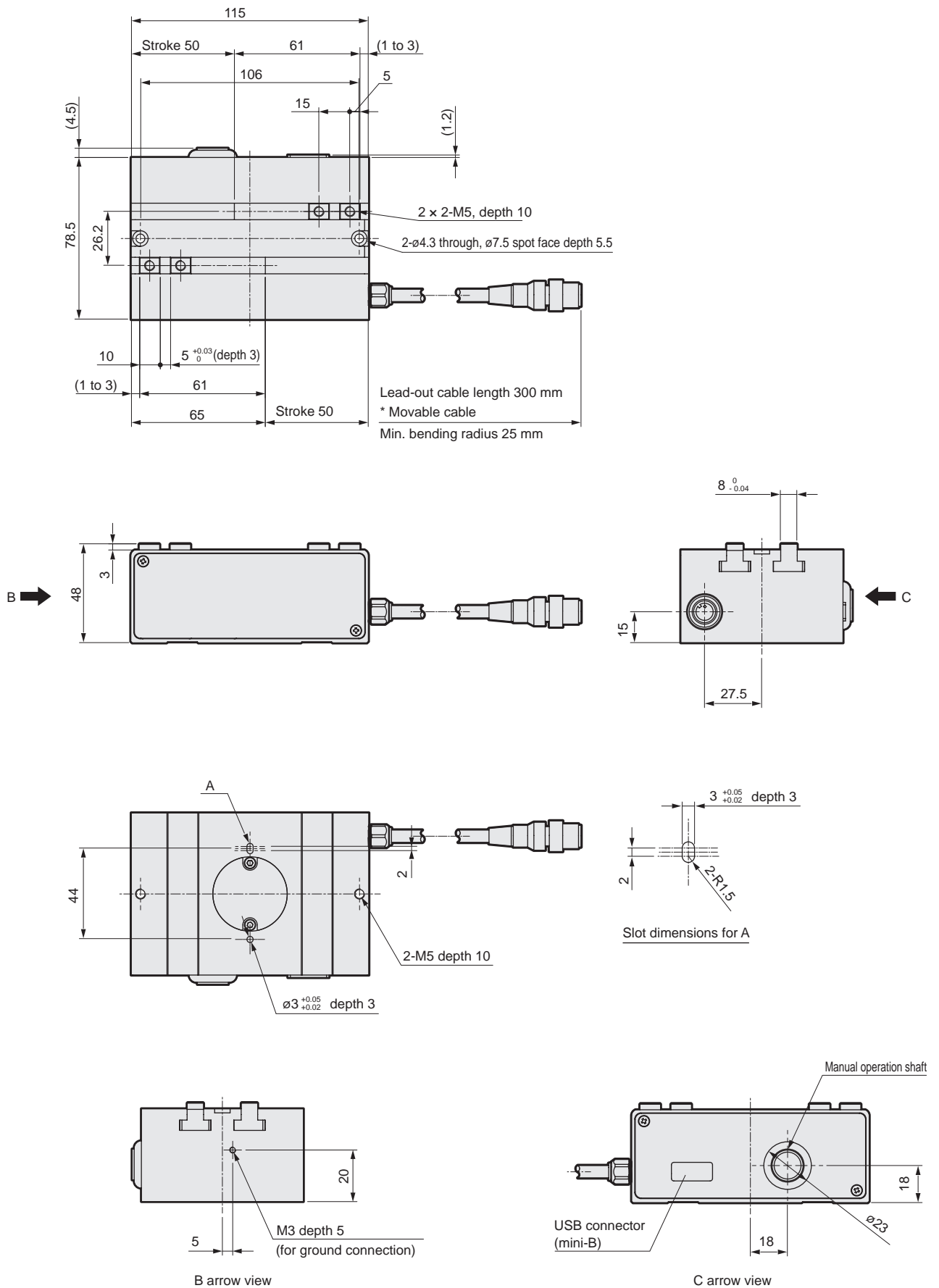


\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeat accuracy indicates the variation when the same workpiece is repeatedly gripped at the same force, under the same operation conditions.  
\*3 The stop position will vary if positioning repeatability is checked using the same point.

Dimensions



FFLD

FFLD  
(High speed)

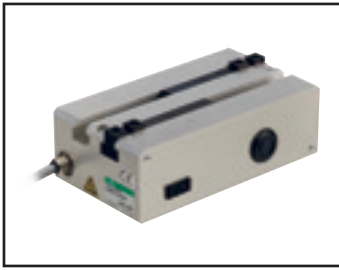
System  
Configuration

Field Network  
Description

Model Selection

Technical Data

Safety  
Precautions



## Electric Actuator 2-Finger Gripper

# FFLD-30

25L stepping motor



### How to order

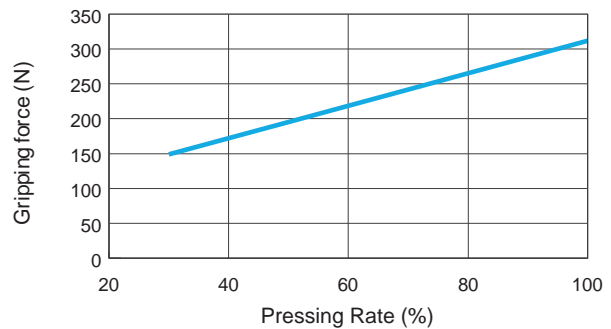
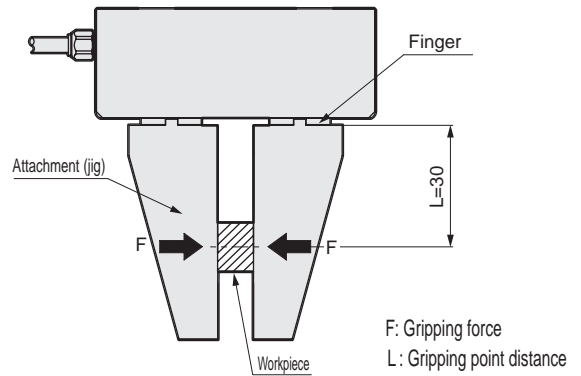
**FFLD** - **30** **70** **N C N 30** - **LK** **S** **R 00**

<b>A</b> Gripping force	<b>C</b> Interface specification
<b>30</b> 300 N	<b>LK</b> IO-Link
<b>B</b> Stroke	<b>D</b> Relay cable
<b>70</b> 140 mm (single side 70 mm)	<b>R00</b> Movable cable

### Specifications

### Gripping force and pressing rate

Motor	<input type="checkbox"/> 25L stepper motor
Encoder type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke	mm 140 (70 per side)
Max. gripping force *1	N 300 (per side)
Open/close speed range	mm/s 1 to 10 (per side)
Gripping speed range *1	mm/s 1 to 5 (per side)
Repeatability *2	mm ±0.02
Positioning repeatability *3	mm ±0.05 (per side)
Lost motion	mm 0.4 or less (per side)
Static allowable moment	N·m MP: 45, MY: 45, MR: 45
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply voltage	Communication/control 24 VDC ±10%
	Power 24 VDC ±10%
Current consumption	Communication/control A 0.2 or less
	Power A 2.8 or less
Motor section max. instantaneous current	A 4.0
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	kg 1.7



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.  
\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeat accuracy indicates the variation when the same workpiece is repeatedly gripped at the same force, under the same operation conditions.  
\*3 The stop position will vary if positioning repeatability is checked using the same point.

Dimensions

FFLD

FFLD (High speed)

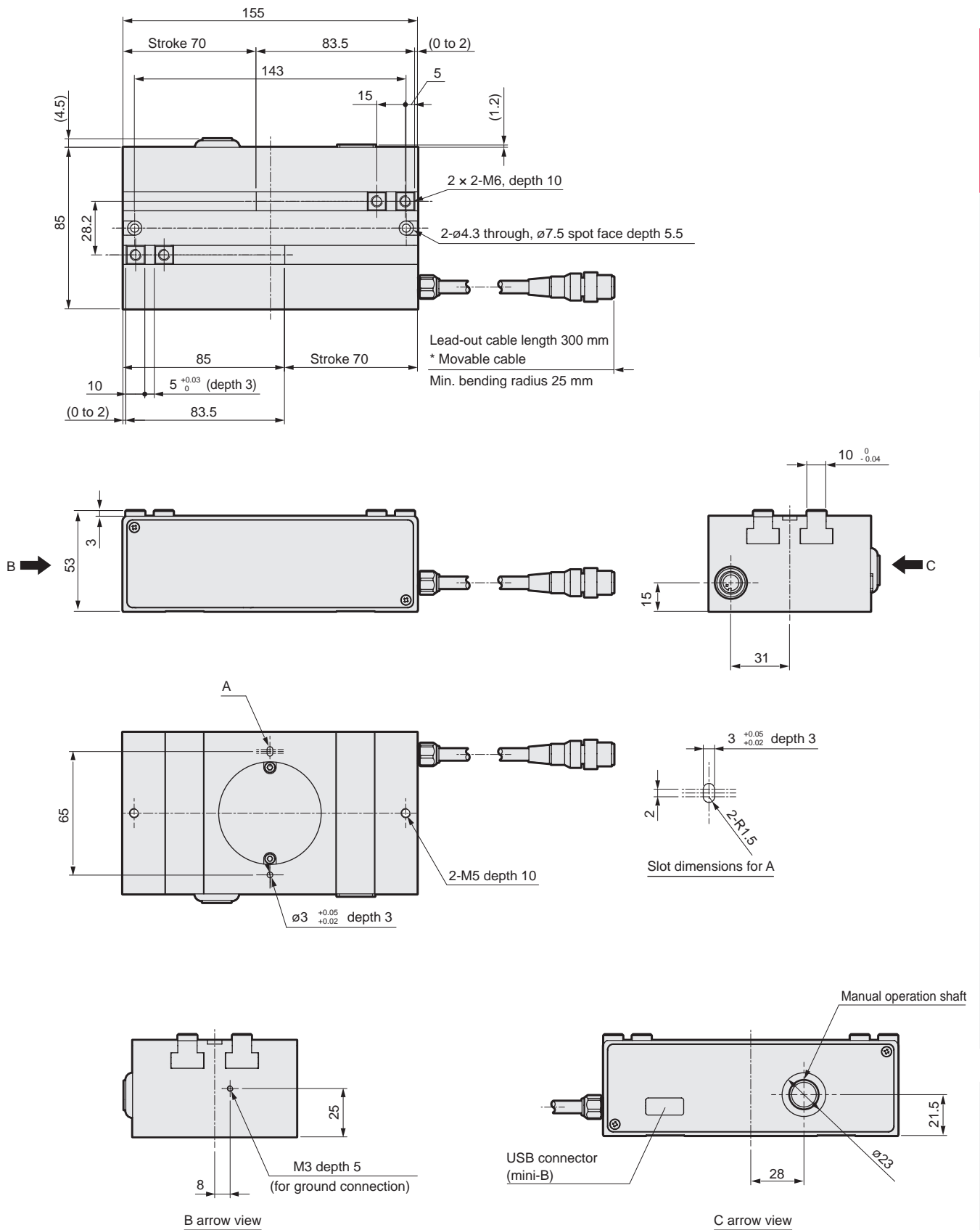
System Configuration

Field Network Description

Model Selection

Technical Data

Safety Precautions





## Electric Actuator 2-Finger Gripper

# FFLD-50

25L stepping motor



### How to order

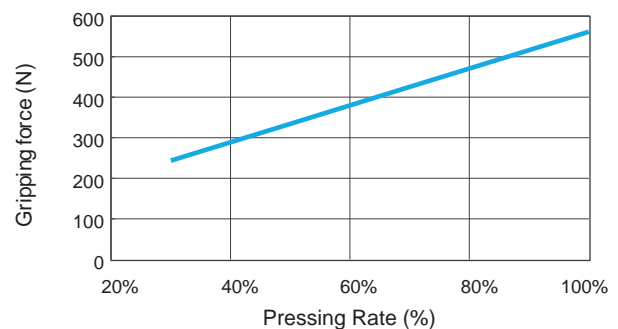
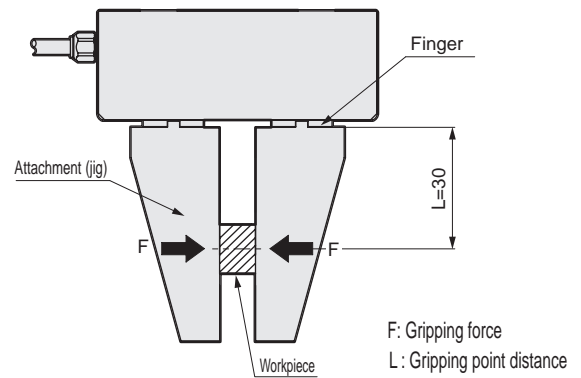
**FFLD** - **50** **80** **N C N 30** - **LK** **S** **R 00**

<b>A</b> Gripping force	<b>C</b> Interface specification
<b>50</b> 500 N	<b>LK</b> IO-Link
<b>B</b> Stroke	<b>D</b> Relay cable
<b>80</b> 160 mm (single side 80 mm)	<b>R00</b> Movable cable

### Specifications

### Gripping force and pressing rate

Motor	<input type="checkbox"/> 25L stepper motor
Encoder type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke	mm 160 (80 per side)
Max. gripping force *1	N 500 (per side)
Open/close speed range	mm/s 1 to 10 (per side)
Gripping speed range *1	mm/s 1 to 5 (per side)
Repeatability *2	mm ±0.02
Positioning repeatability *3	mm ±0.05 (per side)
Lost motion	mm 0.4 or less (per side)
Static allowable moment	N·m MP: 64, MY: 55, MR: 64
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply	Communication/control 24 VDC ±10%
voltage	Power 24 VDC ±10%
Current	Communication/control A 0.2 or less
consumption	Power A 2.8 or less
Motor section max. instantaneous current	A 4.0
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50 °C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	kg 2.5



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.  
\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeat accuracy indicates the variation when the same workpiece is repeatedly gripped at the same force, under the same operation conditions.  
\*3 The stop position will vary if positioning repeatability is checked using the same point.

FFLD

FFLD  
(High speed)

System  
Configuration

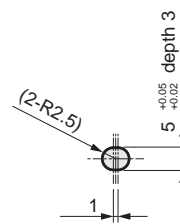
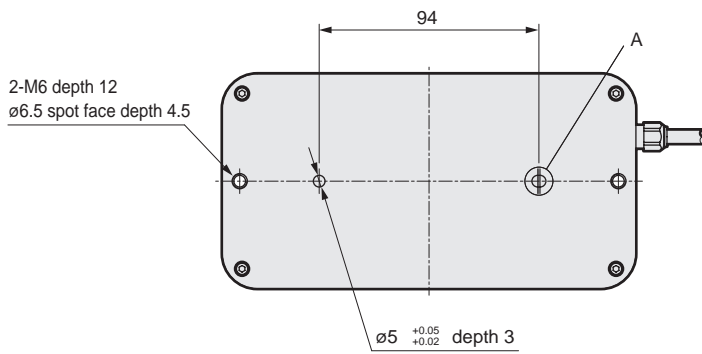
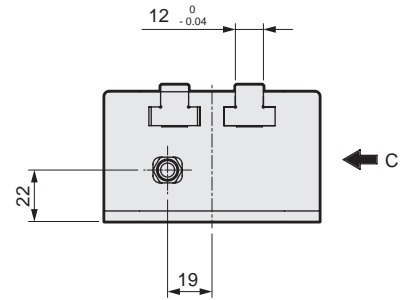
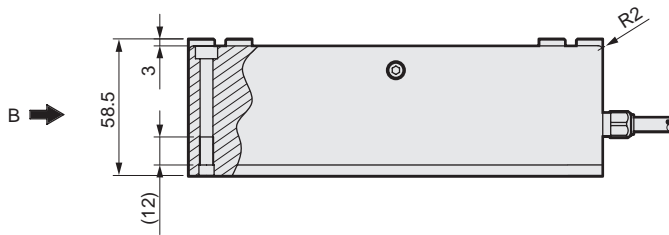
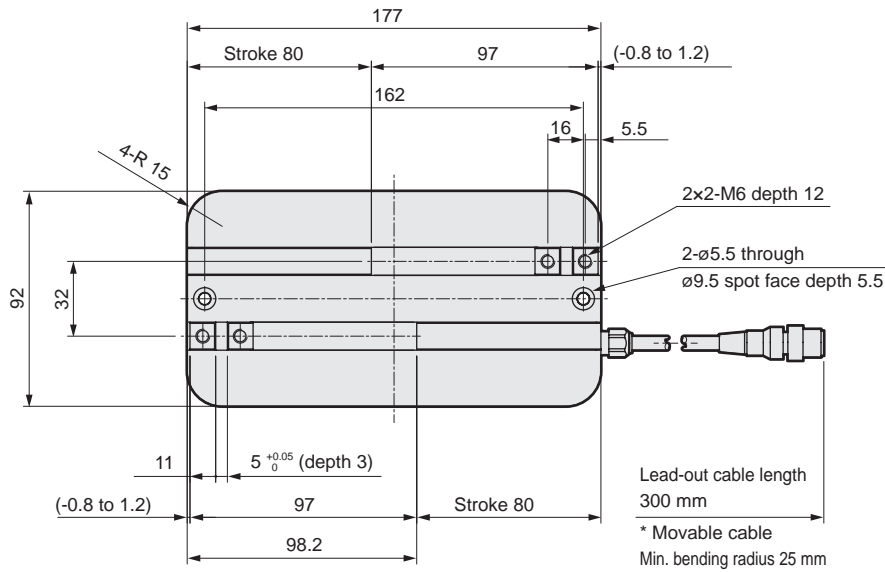
Field Network  
Description

Model Selection

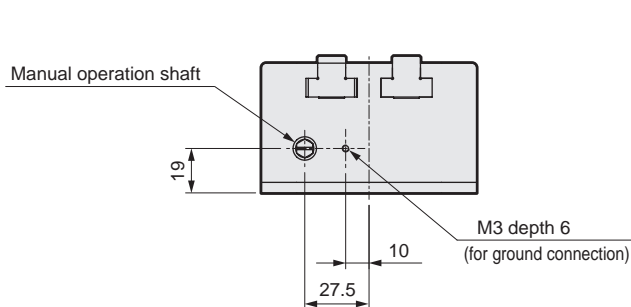
Technical Data

Safety  
Precautions

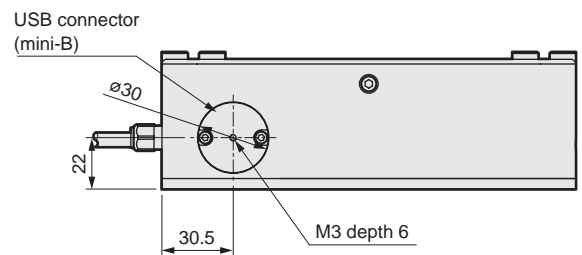
Dimensions



Slot dimensions for A



B arrow view



C arrow view

FFLD
FFLD (High speed)
System Configuration
Field Network Description
Model Selection
Technical Data
Safety Precautions

Safety  
Precautions

Technical Data

Model Selection

Field Network  
Description

System  
Configuration

FFLD  
(High speed)

FFLD



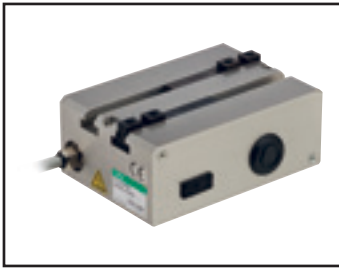
# FFLD-H

2-Finger Gripper high speed



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• FFLD-12H	12
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Electric Actuator 2-Finger Gripper High speed

# FFLD-04H

20 Stepper motor



## How to order

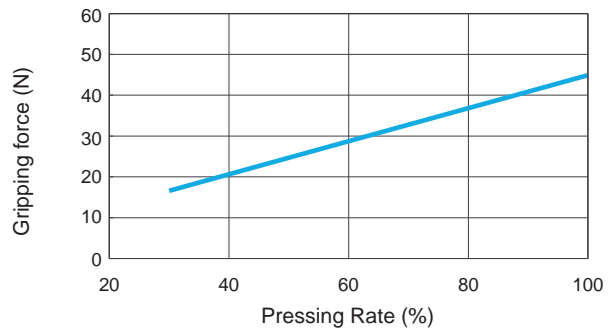
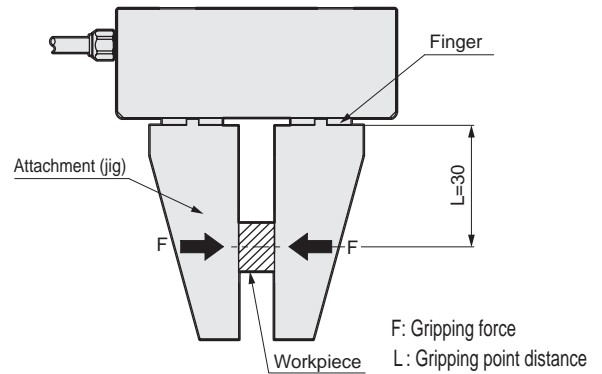
**FFLD** - **04** H **50** N C N 30- **LK** S **R00**

<b>A</b> Gripping force	<b>C</b> Interface specification
04 40N	LK IO-Link
<b>B</b> Stroke	<b>D</b> Relay cable
50 100 mm (single side 50 mm)	R00 Movable cable

## Specifications

## Gripping force and pressing rate

Motor	<input type="checkbox"/> 20 Stepper motor
Encoder-type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke mm	100 (50 per side)
Max. gripping force *1 N	40 (per side)
Open/close speed range mm/s	1 to 30 (per side)
Gripping speed range *1 mm/s	1 to 5 (per side)
Repeatability *2 mm	±0.02
Positioning repeatability *3 mm	±0.05 (per side)
Lost motion mm	0.4 or less (per side)
Static allowable moment N·m	MP: 15, MY: 15, MR: 15
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply	24 VDC ±10%
Communication/control voltage	
Power	24 VDC ±10%
Current	0.2 or less
Communication/control	
consumption	
Power	1.1 or less
A	
Motor section max. instantaneous current	1.5
A	
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	1.2
kg	



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.  
\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.  
\*3 The variation of stopping position when positioning is repeatedly performed to the same point is shown.

FFLD

FFLD (High speed)

System Configuration

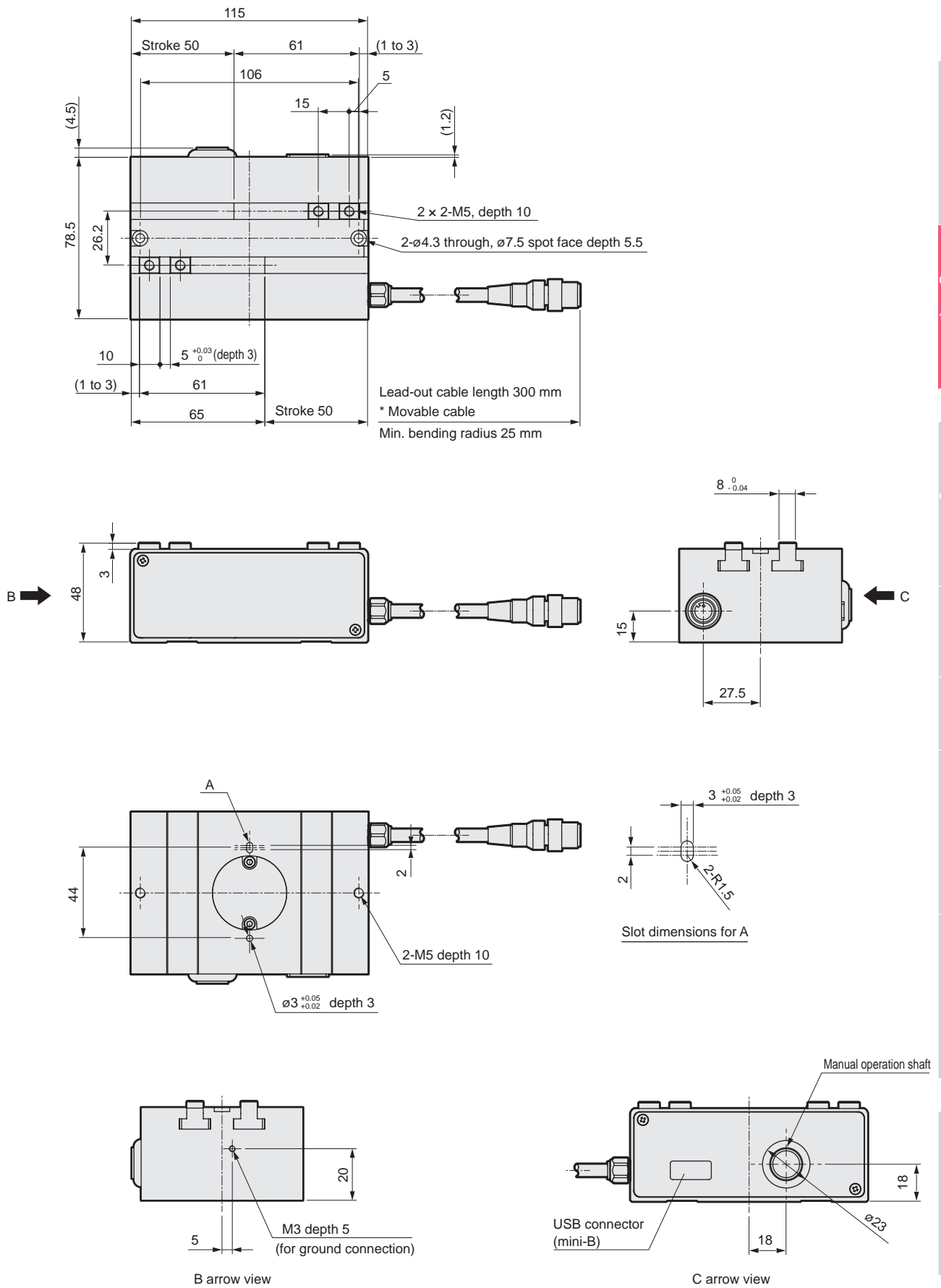
Field Network Description

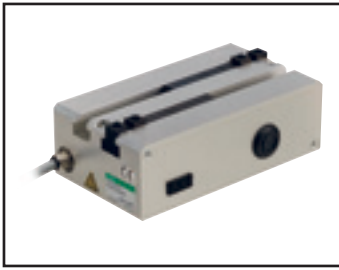
Model Selection

Technical Data

Safety Precautions

Dimensions





Electric Actuator 2-Finger Gripper High speed

# FFLD-12H

25L stepping motor



## How to order

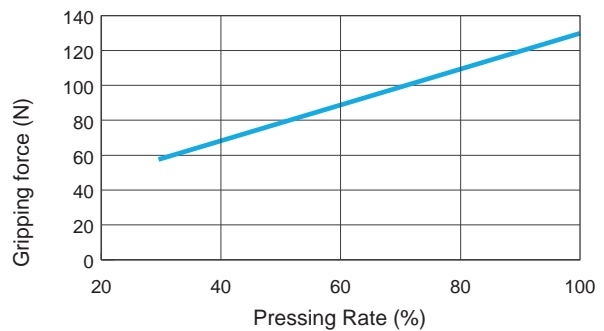
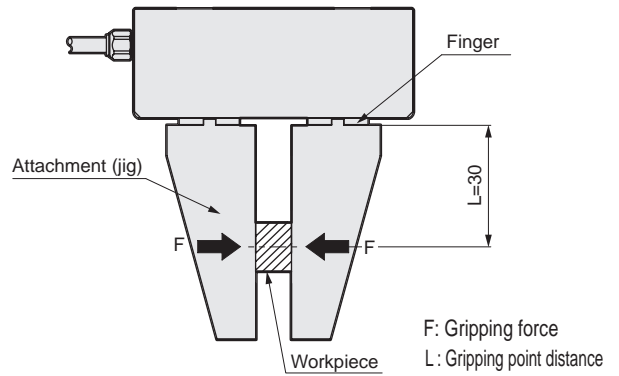
**FFLD** - **12** H **70** N C N 30- **LK** S **R 00**

<b>A</b> Gripping force	<b>B</b> Stroke	<b>C</b> Interface specification	<b>D</b> Relay cable
12   120N	70   140 mm (single side 70 mm)	LK   IO-Link	R00   Movable cable

## Specifications

## Gripping force and pressing rate

Motor	<input type="checkbox"/> 25L stepping motor
Encoder-type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke	mm 140 (70 per side)
Max. gripping force *1	N 120 (per side)
Open/close speed range	mm/s 1 to 30 (per side)
Gripping speed range *1	mm/s 1 to 5 (per side)
Repeatability *2	mm ±0.02
Positioning repeatability *3	mm ±0.05 (per side)
Lost motion	mm 0.4 or less (per side)
Static allowable moment	N·m MP=45, MY=45, MR=45
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply voltage	Communication/control 24 VDC ±10%
	Power 24 VDC ±10%
Current consumption	Communication/control A 0.2 or less
	Power A 2.8 or less
Motor section max. instantaneous current	A 4.0
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	kg 1.7



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.

\*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.

\*3 The variation of stopping position when positioning is repeatedly performed to the same point is shown.

FFLD

FFLD (High speed)

System Configuration

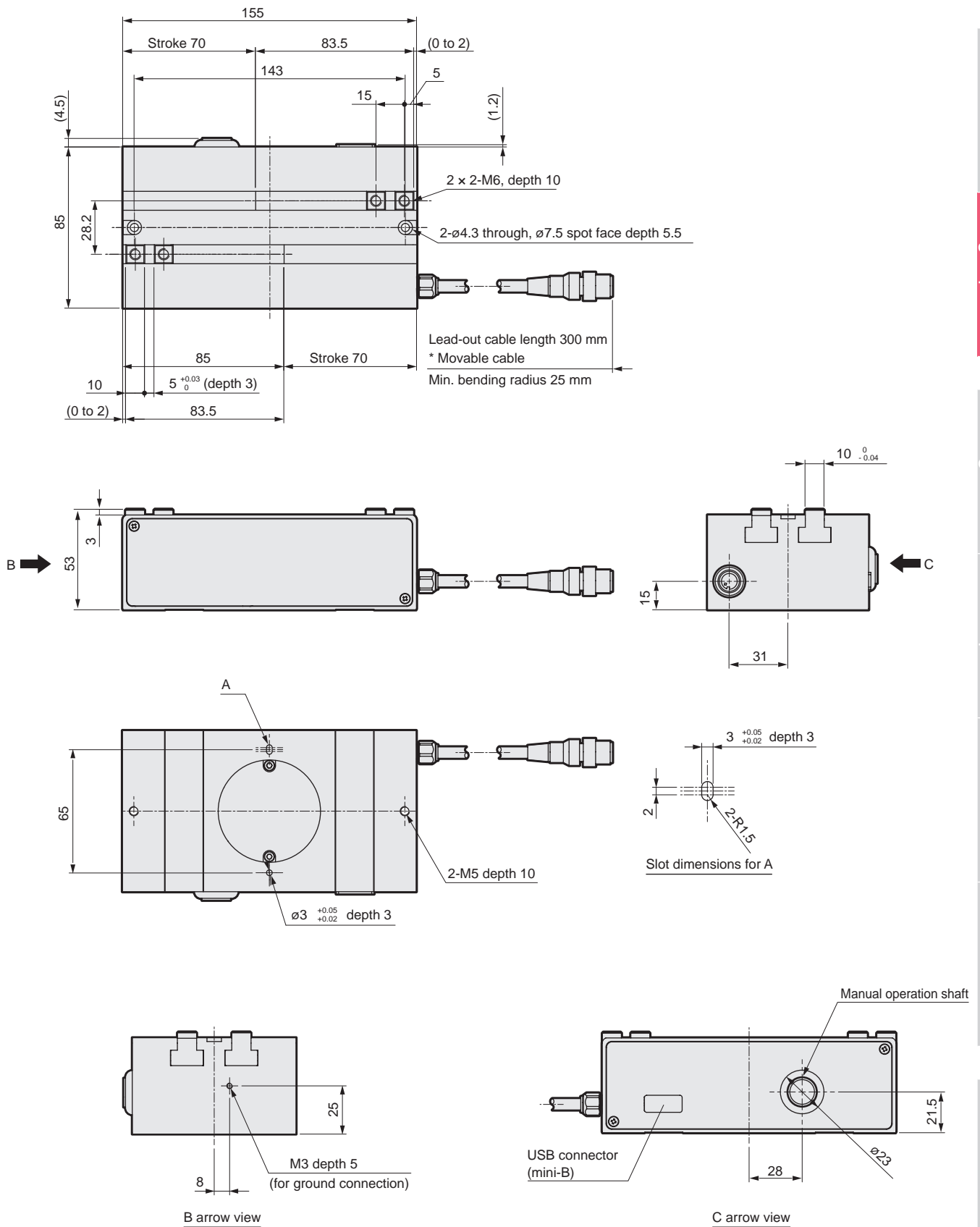
Field Network Description

Model Selection

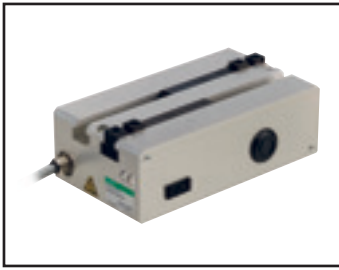
Technical Data

Safety Precautions

Dimensions



FFLD
FFLD (High speed)
System Configuration
Field Network Description
Model Selection
Technical Data
Safety Precautions



Electric actuator 2-finger Gripper high speed

# FFLD-30H

25L stepping motor



## How to order

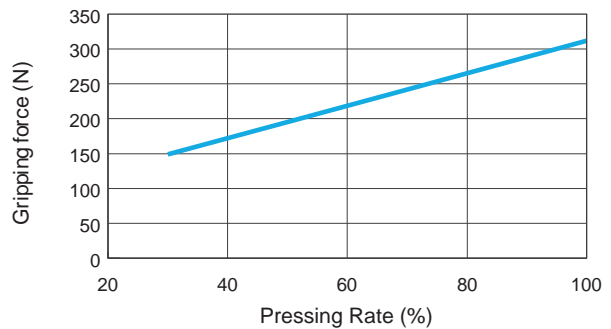
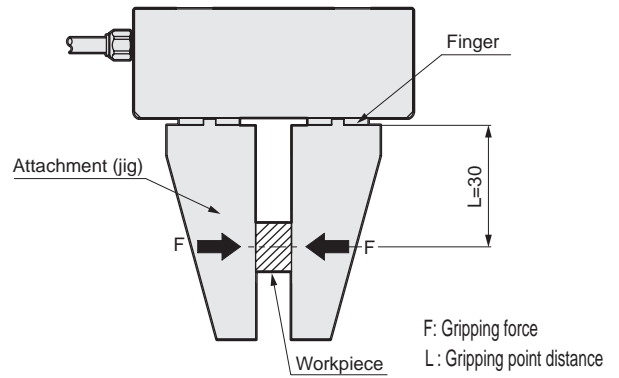
**FFLD** - **30** H **70** N C N 30- **LK** S **R 00**

<b>A</b> Gripping force	<b>C</b> Interface specification
<b>30</b> 300 N	<b>LK</b> IO-Link
<b>B</b> Stroke	<b>D</b> Relay cable
<b>70</b> 140 mm (single side 70 mm)	<b>R00</b> Movable cable

## Specifications

## Gripping force and pressing rate

Motor	<input type="checkbox"/> 25L stepping motor
Encoder-type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke mm	140 (70 per side)
Max. gripping force *1 N	300 (per side)
Open/close speed range mm/s	1 to 30 (per side)
Gripping speed range *1 mm/s	1 to 5 (per side)
Repeatability *2 mm	±0.02
Positioning repeatability *3 mm	±0.05 (per side)
Lost motion mm	0.4 or less (per side)
Static allowable moment N·m	MP=45, MY=45, MR=45
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply Communication/control voltage	24 VDC ±10%
Power	24 VDC ±10%
Current Communication/control consumption	0.2 or less
Power	2.8 or less
Motor section max. instantaneous current A	4.0
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50 °C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight kg	1.7



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.

\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.  
\*3 The variation of stopping position when positioning is repeatedly performed to the same point is shown.

FFLD

FFLD (High speed)

System Configuration

Field Network Description

Model Selection

Technical Data

Safety Precautions

Dimensions

FFLD  
FFLD (High speed)

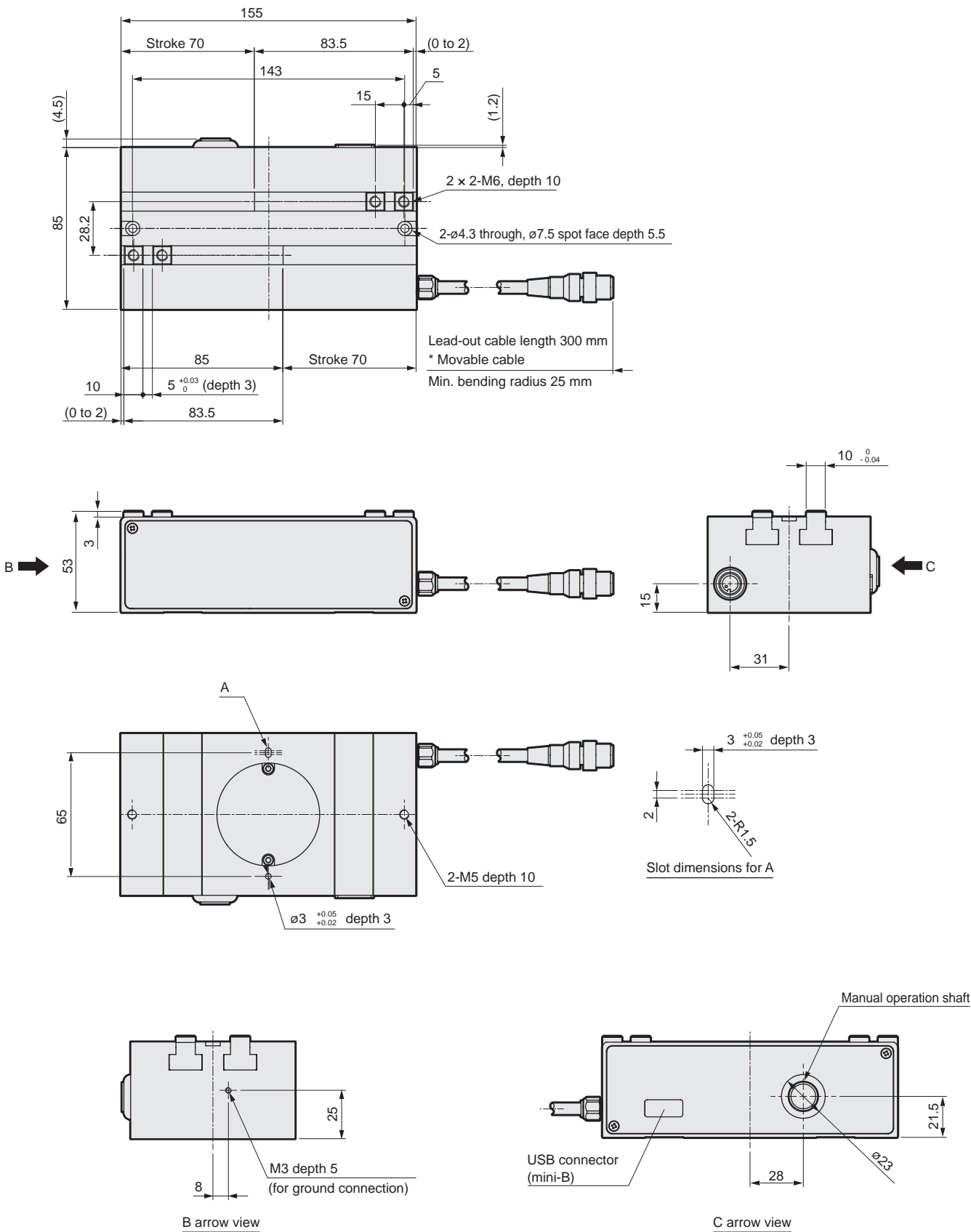
System Configuration

Field Network Description

Model Selection

Technical Data

Safety Precautions





Electric actuator 2-Finger Gripper high speed

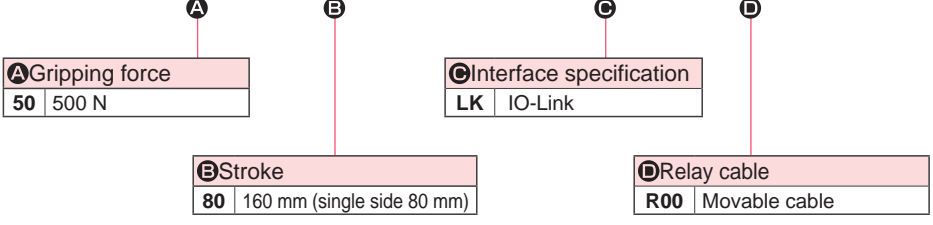
# FFLD-50H

35 Stepping motor



## How to order

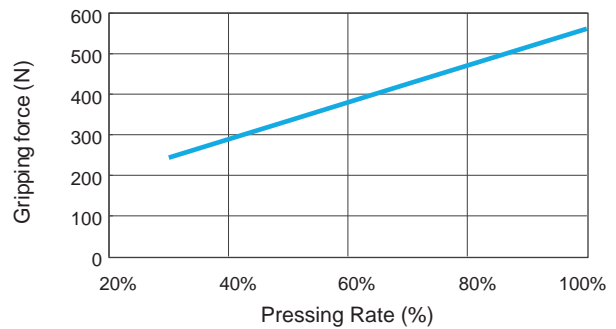
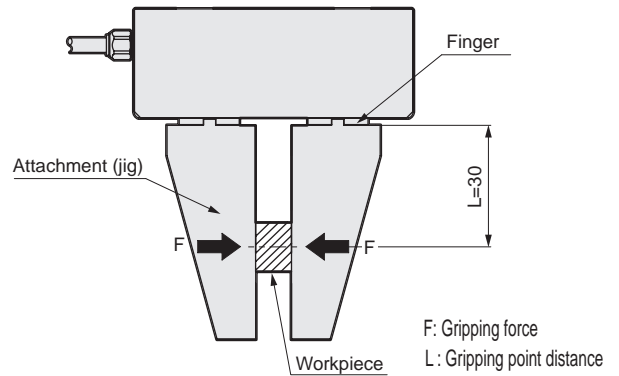
**FFLD** - **50** H **80** N C N 30- **LK** S **R00**



## Specifications

## Gripping force and pressing rate

Motor	<input type="checkbox"/> 35 Stepping motor
Encoder-type	Incremental encoder
Drive method	Rack and pinion, worm gear
Controller	Built in
Stroke	mm   160 (80 per side)
Max. gripping force *1	N   500 (per side)
Open/close speed range	mm/s   1 to 30 (per side)
Gripping speed range *1	mm/s   1 to 5 (per side)
Repeatability *2	mm   ±0.02
Positioning repeatability *3	mm   ±0.05 (per side)
Lost motion	mm   0.4 or less (per side)
Static allowable moment	N·m   MP=64, MY=55, MR=64
Settings tool	Setting software (S-Tools)
External interface	IO-Link
Power supply	Communication/control   24 VDC ±10%
Power	24 VDC ±10%
Current	Communication/control   0.2 or less
consumption	Power   A   2.8 or less
Motor section max. instantaneous current	A   4
Power capacity	Max. 100 W
Insulation resistance	10 MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)
Atmosphere	No corrosive gas, explosive gas, or dust
Degree of protection	IP20
Weight	kg   2.7



\* The correlation diagram of the gripping force and pressing rate shows a guideline. Individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.  
\* Gripping speed is for 5mm/s. (L=30)

\*1 Gripping is done with pressing operation.  
\*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.  
\*3 The variation of stopping position when positioning is repeatedly performed to the same point is shown.

FFLD

FFLD (High speed)

System Configuration

Field Network Description

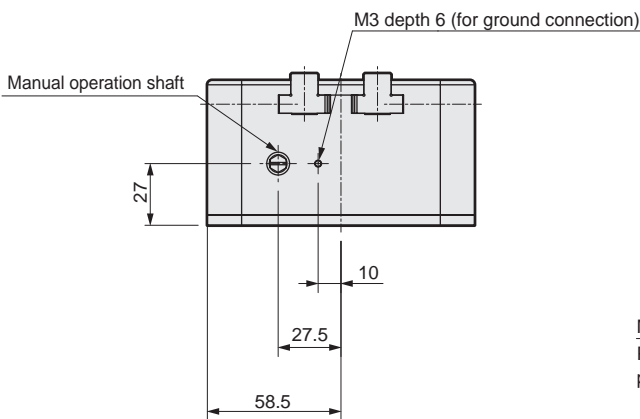
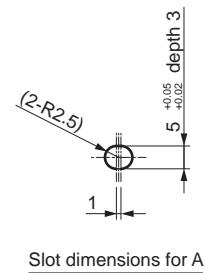
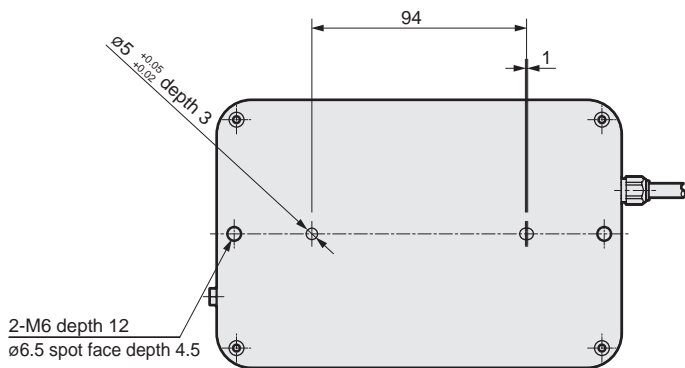
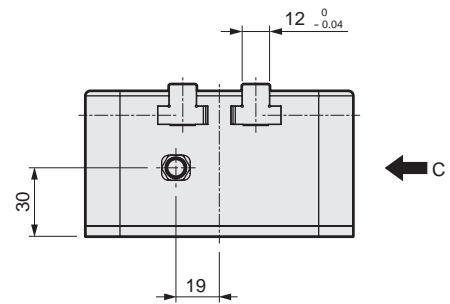
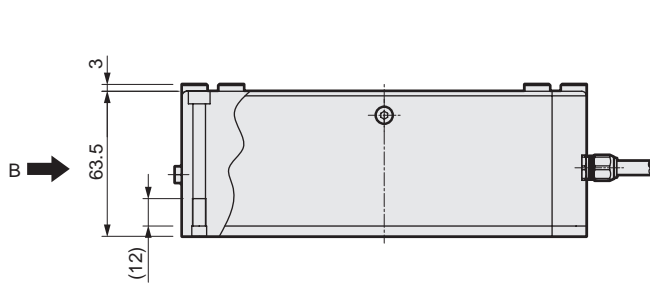
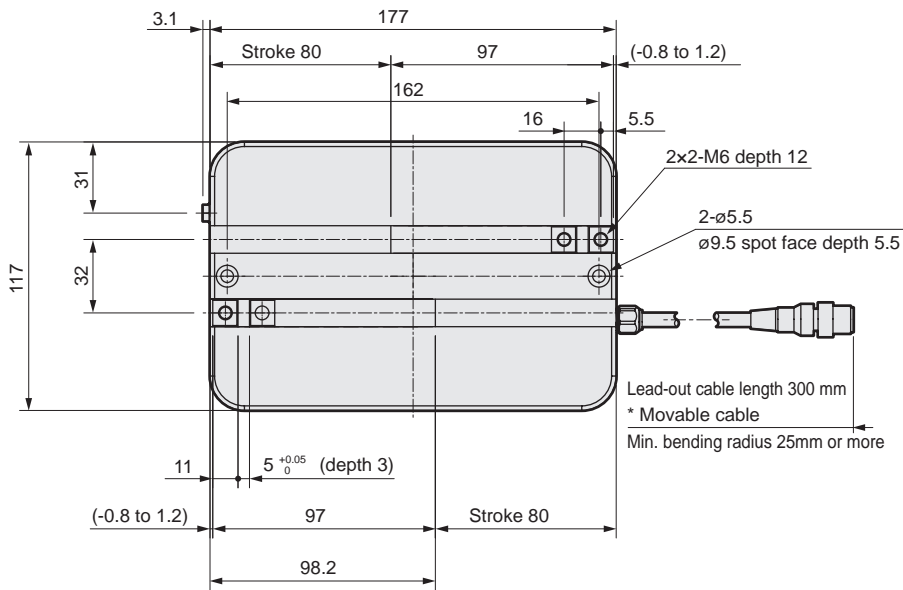
Model Selection

Technical Data

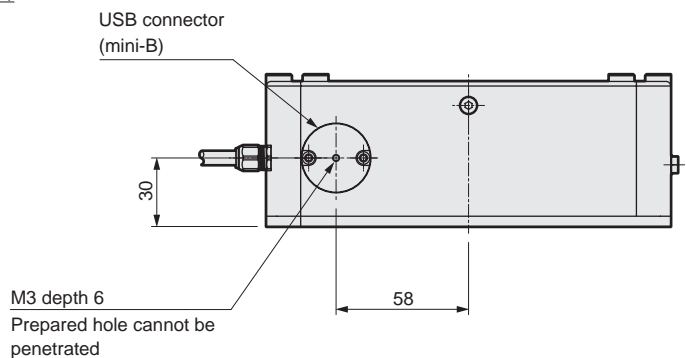
Safety Precautions



Dimensions



B arrow view



C arrow view

FFLD

FFLD (High speed)

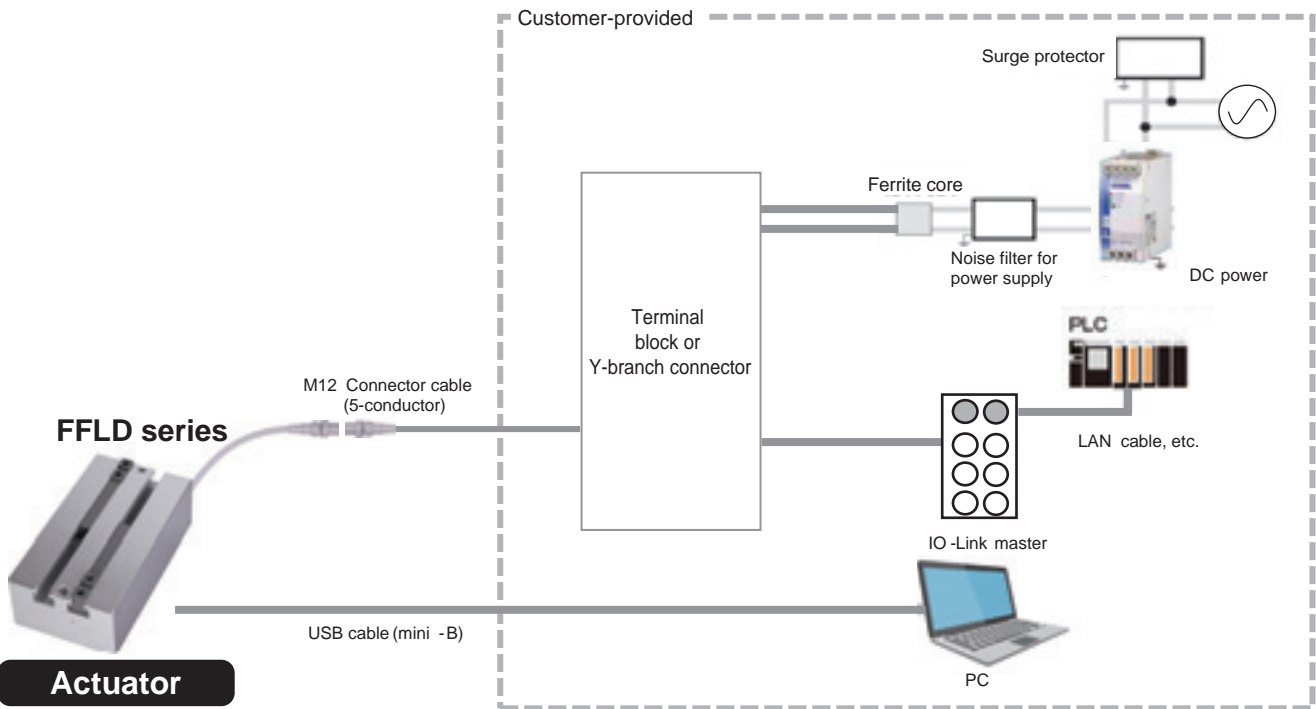
System Configuration

Field Network Description

Model Selection

Technical Data

Safety Precautions

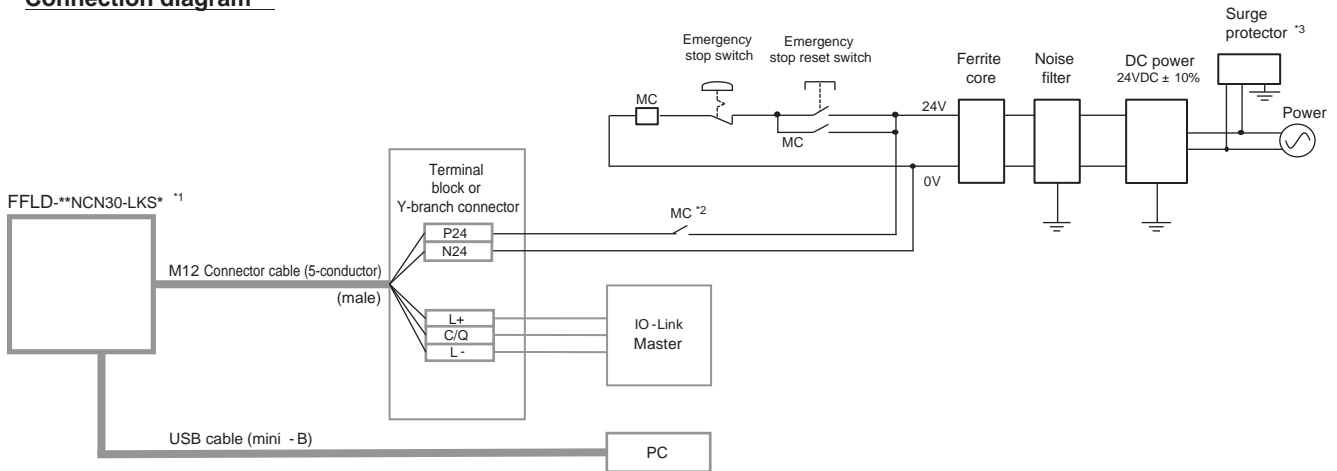


**Actuator**

**Controller**

PC setting software (free of charge)  
Download from the CKD website.  
(URL: <https://www.ckd.co.jp/en/>)

### Connection diagram



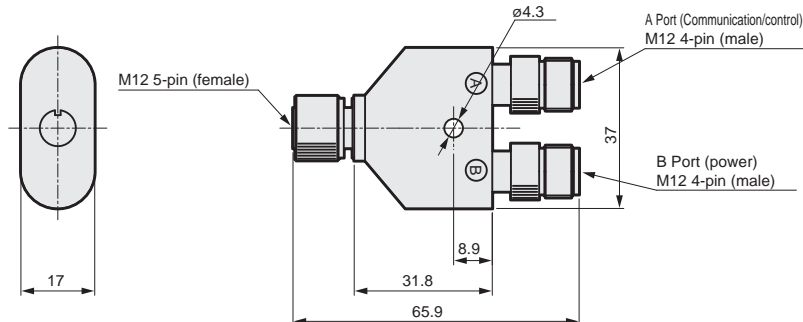
\*1 It is not a IO-Link ClassB-compliant product. It is possible to connect to the IO-Link Class B master, however, communication/control and motor power supplies are isolated, so other equipment may be affected if an error occurs. Refer to the instruction manual before wiring. Incorrect wiring could result in part damage.

\*2 If the motor drive source must be shut off for safety category compliance, etc., connect a contact such as an electromagnetic switch.

\*3 A surge protector is required to comply with the CE marking.

### ● Y branch connector

EA-YJOINT-1



Refer to the Instruction Manual for the wiring diagram.

### Field Network Description

Overview	
FDP	64 point operation is possible. Switching the direct travel selection signal enables full direct value operation with which the operating conditions can be set to a desired value from the PLC. Monitoring can also be confirmed. Refer to the table below for details.

	Direct value travel selection	Positioning point count	Direct value travel Item									Monitor Item		
			Target position	Speed	Pressing rate	Pressing speed	Position specification method	Operation mode	Stop method	Point zone +	Point Zone -	Position	Current	Speed
FDP	0	64 points	-	-	-	-	-	-	-	-	-	○	▲	▲
	1	No limit	○	○	○	○	○	○	○	○	○	○	▲	▲

\*For ▲, use ▲ to select only 1 item to be monitored    -: N/A, ○: Yes, ▲: Conditional

#### [Communication specifications]

Item	Specifications
Communication protocol version	V1.1
Transmission bit rate	COM2 (38.4kbps)
Port	Class A
Process data length (Input) PD (in) data length	5 byte
Process data length (Output) PD (out) data length	15 byte
Minimum cycle time	10ms
Monitor function	Position, current, speed

#### Cyclic data from master

PD (out)	Bit	Item
0	7	-
	6	Stop
	5	Alarm reset
	4	Servo ON
	3	Origin return start
	2	Travel start
	1	Direct value travel selection
	0	-
1	7	-
	6	-
	5	Point number confirmation bit 5
	4	Point number confirmation bit 4
	3	Point number confirmation bit 3
	2	Point number confirmation bit 2
	1	Point number confirmation bit 1
	0	Point number confirmation bit 0
2 to 3	7 to 0	Position (direct value travel)
4	7 to 0	Speed (direct value travel)
5	7 to 0	Pressing ratio (direct value travel)
6 to 7	7 to 0	Pressing distance (direct value travel)
8	7 to 0	Pressing speed (direct value travel)
9	7	Position specification method (direct value travel)
	6 to 5	Operation method (direct value travel)
	4 to 3	-
	2 to 0	Stop method (direct value travel)
10 to 11	7 to 0	Point zone(+) (direct value travel)
12 to 13	7 to 0	Point zone (-) (direct value travel)
14	7	INCH selection
	6	JOG/INCH(+)Travel start
	5	JOG/INCH (-) travel start
	4 to 3	-
	2 to 0	Monitor selection

#### Cyclic data from controller

PD (in)	Bit	Item
0	7	Operation preparation complete
	6	Warning
	5	Alarm
	4	Servo ON state
	3	Origin return complete
	2	Travel complete
	1	Moving
	0	Point zone
1	7	Direct value travel status
	6	-
	5	Point number confirmation bit 5
	4	Point number confirmation bit 4
	3	Point number confirmation bit 3
	2	Point number confirmation bit 2
	1	Point number confirmation bit 1
	0	Point number confirmation bit 0
2 to 3	7 to 0	Current position
4	7 to 0	Selection monitor

FFLD  
 FFLD (High speed)  
 System Configuration  
 Field Network Description  
 Model Selection  
 Technical Data  
 Safety Precautions