

Directional Control Driver for Electric Cylinder

Series **LC3F2**



LC3F212-5A3□

LC3F212-5A5□

Able to control the stroke with only ON/OFF signals

Directional control driver like a solenoid valve

Able to set thrust arbitrarily.

Thrust can be adjusted by adjustment trimmer

Able to control with only 3 different types of input signals

① Directional instruction ② Thrust selection ③ Output ON/OFF

Can be operated manually

Maintenance performance for wiring check has been improved

Product Specifications

Model	LC3F212-5A3□	LC3F212-5A5□
Power supply voltage	24 VDC ± 10%	
Front side label color	Max. 1.3 A	Max. 2.3 A
Input signal	Gray	
Selection of thrust	Blue	
Operating temperature range	Photocoupler input 24 VDC ±10% Max. 8 mA/point	
Operating humidity range	100% or set value (setting range 10 to 70% F.S.)	
Environment	+5 to 40°C	
Display LED	35 to 85% Rh (with no condensation)	
Weight	Indoor (Direct sunlight should be avoided.) No corrosive gas, inflammable gas, oil mist or dust particle	
	POWER, A-PHASE, OFF, SET	
	145 g	

Directional Control Driver for Electric Cylinder

Series LC3F2



How to Order

LC3 F2 12 5 A3 B

Series Power supply Applicable motor Housing set (Connector set)

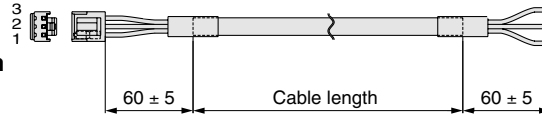
F2 Small sized DC motor driver	5 24 VDC	A3 DC motor (cylinder size 3)	B Nothing included.
		A5 DC motor (cylinder size 5)	

Option

● Cable for power supply terminal

LC3F2 1 C1-02-1

Cable type	Cable length
C1 Cable for CN1 power supply terminal	01 1 m 02 2 m



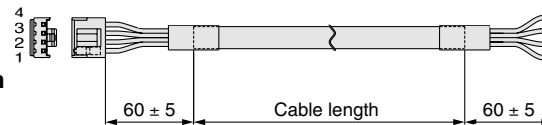
CN1 Power Supply Terminal Table

Terminal	Function	Pin number	Optional cable color
FG	Frame ground	1	Yellow/Green
DC (+)	Driver power supply (+24 V)	2	Brown
DC (-)	Driver power supply (0 V)	3	Blue

● Cable for control terminal

LC3F2 1 C2-02-1

Cable type	Cable length
C2 Cable for CN2 control terminal	01 1 m 02 2 m



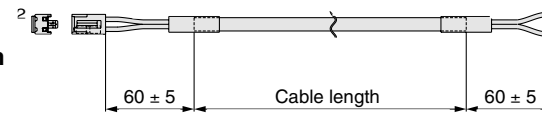
CN2 Control Terminal Table

Terminal	Function	Pin number	Optional cable color
COM	Common terminal	1	White
ON	Output ON command input	ON: Motor output	Red
		OFF: No motor output	
SET	Adjusted thrust command input	ON: Adjusted thrust	Yellow
		OFF: 100% thrust (Max. thrust)	
A-PHASE	Traveling direction command input	ON: A-PHASE (Retracted side)	Orange
		OFF: B-PHASE (Extended side)	

● Cable for motor output terminal

LC3F2 1 C3-02-1

Cable type	Cable length
C3 Cable for CN3 motor output terminal	02 2 m 05 5 m



CN3 Motor Output Terminal Table

Terminal	Function	Pin number	Optional cable color
OUTA	Motor output A (Blue)	1	Blue
OUTB	Motor output B (Red)	2	Red

● Housing set (Connector set)

LC3F2 1-C0	Housing for power supply terminal (Connector)	1 pc.	VHR-3N: J.S.T. Mfg Co., Ltd.)
	Housing for control terminal (Connector)	1 pc.	VHR-4N: J.S.T. Mfg Co., Ltd.)
	Housing for motor output terminal (Connector)	1 pc.	VHR-2N: J.S.T. Mfg Co., Ltd.)
	Contact (Connector pin)	12 pcs.	BVH-21T-P1.1: J.S.T. Mfg Co., Ltd.)

⚠ Caution

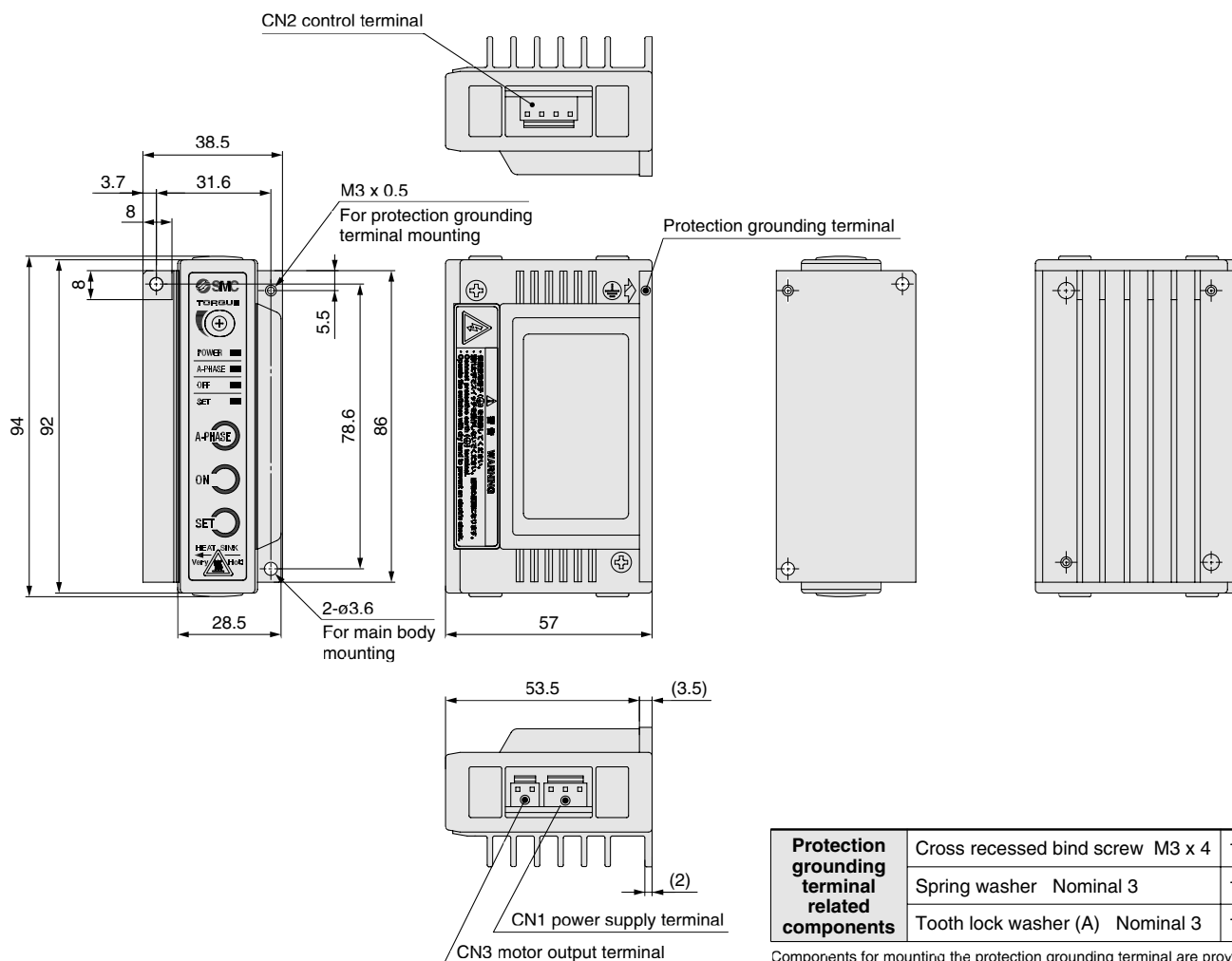
- **Do not apply repetitive bending or pulling stress to the cable.**
Wiring with repetitive bending or pulling stress to the cable will likely cause the cable to break.
- **In the event of crimping the contact (connector pin) and wire use the specific tools as well as the recommended cable**
Crimping tool: YC-160R (J.S.T. Mfg Co., Ltd.)
Pulling tool: EJ-NV (J.S.T. Mfg Co., Ltd.)
Recommended cable connection (common for individual cable) AWG2² (0.5 mm²) Insulated wire O.D. 1.7 to 3.0 mm with shield
Heat resistance is more than 80°C.
Maximum cable length (

CN1 cable for power supply terminal	2 m
CN2 cable for control terminal	2 m
CN3 cable for motor output terminal	5 m
- **Shield is attached with an optional cable for the LC3F2 series.**
When grounding a shield, remove the sheath and use a metal U-crip or P-crip.

Applicable Cylinder Table

Cylinder part no.	Applicable directional control driver
L□Z□3□-□□□A3□□-□□□□	LC3F212-5A3□
L□Z□5□-□□□A5□□-□□□□	LC3F212-5A5□

Dimensions

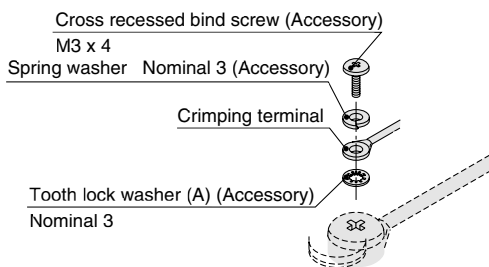
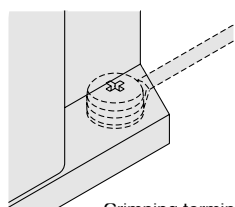


How to Mount

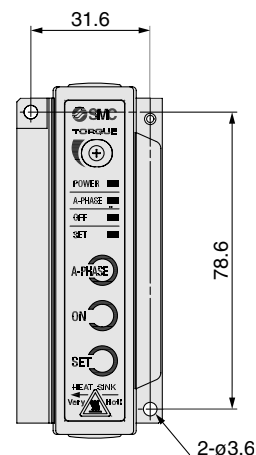
Mount the directional control driver vertically against the wall, using two mounting screw holes, so the front side (on which its adjustment trimmer and manual switch are located) is facing to an operator

Applicable mounting screw: M3 (2 pcs.) [to be supplied by customer]

* How to mount a protection grounding terminal

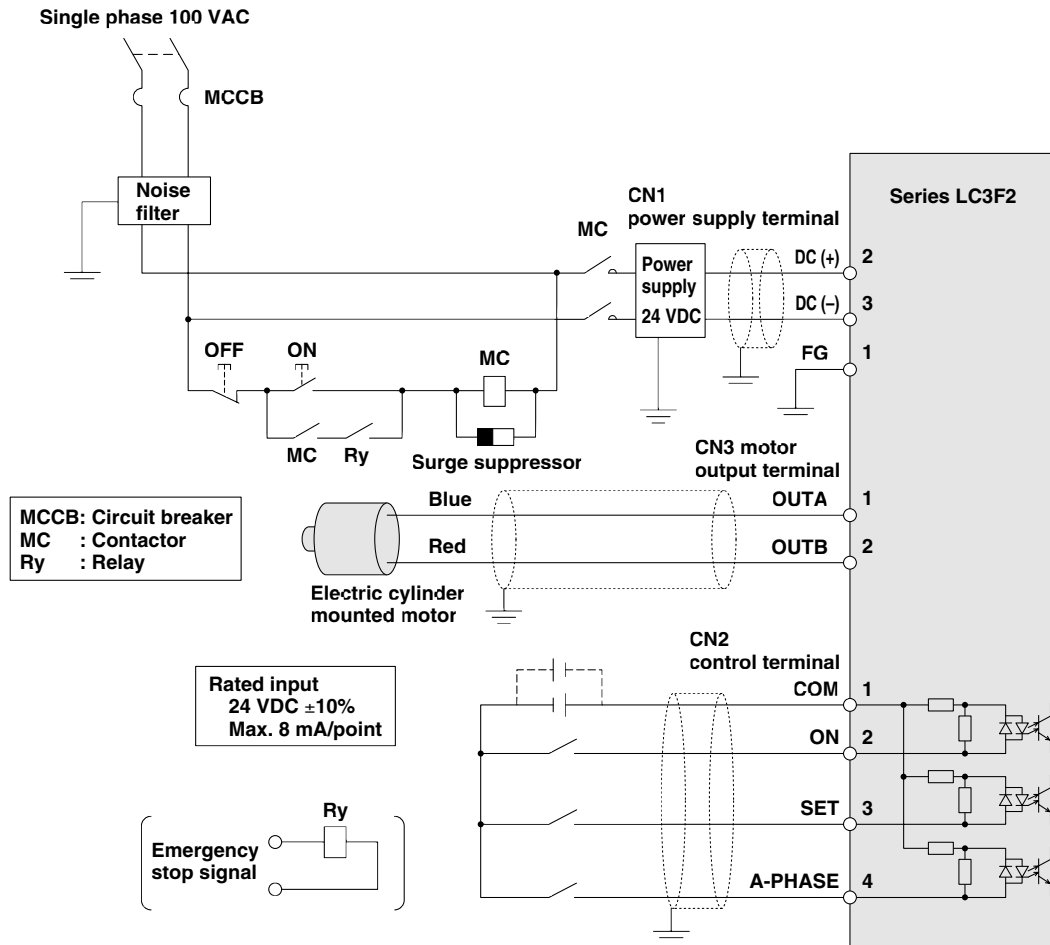


Crimping terminal and grounding cable are supplied by customer



Series LC3F2

Wiring Example

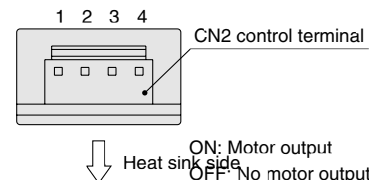
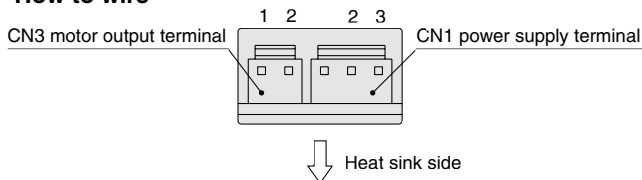


For System Chart, refer to Features 1

⚠ Caution

There is no emergency stop function or power supply switch in the directional control driver. Please be sure to provide an emergency stop and power supply insulation (insulator) device as a total machine equipment, referencing the above wiring examples. Also, please be sure to turn off the power supply for the whole equipment prior to wiring the directional control driver.

How to wire



CN1 Power Supply Terminal

Pin no.	Terminal	Function
1	FG	Frame ground
2	DC (+)	Driver power supply (+24 V)
3	DC (-)	Driver power supply (0 V)

Housing: VHR-3N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1 (J.S.T. Mfg Co., Ltd.)

CN3 Motor Output Terminal

Pin no.	Terminal	Function
1	OUTA	Motor output A (Blue wire)
2	OUTB	Motor output B (Red wire)

Housing: VHR-2N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1 (J.S.T. Mfg Co., Ltd.)

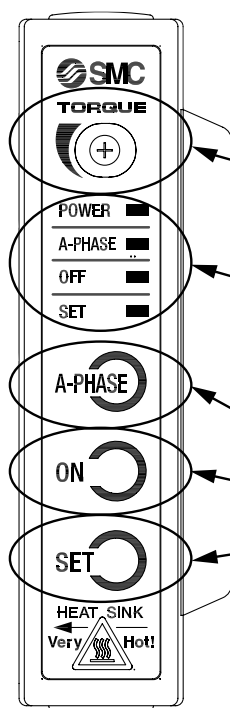
CN2 Control Terminal

Pin no.	Terminal	Function
1	COM	Common terminal
2	ON	Output ON command input
3	SET	Adjusted thrust command input
4	A-PHASE	Traveling direction command input

Housing: VHR-4N (J.S.T. Mfg Co., Ltd.)
Contact: BVH-21T-P1.1 (J.S.T. Mfg Co., Ltd.)

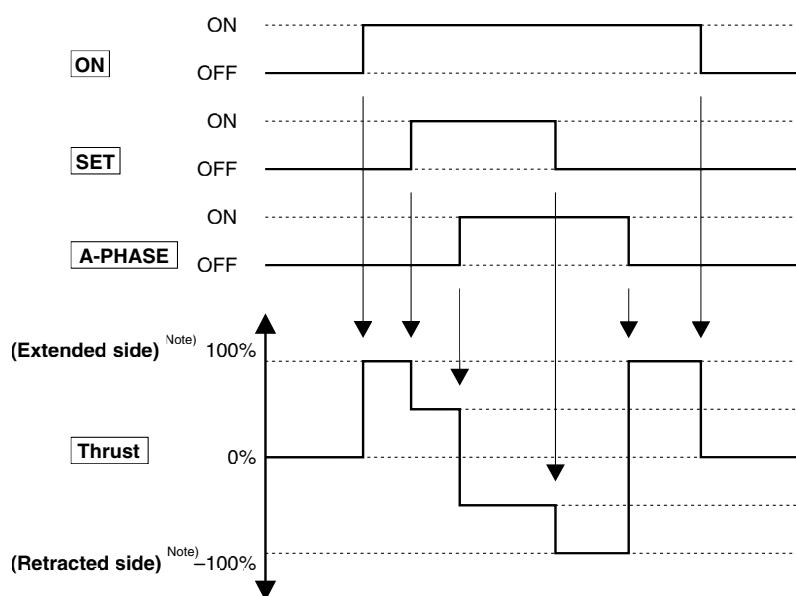
Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11.

Description of Each Part and its Function



Category	Description	Details
Trimmer	Thrust adjustment trimmer	Thrust changes through adjustment.
Indicator light	POWER	Light illuminates when power is supplied.
	A-PHASE	Light illuminates by A-PHASE command. (Travelling to the retracted side when illuminated)
	OFF	Light illuminates when turning OFF. (No motor output is generated when illuminated.)
	SET	Light illuminates by SET command. (Thrust set by the thrust adjustment trimmer, when illuminated.)
Manual switch	A-PHASE	A-PHASE command while pressing (Travelling to the retracted side)
	ON	ON command while pressing (Motor output will be generated.)
	SET	SET command while pressing (Thrust set by the thrust adjustment trimmer will be outputted.)

Timing Chart



Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11

CN2 Control Terminal

Pin no.	Terminal	Function	
1	COM	Common terminal	
2	ON	Output ON command input	ON: Motor output OFF: No motor output
3	SET	Adjusted thrust command input	ON: Adjusted thrust OFF: 100% thrust (Max. thrust)
4	A-PHASE	Traveling direction command input	ON: A-PHASE (Retracted side) ^{Note)} OFF: B-PHASE (Extended side) ^{Note)}

Housing: VHR-4N (J.S.T. Mfg Co., Ltd.)

Contact: BVH-21T-P1.1 (J.S.T. Mfg Co., Ltd.)

Note) For the travelling direction (retracted, extended side), refer to the dimensions in page 4, 6, 10 and 11.