

◆ Product Type

SVR-K111 & SVR-K112

1-Axis EtherCAT close-loop driver

◆ Specifications

Size: (L140 x W74 x H31 mm)

Serial interface: Fast Ethernet, Full-Duplex

Distributed clock: 0.5 / 1 / 2 / 4ms

Cable type: CAT5 UTP / STP Ethernet Cable

Surge protection: 10KV

Transmission speed: 100Mbps

Communication type: DC

Support mode: CSP, PP, Home

Input voltage: 24VDC / 48VDC* (Only hardware version 4.0 or greater can support 48 VDC)

Drive model: 2-phase, bi-polar current driving system

Current consumption: 3.5W typical no load

Ambient temperature: In use: 0 ~ 50°C

In storage: -20 ~ 70°C

Humidity: In use: 35 ~ 85% (Non-condensing)

In storage: 10 ~ 90% (Non-condensing)

Resolution: 500 ~ 50000 pulse/revolution (Configured by software)

Incremental encoder input: ±EA, ±EB

Encoder index signal input: ±EZ

I/O input signal: PEL, MEL, ORG, and EMG

Position control: Incremental / Absolute mode

Data range: 32bits

Homing mode: ORG, EZ, Limit & total 31 types

Vib. resist: 0.5G

LED indicator: PWR, RUN, EPR, PEL, MEL, ORG, ALM, EMG

Current setting: K111 – 2.8A / K112 – 4.2A (Configured by software)

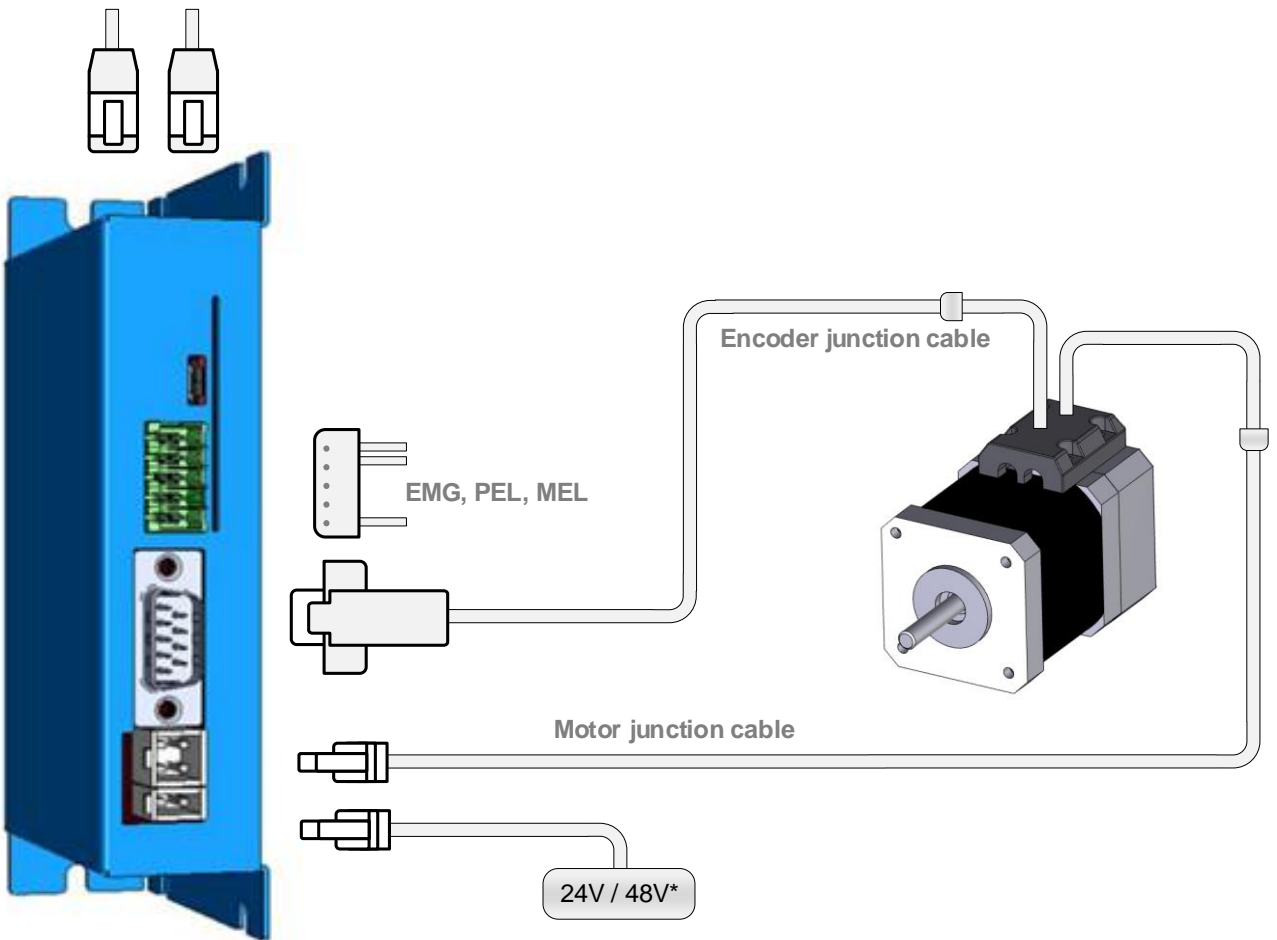
◆ Ordering Information

SVR-K111 – 1-Axis EtherCAT 2.8A Close-loop Driver

SVR-K112 – 1-Axis EtherCAT 4.2A Close-loop Driver

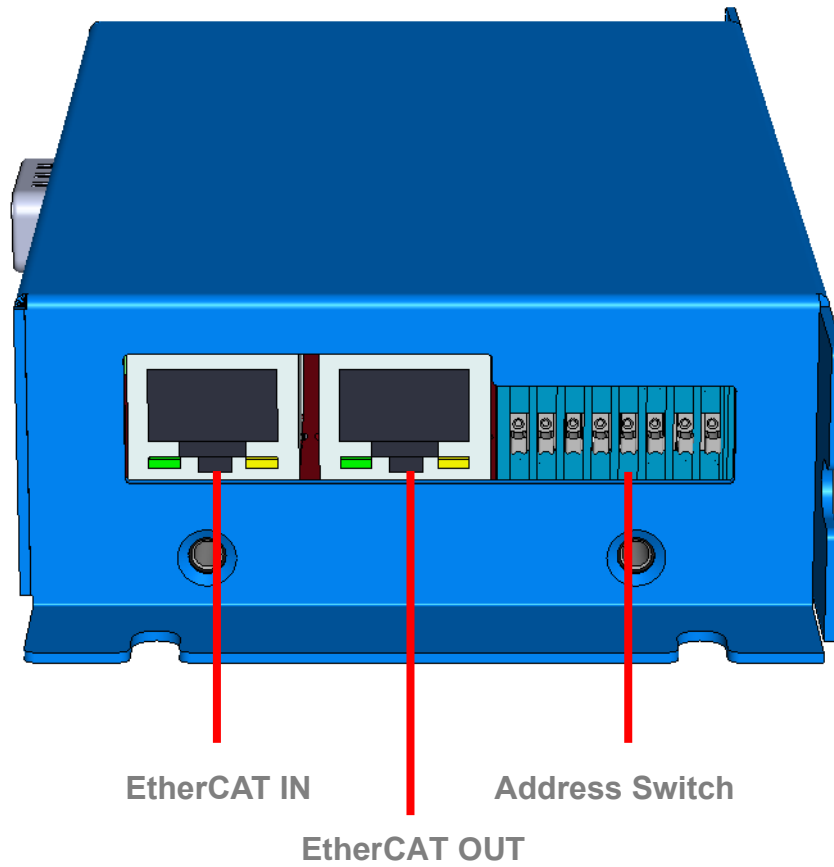
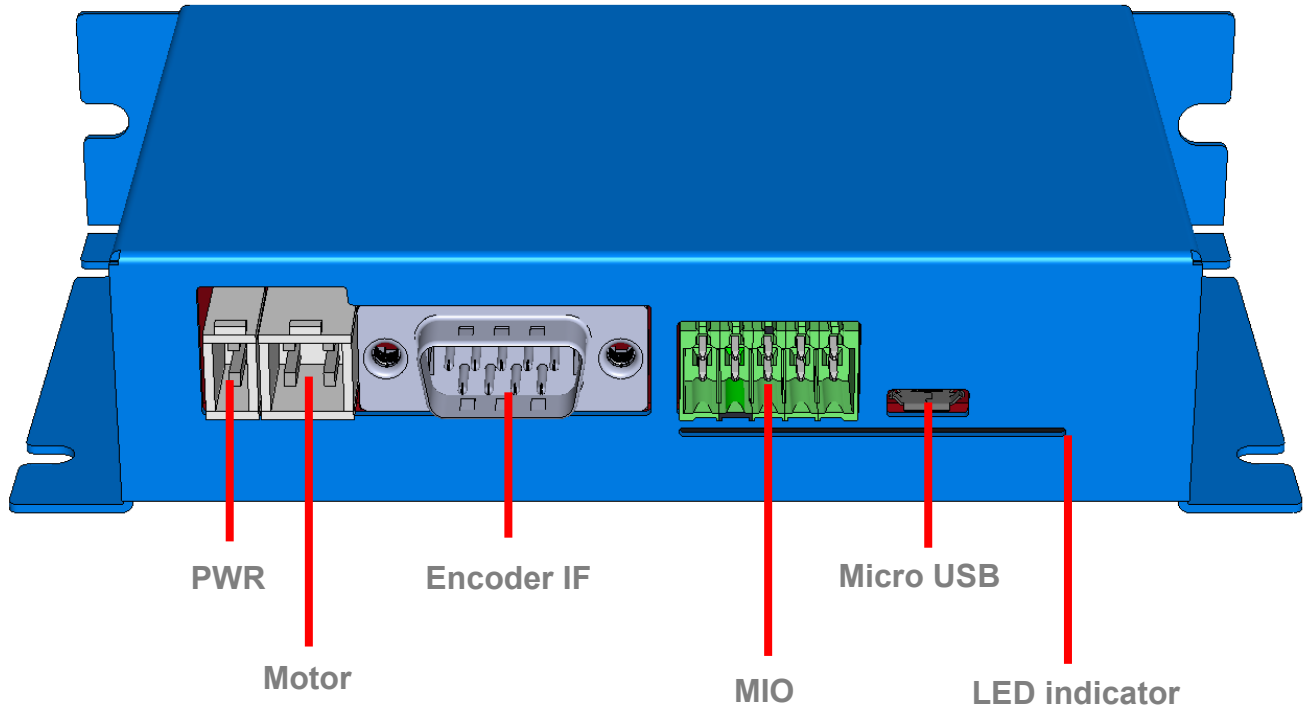
◆ System Configuration

EtherCAT OUT EtherCAT IN



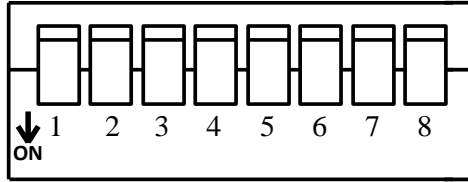
*Only hardware version 4.0 or greater can support 48 VDC

◆ Connection



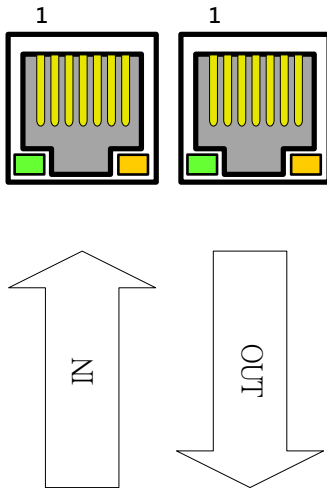
◆ **DIP Switch Description**

The DIP switch is for address setting.



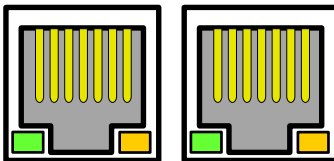
Number	Name	Description
1	A0	Node IP settings The node number = $32 * A5 + 16 * A4 + 8 * A3 + 4 * A2 + 2 * A1 + A0$. Default values are all off.
2	A1	
3	A2	
4	A3	
5	A4	
6	A5	
7	A6	
8	A7	

◆ Communication IN and OUT



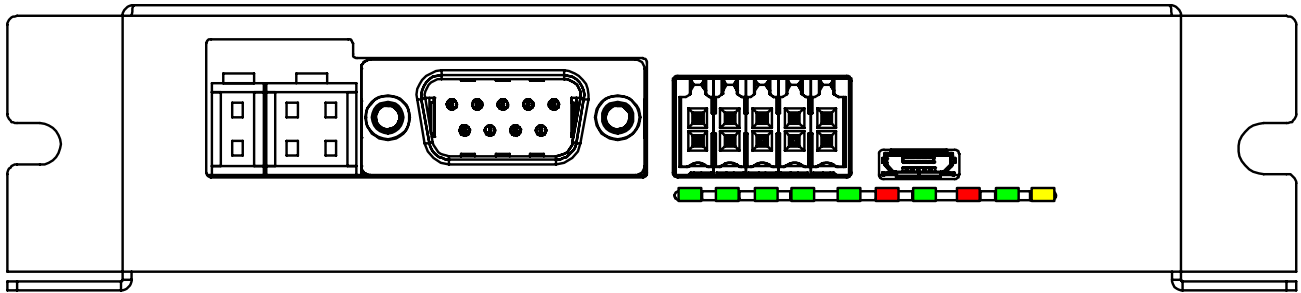
No.	Description
1	TX+
2	TX-
3	RX+
4	-
5	-
6	RX-
7	-
8	-

◆ Status LED



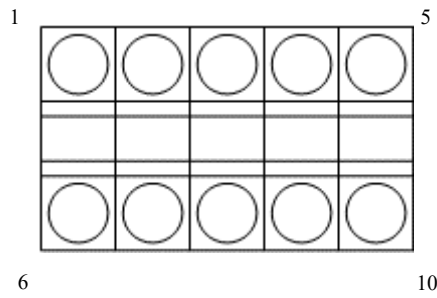
LED	Description
Left (Green)	Speed indicator: Green on – Operating as a 100/1000-Mbps connection. Off – Operating as a 10-Mbps connection.
Right (Orange)	Link/Activity indicator: Blinking – There is activity on this port. Off – No link is established.

◆ LED Description



LED	Color	Description	Function
PWR	Yellow	Power On	Lights on when power is on.
RUN	Green	Slow Down On	Lights on when EtherCAT runs.
ERR	Red	Emergency On	Lights on when EtherCAT error occurs.
SVO	Green	Servo On	Lights on when Servo on.
ALM	Red	Alarm On	Lights on when Alarm on.
INP	Green	In-Position On	Lights on when INP on.
EMG	Green	Emergency On	Lights on when connected to GND.
ORG	Green	ORG On	Lights on when connected to GND.
EL-	Green	Negative limit	Lights on when connected to GND.
EL+	Green	Positive limit	Lights on when connected to GND.

◆ Mechanical Input (MIO)



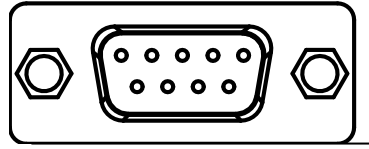
■ PIN Definition

Pin	Name	Function	I/O
1	EL+	Positive limit	I
2	ORG	Home position	I
3	DI0	Digital Input 0	I
4	CMP	Comparator output	O
5	GND	DC 24V Input Ground	I
6	EL-	Negative limit	I
7	EMG	Emergency Stop	I
8	DI1	Digital Input 1	I
9	24V	DC 24V Input	I
10	GND	DC 24V Input Ground	I

Note EMG signal needs to be inactive to drive the motor. Otherwise the driver will be in the emergent stop state.

Note MIO needs DC24V power input to drive isolated interface.

◆ Encoder Input

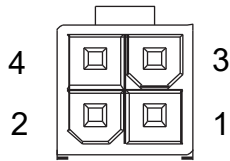


Pin	Name	Function	I/O	Pin	Name	Function	I/O
1	EA+	Encoder phase A input (+)	I	2	EA-	Encoder phase A input (-)	I
3	EB+	Encoder phase B input (+)	I	4	EB-	Encoder phase B input (-)	I
5	EZ+	Encoder phase Z input (+)	I	6	EZ-	Encoder phase Z input (-)	I
7	+5V	+5V DC Output	O	8	GND	Ground	O
9	FG	Frame ground	-				

Note The current of 5V DC output is 150mA.

◆ **Motor Connector**

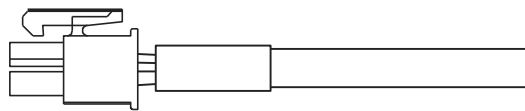
■ PIN Definition



Pin No.	Function
1	Phase A
2	Phase B
3	Phase /A
4	Phase /B

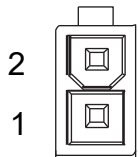
■ Connector for Cable

Manufacturer: MOLEX
 Housing: 5557-04R
 Terminal: 5556T2



◆ **Power Input**

■ PIN Definition

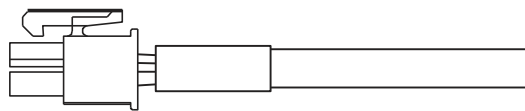


*Only hardware version 4.0 or greater can support 48 VDC

Pin No.	Function
1	Power input: 24 / 48 VDC*
2	Power input: GND

■ Connector for Cable

Manufacturer: MOLEX
 Housing: 5557-02R
 Terminal: 5556T2



◆ Interface

■ EMG (Emergency Stop / Digital Input Signal)

EMG is Normal-Close type signals from external switch.

■ PEL and MEL (End Limit / Digital Input Signal)

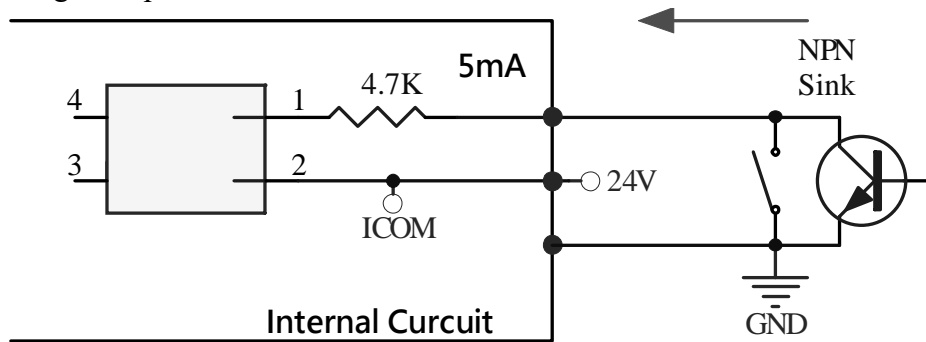
There are two end-limit signals called PEL and MEL for each axis. Usually they are Normal-Close type signals from external sensors. PEL indicates the limit of motion in the plus direction and MEL indicates the limit of motion in the minus direction.

■ ORG (Origin / Digital Input Signal)

The origin signal is necessary when the position feedback is incremental type or without any feedback encoders. They are used to indicate the origin of the system.

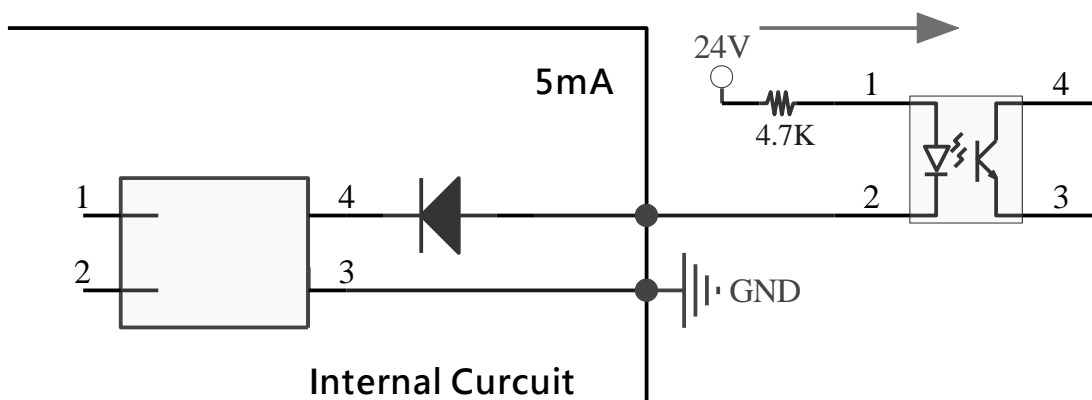
■ Digital Input Signal

General-purpose digital input.



■ Digital Output Signal

General-purpose digital output.



Encoder Input

