Product Type

207-C344F

EtherCAT 4-Channel Encoder module, 8-Channel digital input and 4-Channel Compare Trigger Output

Specifications

EtherCAT	
Data transfer medium	Ethernet 100BASE-TX, CAT5 Shielded Ethernet cable
Communication type	DC
Distributed Clock	0.5 / 1 / 2 / 4 ms
ID switch	8 bits

Encoder input	
Encoder Ch.	2-Ch. EA/EB/EZ independent 32-bit counter 2-Ch. EA/EB independent 32-bit counter
Encoder input frequency	Max. 4MHz, for CW/CCW and PULSE/DIR Max. 6.5MHz for 4xAB phase mode
Encoder mode	1xAB, 2xAB, 4xAB, CW/CCW, PULSE/DIR

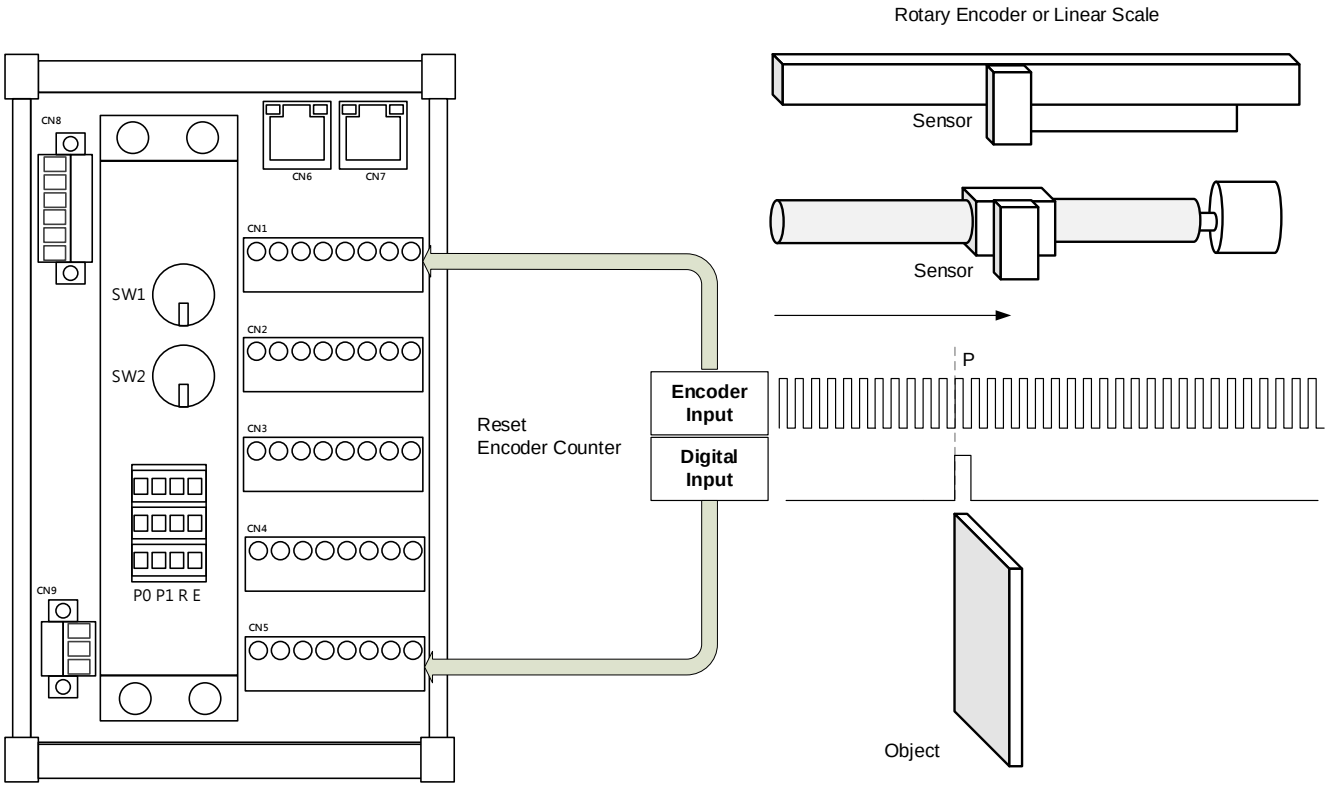
Digital I/O	
Isolated digital input	IN x 8, NPN type
	IN 0~3 as Latch function Max. 10KHz, 256pts for each channel
	IN 0~3 as Encoder reset function
	Digital filter 1~65535us

Compare Trigger Output	
Trigger Output	CMP x 4
	Auto Trigger, Max. trigger frequency 1MHz
	Table Trigger, 4096pts allocatable for all channels
	Toggle Trigger, 4096pts allocatable for all channels
Trigger Pulse Width	Programmable, 0.1 ~ 6553.5 or 1 ~ 65535 micro-second

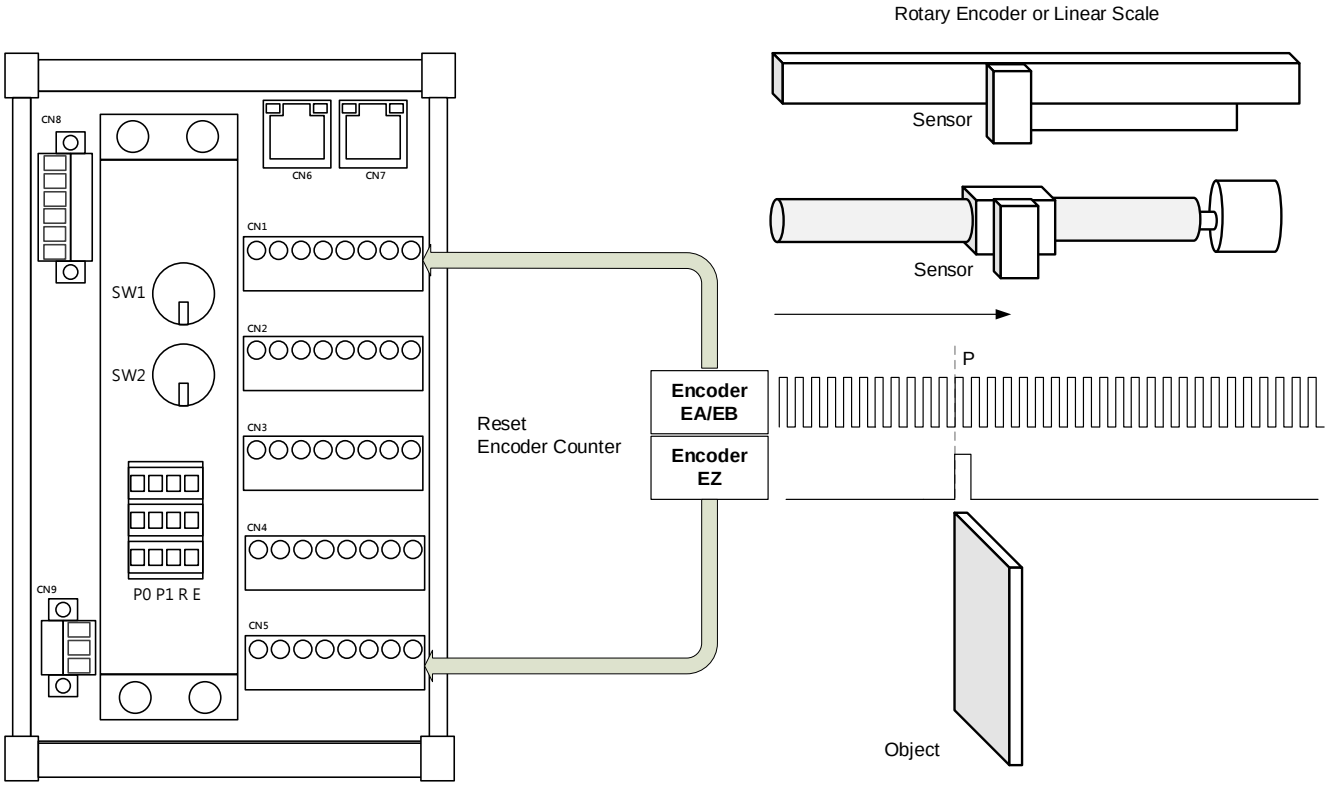
General	
Power input	24VDC±10%
Power consumption	3W typical
Working temperature	0°C~60°C (32°F~140°F) ambient temperature with air flow
Storage temperature	-20°C~80°C (-4°F~176°F)
Humidity	85% (non-condensing @60°C)
Size	L122 x W83 x H104 mm

■ Application

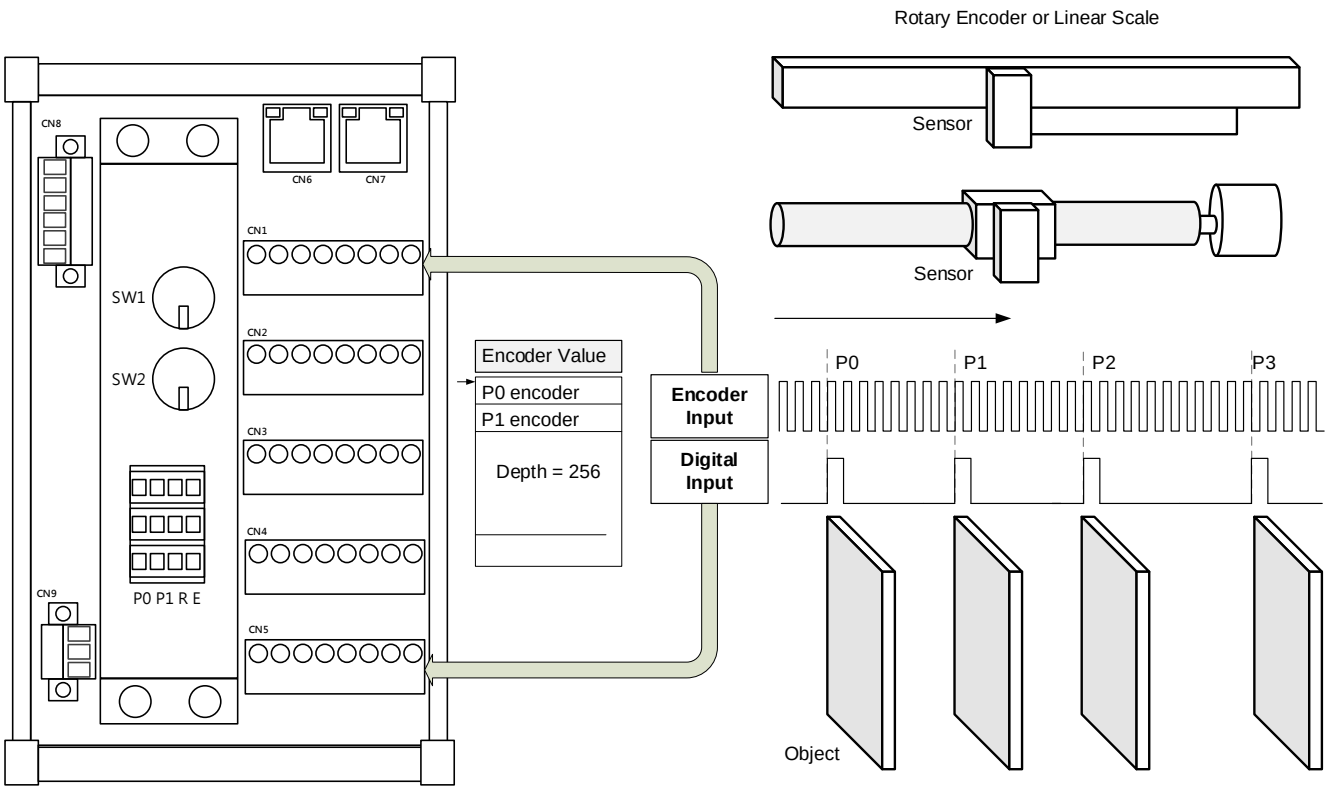
Encoder counter value reset by Digital input



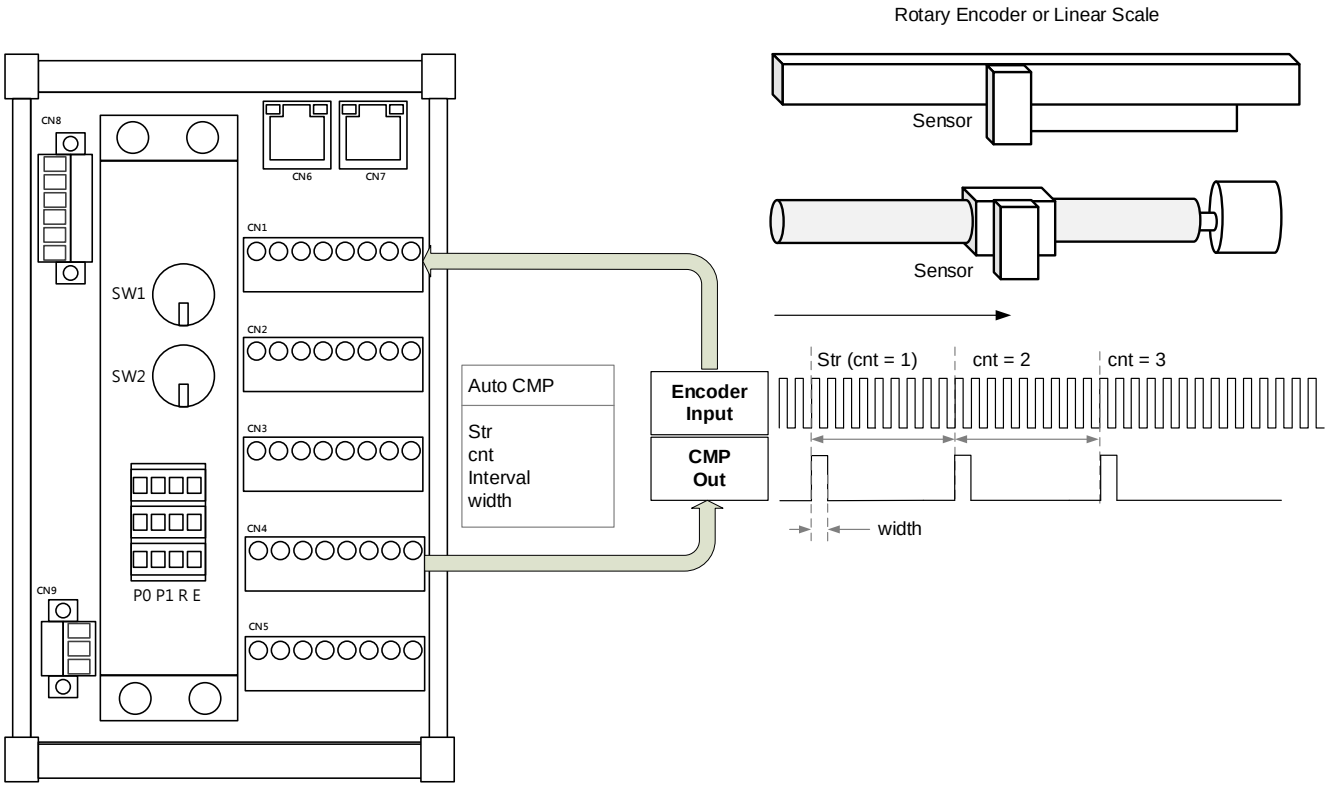
Encoder counter value reset by EZ



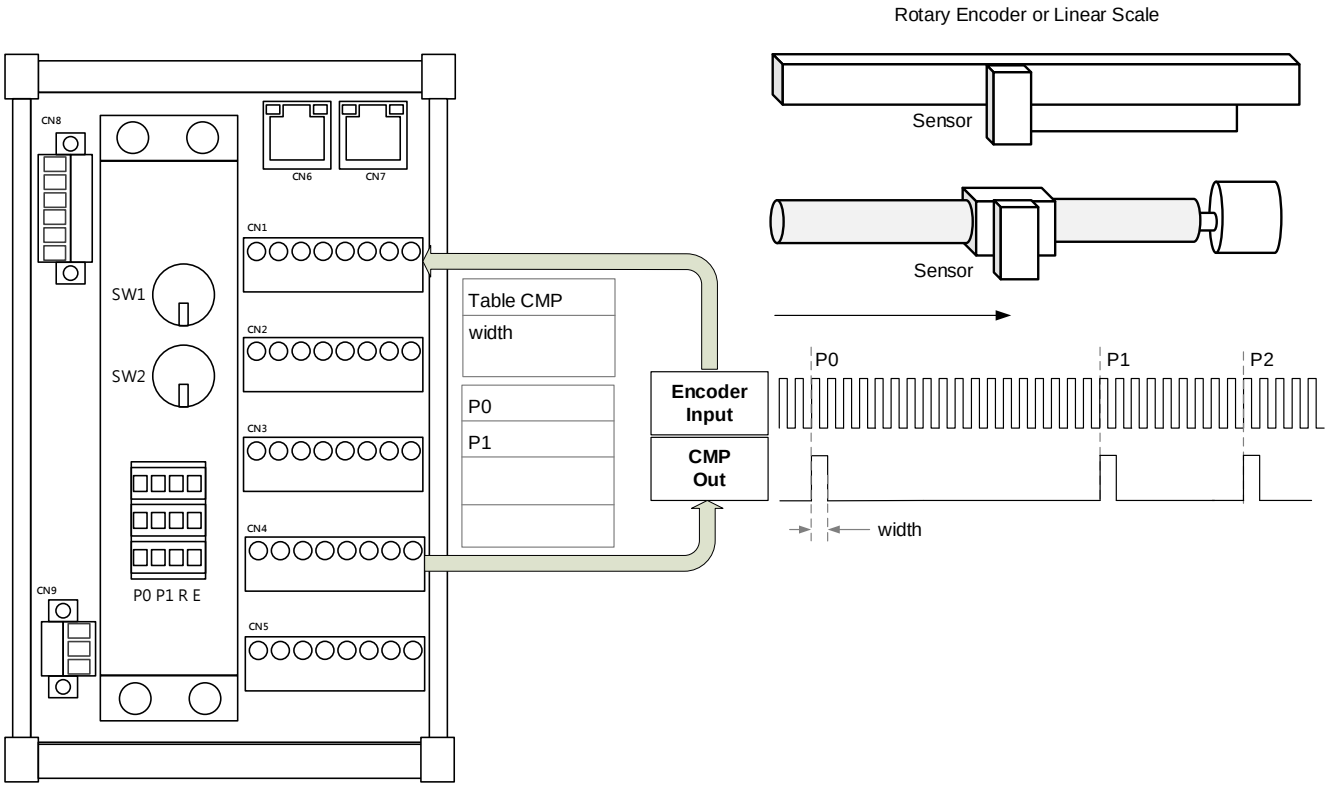
Encoder counter value latch by Digital Input



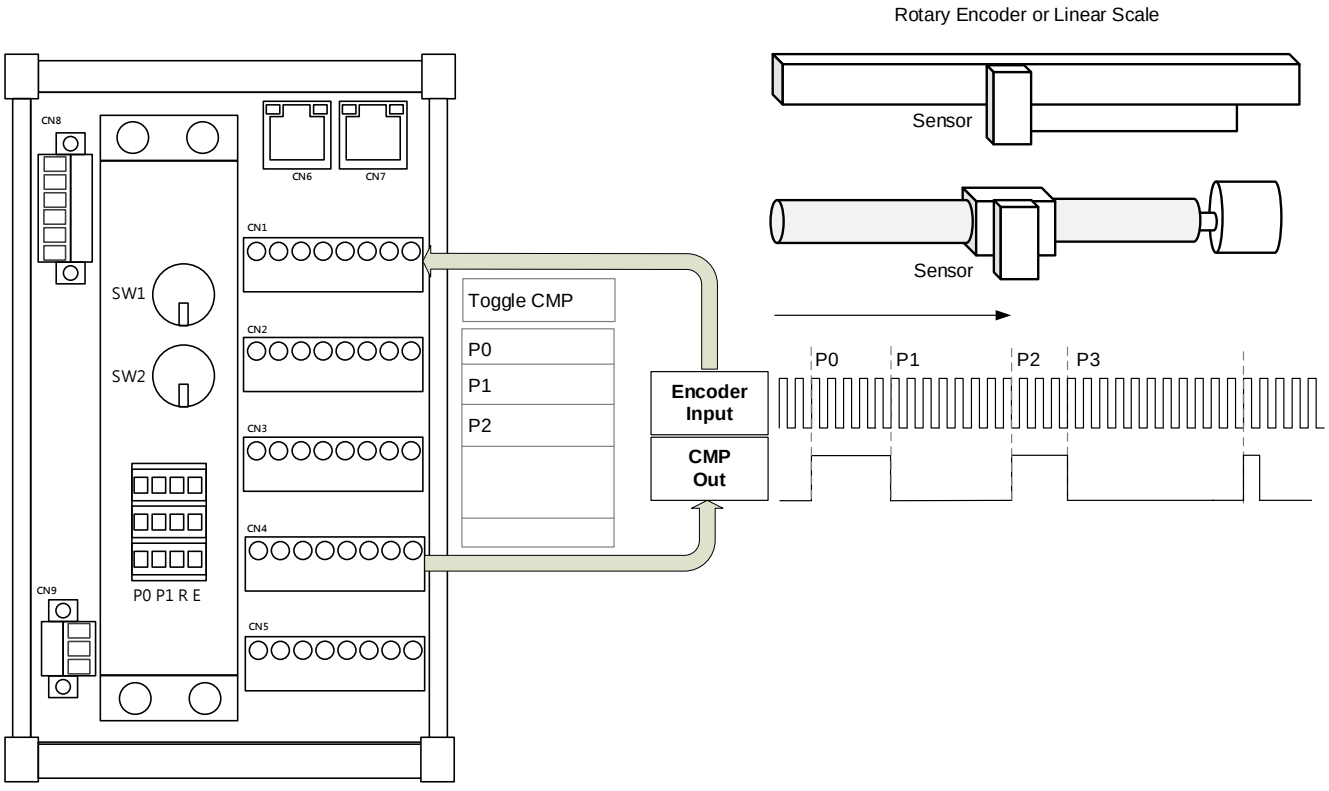
Compare trigger out follow encoder value – Auto CMP



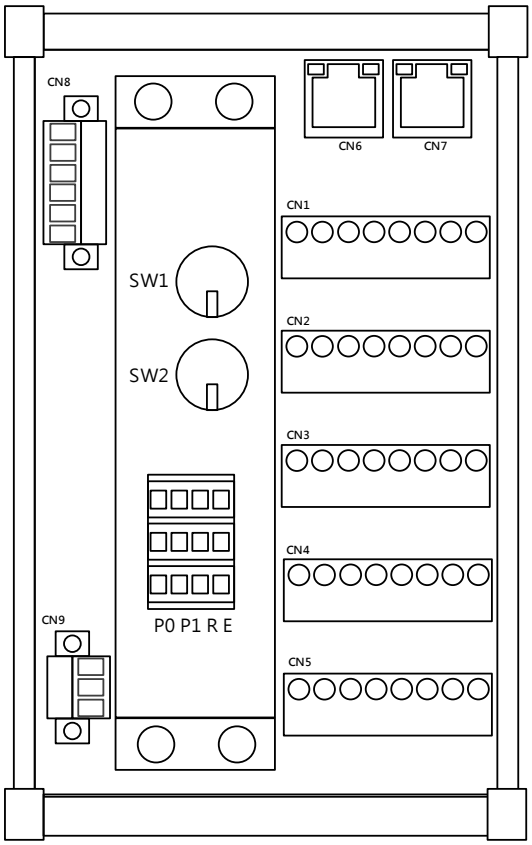
Compare trigger out follow encoder value – Table CMP



Compare trigger out follow encoder value – Toggle CMP

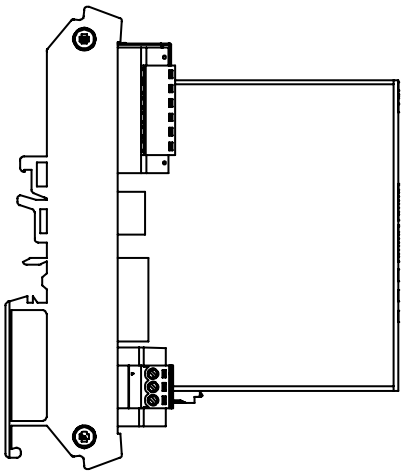


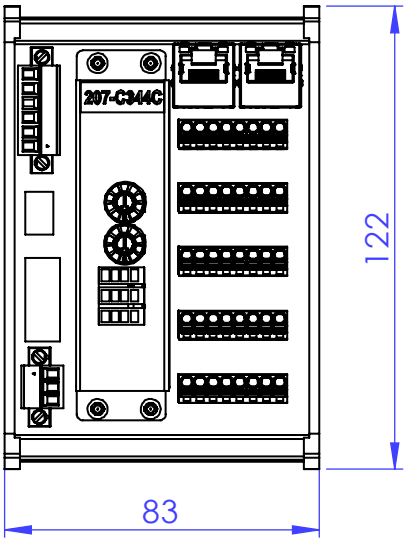
■ Placement

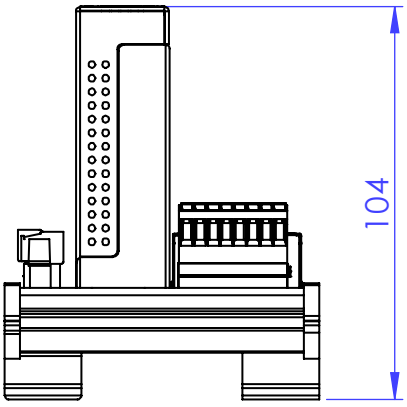


Label	Function
CN1	I/O Signal Connector
CN2	I/O Signal Connector
CN3	I/O Signal Connector
CN4	I/O Signal Connector
CN5	I/O Signal Connector
CN6	EtherCAT Communication IN
CN7	EtherCAT Communication OUT
CN8	Power Connector for External Isolation
CN9	Power Connector for Module

■ Dimension

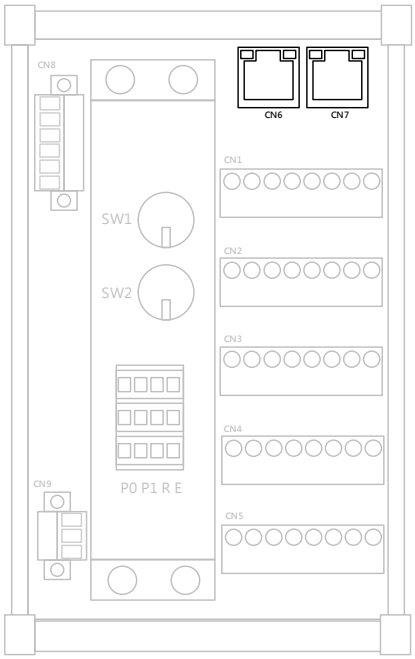


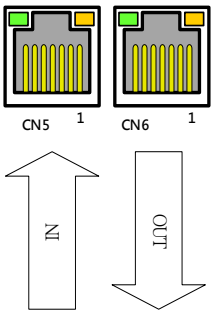




Unit:mm

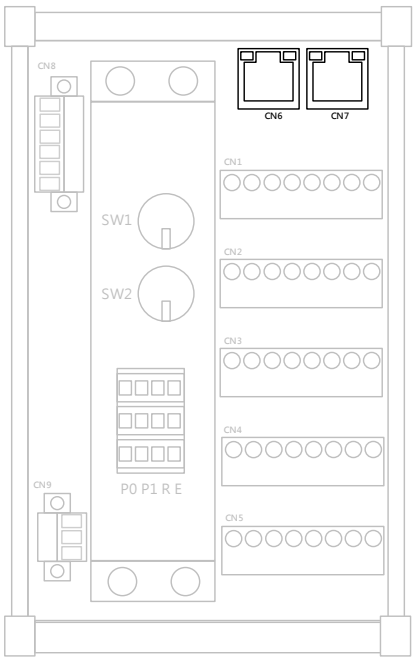
■ Communication IN and OUT



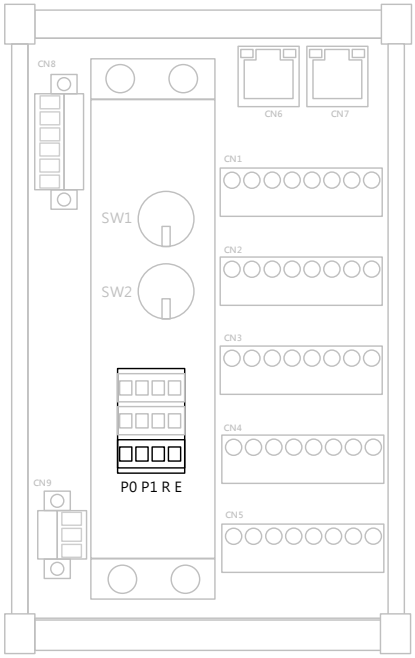


No.	Description
1	TX+
2	TX-
3	RX+
4	-
5	-
6	RX-
7	-
8	-

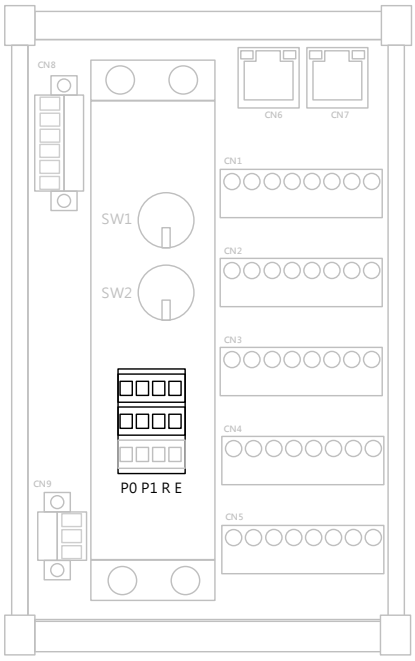
■ Status LED



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

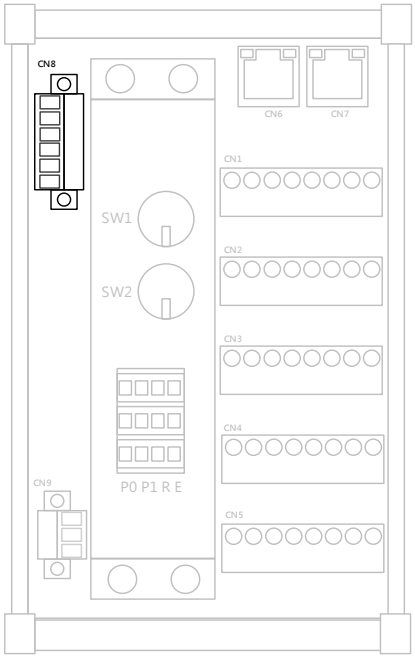


LED	Description
P0 - Yellow	DC +24V Supply
P1 - Yellow	DC +5V Supply for Internal
R - Green	In Normal Communication Off - INIT Status Slow Flash - PRE OP Status Single Flash - SAFE OP Status Last On - OP Status Quick Flash - BOOTSTRAP Status
E - Red	Error Communication Lights on when EtherCAT error occurs.

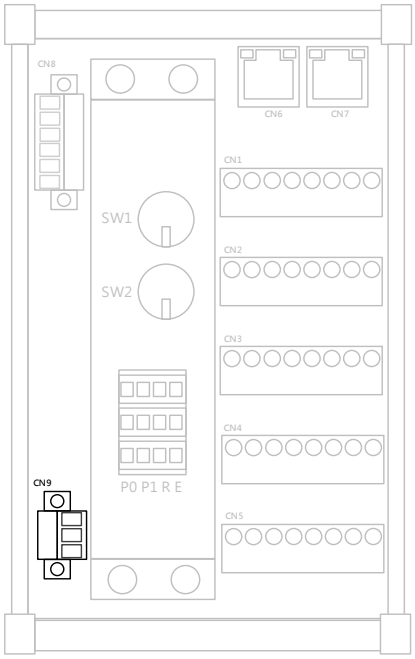


LED	Description
00 ~ 03 – Green	Digital Input bit 0 ~ 3 Lights on when digital input on.
04 ~ 07 - Green	Digital Input bit 4 ~ 7 Lights on when digital input on.

■ CN7 - Power connector

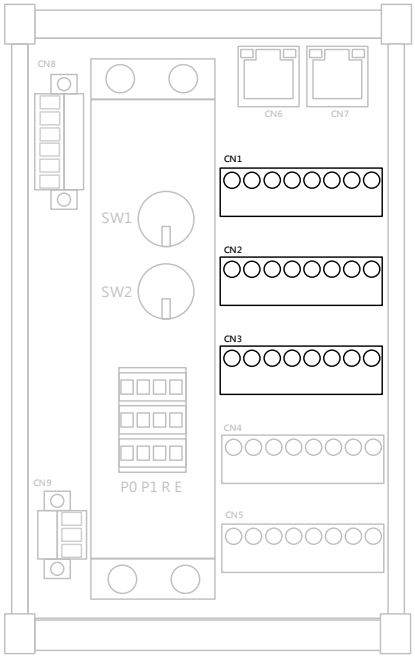


Pin	Label	Function
1	24V	DC 24V Input
2	GND	DC 24V ground
3	FG	Field ground
5	24V	DC 24V Input
6	GND	DC 24V ground
7	FG	Field ground



Pin	Label	Function
1	24Vs	DC 24V Input for module internal
2	GNDs	DC 24V ground for module internal
3	FG	Field ground

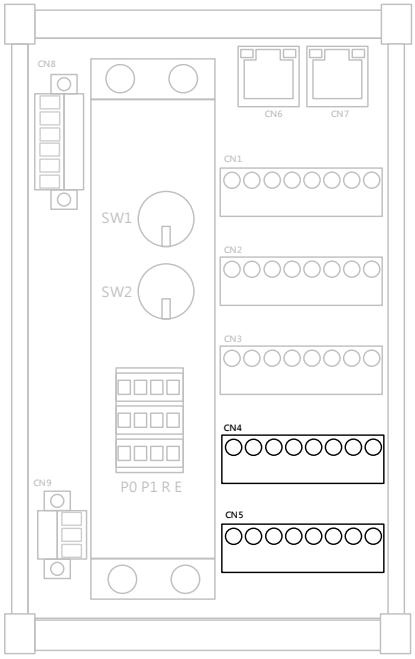
■ CN1 ~ CN3 – Encoder and Compare Trigger



	Pin	Label	Function
CN1	1	EA0+	ENC_0 A phase (+)
	2	EA0-	ENC_0 A phase (-)
	3	EB0+	ENC_0 B phase (+)
	4	EB0-	ENC_0 B phase (-)
	5	EZ0+	ENC_0 Z phase (+)
	6	EZ0-	ENC_0 Z phase (-)
	7	D5V	DC 5V Output
	8	DGND	DC 5V Ground
CN2	1	EA1+	ENC_1 A phase (+)
	2	EA1-	ENC_1 A phase (-)
	3	EB1+	ENC_1 B phase (+)
	4	EB1-	ENC_1 B phase (-)
	5	EZ1+	ENC_1 Z phase (+)
	6	EZ1-	ENC_1 Z phase (-)
	7	D5V	DC 5V Output
	8	DGND	DC 5V Ground
CN3	1	EA2+	ENC_2 A phase (+)
	2	EA2-	ENC_2 A phase (-)
	3	EB2+	ENC_2 B phase (+)
	4	EB2-	ENC_2 B phase (-)
	5	CMP0+	CMP_0 Trigger out (+)
	6	CMP0-	CMP_0 Trigger out (-)
	7	CMP1+	CMP_1 Trigger out (+)
	8	CMP1-	CMP_1 Trigger out (-)

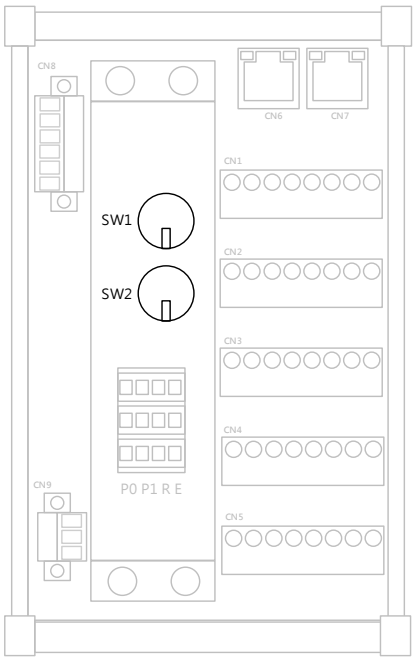
Note DC 5V output capacity is 150mA.

■ CN4 ~ CN5 – Encoder and Compare Trigger



	Pin	Label	Function
CN4	1	EA3+	ENC_3 A phase (+)
	2	EA3-	ENC_3 A phase (-)
	3	EB3+	ENC_3 B phase (+)
	4	EB3-	ENC_3 B phase (-)
	5	CMP2+	CMP_2 Trigger out (+)
	6	CMP2-	CMP_2 Trigger out (-)
	7	CMP3+	CMP_3 Trigger out (+)
	8	CMP3-	CMP_3 Trigger out (-)
CN5	1	IN_00	Port#0 Bit0 Input
	2	IN_01	Port#0 Bit1 Input
	3	IN_02	Port#0 Bit2 Input
	4	IN_03	Port#0 Bit3 Input
	5	IN_04	Port#0 Bit4 Input
	6	IN_05	Port#0 Bit5 Input
	7	IN_06	Port#0 Bit6 Input
	8	IN_07	Port#0 Bit7 Input

■ SW1 & SW2 - Node number setting



Label	Description	Value
SW1	node number_L	0 ~ 15
SW2	node number_H	0 ~ 15

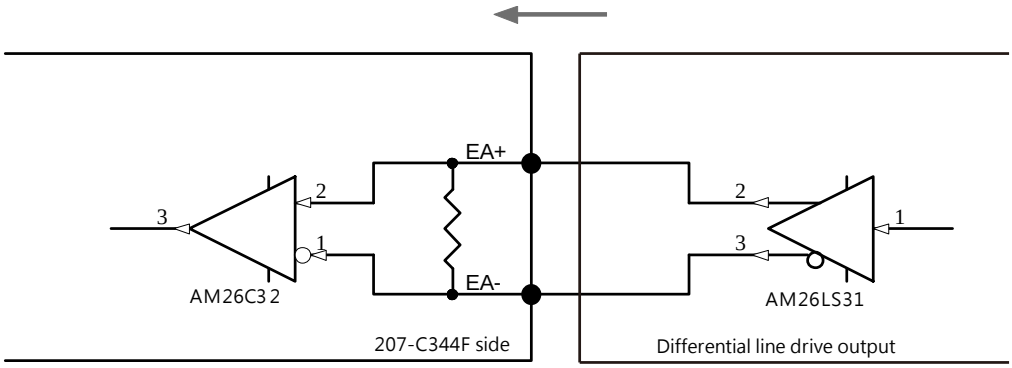
Note that node number = 16*SW2 + 1*SW1.

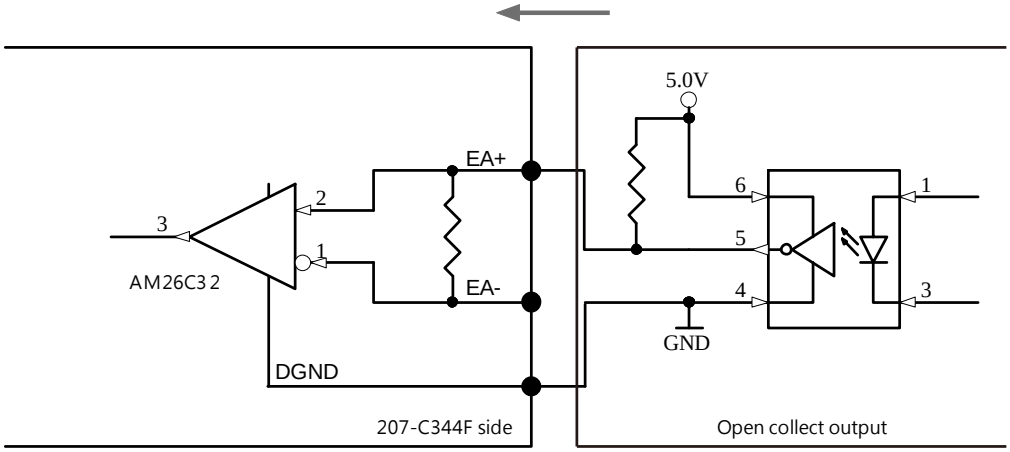
E.g. SW1 = 10, SW2 =2.

The node number will be set as “2 x 16 + 10 x 1= 42”.

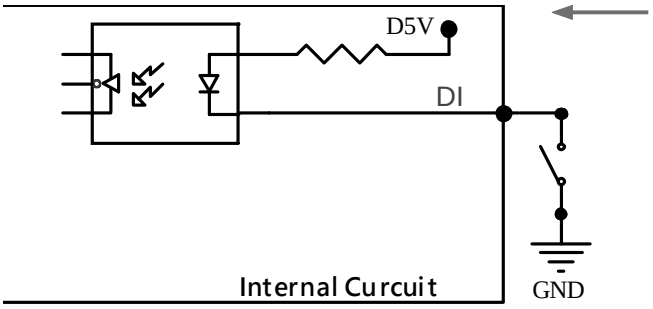
Default values are all 0.

■ Encoder Input Circuit



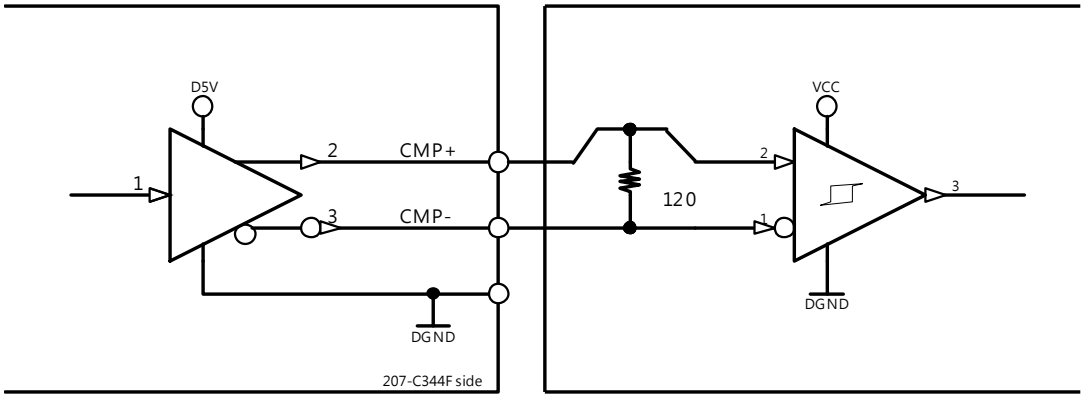


■ Digital Input Signal Circuit

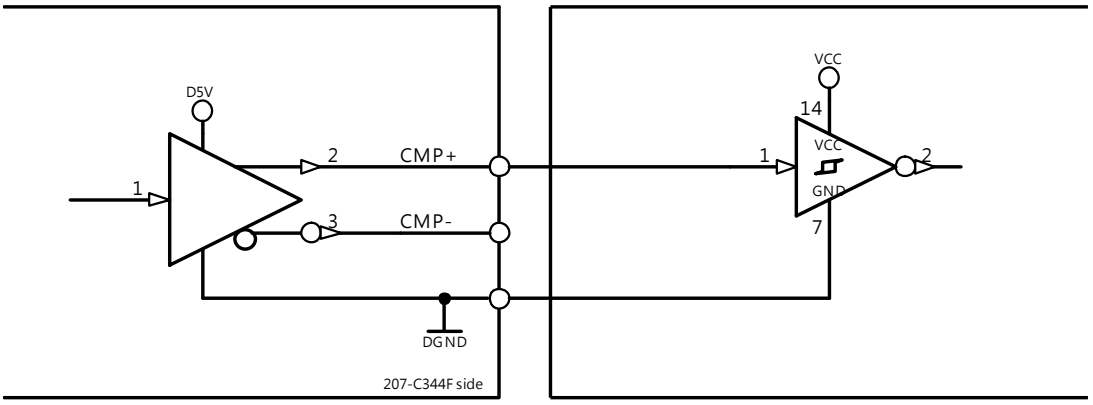


■ Compare Trigger Output Signal Circuit

Differential output (Line Driver to Receiver)



Differential output (Line Driver to TTL)



Differential output (Line Driver to Photocoupler)