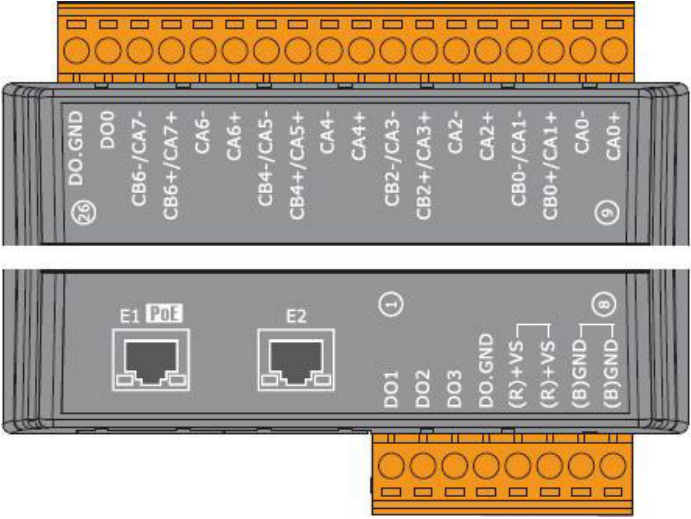


ET-7284/PET-7284

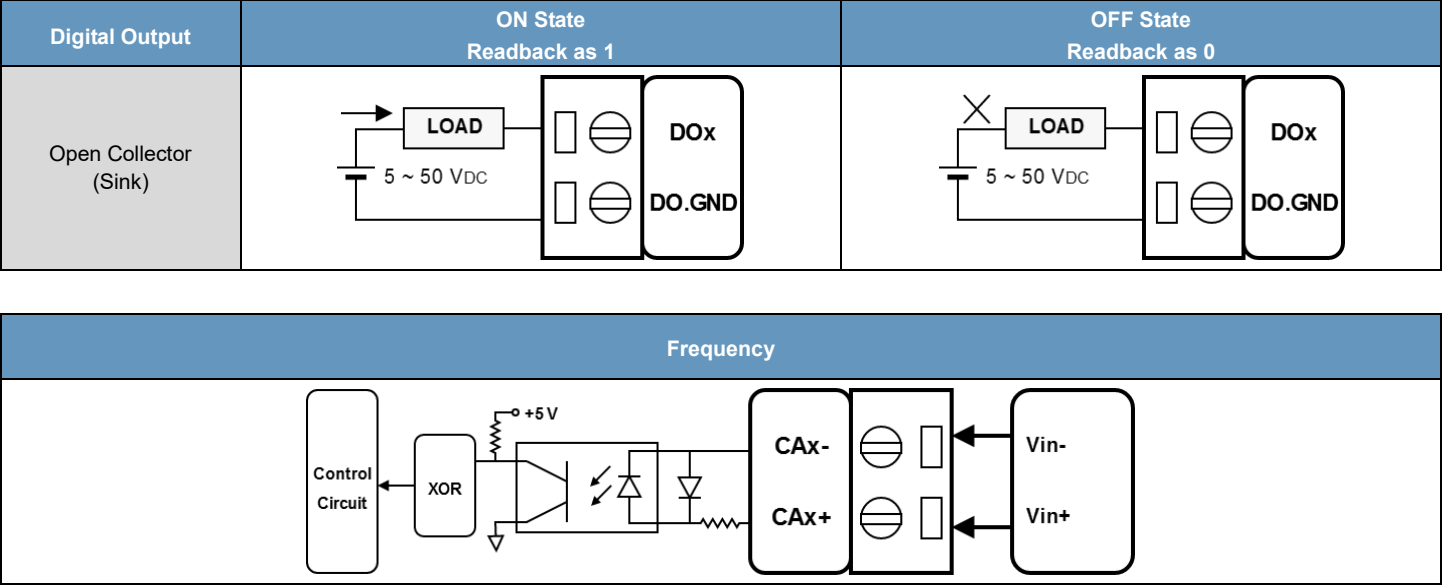
I/O Specifications

Counter/Frequency/Encoder Input	
Counter/Frequency/Encoder Input	4-channel Up/Down Counter (CW/CCW) 4-channel Dir/Pulse Counter (Bi-directional) 4-channel A/B Phase (Quadrant Counting) 8-channel Up Counter 8-channel Frequency
Contact	Wet
Sink/Source (NPN/PNP)	Sink
Maximum Count	4,294,967,295 (32-bit)
Input Level	Logic Level 0: +1 V <sub>DC</sub> Max.
	Logic Level 1: +3.5 V <sub>DC</sub> ~ +30 V <sub>DC</sub>
Programmable Low Pass Filter	1 ~ 32767 $\mu$ s
Individual Channel Configuration	Yes
Maximum Speed	200 KHz : +3.5 V <sub>DC</sub> ~ +10 V <sub>DC</sub>
	150 KHz : +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub>
Frequency Accuracy	+/-0.025%
	Input frequency ranging from 1 Hz to 200 KHz
	+/-0.1%
Count Value Retention	Input frequency ranging from 200 KHz to 1 MHz
	Yes
Digital Output	
Channels	4
Type	Isolated Open Collector
Sink/Source (NPN/PNP)	Sink
Max. Load Current	650 mA/Channel
Load Voltage	+5 V <sub>DC</sub> ~ +50 V <sub>DC</sub>
Overvoltage Protection	60 V <sub>DC</sub>
Overload Protection	1.4 A
Short-circuit Protection	Yes
Power-on Value	Yes, Programmable
Safe Value	Yes, Programmable

Pin Assignments



Wire Connections



Counter Type	
Up Counter	
Up/Down Counter	
Dir/Pulse	
A/B Phase	

Modbus Register Table

Coils (0xxxx)

Register		Points	Description	Data Format	Attribute	Factory Value
DEC	HEX					
00000 : 00003	0000 : 0003	4	DO value	0: Off 1: On	R/W	-
00034 : 00041	0022 : 0029	8	Clear the counter value	1: Clear	W	-
00064 : 00071	0040 : 0047	8	Clear the counter overflow status	1: Clear	W	-
00080 : 00087	0050 : 0057	8	Count value retention	0: Disable 1: Enable	R/W/E	0
00096 : 00103	0060 : 0067	8	Automatic switching between high/low frequency mode	0: Disable 1: Enable	R/W/E	0
00126	007E	1	Reset the I/O settings to the factory default state	1: Reset	W	-
00133	0085	1	Reboot the module	1: Reboot	W	-
00231	00E7	1	Safe the DO power-on value to the EEPROM	1: Save	W/E	-
00232	00E8	1	Safe the DO safe value to the EEPROM	1: Save	W/E	-
00235 : 00238	00EB : 00EE	4	Enable/Disable the DO power-on value function	0: Disable 1: Enable	R/W	0
00267 : 00270	010B : 010E	4	Enable/Disable the DO safe value function	0: Disable 1: Enable	R/W	0
00318	013E	1	Save preset values for the counter to the EEPROM	1: Save	W/E	-
00319	013F	1	Save maximum values for the counter to the EEPROM	1: Save	W/E	-
00352	0160	1	Data format for frequency type	0: Hex 1: float	R/W/E	0
00360 : 00367	0168 : 016F	8	High/low frequency mode for frequency measurement	0: Normal speed 1: High speed	R/W/E	0
00376 : 00383	0178 : 017F	8	Stop counting on counter overflow	0: Disable 1: Enable	R/W/E	0
00392 : 00399	0188 : 018F	8	Enable/Disable low-pass filter for counter	0: Disable 1: Enable	R/W/E	0
00408 : 00415	0198 : 019F	8	XOR mask	0: Disable 1: Enable	R/W/E	0

Discrete Inputs (1xxxx)

Register		Points	Description	Data Format	Attribute
DEC	HEX				
10096 : 10103	0060 : 0067	8	Input status after XOR operation	0: Off 1: On	R
10112 : 10119	0070 : 0077	8	Input status after low-pass filter	0: Off 1: On	R
10128 : 10135	0080 : 0087	8	Counter overflow status	0: Underflow 1: Overflow	R

Input Register (3xxxx)

Register		Points	No. Per Point	Description	Data Format	Attribute
DEC	HEX					
30016 : 30031	0010 : 001F	8	2	Counter/frequency value	0 to 4294967295 (0 to 0xFFFFFFFF)	R
30140	008C	1	1	Number of the counter channel	8	R
30150	0096	1	1	OS image version	0x123 means version 1.2.3	R
30151	0097	1	1	Firmware version	0x123 means version 1.2.3	R
30153	0099	1	1	I/O version	0x123 means version 1.2.3	R
30160	00A0	1	1	Communication state of the pair-connection	0: Normal <0: Failed	R

Holding Register (4xxxx)

Register		Points	No. Per Point	Description	Data Format	Attribute	Factory Value
DEC	HEX						
40032 : 40039	0020 : 0027	8	1	Type code of channel	0x50: Up Counter 0x51: Frequency 0x54: Up/Down Counter (CW/CCW) 0x55: Dir/Pulse (Bi-directional) 0x56: A/B Phase (Quadrant Counting)	R/W/E	0x50
40050 : 40065	0032 : 0041	8	2	Set a preset value for the counter Any values updated based on the Modbus communication will not take immediate effect and not be saved to EEPROM until the register (00318) is changed by a write operation.	0 to 4,294,967,295	R/W	0
40066 : 40081	0042 : 0051	8	2	Set a maximum value for the counter Any values updated based on the Modbus communication will not take immediate effect and not be saved to EEPROM until the register (00319) is changed by a write operation.	0 to 4,294,967,295	R/W	4294967295
40102	0066	1	1	Frequency measurement timeout (units: 100 ms)	1 to 255	R/W/E	1
40104	0068	1	1	Low-pass filter time for channel 0 and 1 (units: μs)	1 to 32767	R/W/E	1
40105	0069	1	1	Low-pass filter time for channel 2 and 3 (units: μs)	1 to 32767	R/W/E	1
40106	006A	1	1	Low-pass filter time for channel 4 and 7 (units: μs)	1 to 32767	R/W/E	1
40255	00FF	1	1	Read the module reset status	1: Power-on 2: Module Watchdog 3: Software Reset Command	R	-
40256	0100	1	1	Read the boot count of the module The factory default value is 0 when the settings are set to the factory default values.	1 to 32767	R/W/E	1

40257	0101	1	1	Set the Host WDT timeout (units: 0.1 sec)	0: Disable the Host WDT 1 to 65535: Enable the Host WDT	R/W/E	0
40258	0102	1	1	Read the WDT event count The initial value is 0 when the module is reset, and is increased when the WDT even happens.	0 to 32767	R	-
40260	0104	1	1	Read the module name	0x7284	R	-
40271	010F	1	1	Set the module identification (Modbus NetID)	0 to 255	R/W/E	1