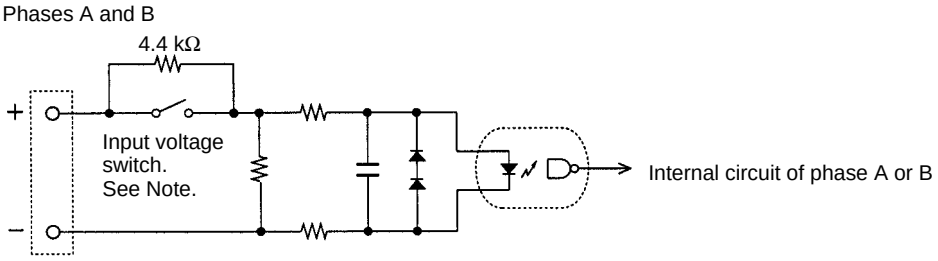
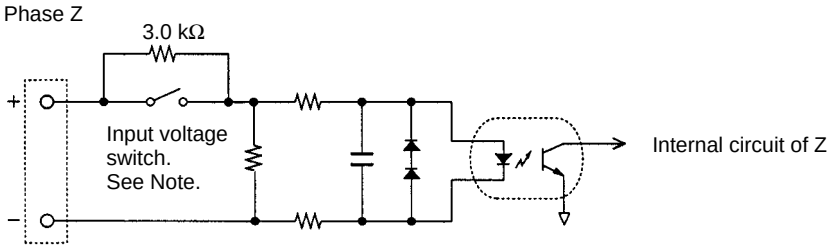
8-1-9 Internal Circuits

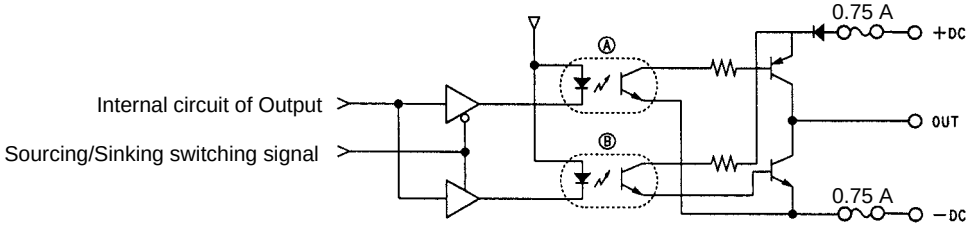
Pulse Inputs





Note ON: Line driver input
OFF: 24-V DC input

External Outputs



Note In the above figure, A is active when sourcing outputs are set, and B is active when sinking outputs are set.

8-2 Pulse I/O Board

8-2-1 Model

Name	Model	Specifications
Pulse I/O Board	CQM1H-PLB21	Two pulse input points and two pulse output points

8-2-2 Function

The Pulse I/O Board is an Inner Board that supports two pulse inputs and two pulse outputs.

Pulse Inputs 1 and 2

Pulse inputs 1 and 2 can be used as high-speed counters to count pulses input at either 50 kHz (signal phase) or 25 kHz (differential phase). Interrupt processing can be performed based on the present values (PV) of the counters.

Input Mode

The following three Input Modes are available:

- Differential Phase Mode (4x)

8-2-8 Specifications

Item	Specifications
Name	Pulse I/O Board
Model number	CQM1H-PLB21
Compatible CPU Units	CQM1H-CPU51/61
Unit classification	CQM1H-series Inner Board
Mounting locations and number of Boards	One in Inner Board slot 2 (right slot)
Pulse inputs	2 inputs (Refer to *High-speed Counter Pulse Inputs* below for details.)
Pulse outputs	2 outputs (Refer to *Pulse Outputs* below for details.)
Setting section	None
Indicators	Front: 12 LEDs 1 each of Ready (RDY) and Error (ERR) 2 each of phase A (A□), phase B (A□), phase Z (Z□), CW pulse (CW□), and CCW pulse (CCW□).
Front connection section	Connectors CN1 and CN2 (Compatible connector: Sockets & Hoods provided as standard accessories.)
Current consumption (Supplied from Power Supply Unit)	5 V DC 160 mA max.
Dimensions	25 × 110 × 107 mm (W × H × D)
Weight	90 g max.
Standard accessories	Sockets: XM2D-1501 (OMRON) x 2 Hoods: XM2S-1511 (OMRON) x 2

High-speed Counter Specifications

Counter Specifications

Item			Specifications		
Number of counters			2 counters (ports)		
Input Modes (Set for each port in the PC Setup.)			Differential phase input	Pulse/Direction input	Up/Down pulse input
Input pin No.	Port 1	Port 2	---		
	3/10	3/10	A-phase input	Direction input	Decrement pulse input
	4/11	4/11	B-phase input	Pulse input	Increment pulse input
	2/9	2/9	Z-phase input	Reset input	Reset input
Input method			Phase difference multiple of 4 (Fixed)	Single-phase pulse + direction	Single-phase pulse x 2
Count frequency			25 KHz	50 KHz	50 KHz
Count value			Linear Mode: –8388608 to 8388607 Ring Mode: 0 to 64999 (Maximum value can be set between 1 and 65000 with CTBL(63).)		
Storage location of counter PV			Port 1: IR 233 (leftmost digits) and IR 232 (rightmost digits) Port 2: IR 235 (leftmost digits) and IR 234 (rightmost digits) Data format: 8-digit BCD Linear Mode: F8388608 to 8388607 (Leftmost digit is F Hex for negative numbers.) Ring Mode: 00000000 to 00064999		
Control method	Target value		Up to 48 target values and interrupt subroutine numbers registered.		
	Range comparison		Up to 8 upper limits, lower limits, and interrupt subroutine numbers registered.		
Counter reset method			**Phase-Z Signal + Software Reset** A counter is reset on the first phase-Z signal input after its Reset Bit (see below) is turned ON. **Software Reset** A counter is reset when its Reset Bit (see below) is turned ON. Reset Bits Port 1: SR 25201 Port 2: SR 25202		