

Table 3-1. Ovation Module Choices (Cont'd)

Module Type	Channel	Electronic Module	Personality Module
Loop Interface (AI: 4 - 20mA remote powered) User defined Digital Input³	4	1C31174G24	1C31177G03
Loop Interface (AI: 4 - 20mA local powered)	4	1C31174G04	1C31177G02
Loop Interface (AI: 4 - 20mA local powered) User defined Digital Input³	4	1C31174G24	1C31177G02
Pulse Accumulator (24/48V 5/12V med speed ext PS)	2	1C31147G01	1C31150G03
Pulse Accumulator (24/48V 5/12V med speed neg com)	2	1C31147G01	1C31150G01
Pulse Accumulator (24/48V 5/12V med speed pos com)	2	1C31147G01	1C31150G02
Pulse Accumulator (5V high speed ext PS)	2	1C31147G02	1C31150G03
Pulse Accumulator (5V high speed neg com)	2	1C31147G02	1C31150G01
Pulse Accumulator (5V high speed pos com)	2	1C31147G02	1C31150G02
Relay Output Module G2R	16	1C31219G01	1C31223G01 or (Base Unit)
Relay Output Module KUEP	12	1C31219G01	1C31222G01 or (Base Unit)
RTD Interface	4	1C31161G01	1C31164G01
RTD Interface (CE Mark certified)	4	1C31161G02	1C31164G02
Seq. of Events (125VDC differential)	16	1C31157G02	1C31110G02
Seq. of Events (125VDC single ended)	16	1C31157G02	1C31110G01
Seq. of Events (24/48VDC differential)	16	1C31157G01	1C31110G02
Seq. of Events (24/48VDC single ended)	16	1C31157G01	1C31110G01
Seq. of Events contact input w/48V auxiliary	16	1C31157G03	1C31110G03
Compact Seq. of Events (125VDC differential)	16	1C31233G03	5X00034G01 or Cavity Insert ²
Compact Seq. of Events (24/48VDC differential)	16	1C31233G02	5X00034G01 or Cavity Insert ²
Compact Seq. of Events (24VDC or 48VDC single ended)	16	1C31233G01	Cavity Insert ²

3-6.2. Personality Module Fuses

Some Personality modules (Pmods) may contain fuses. These fuses are typically 5 x 20 mm fuses, and are conveniently located for easy replacement (see [Figure 3-1](#)).

If a 5x20 mm cartridge fuse needs to be replaced, push the fuse cap in, turn it one-quarter turn counter-clockwise, and the fuse will pop up. Replace the blown fuse with an exact replacement fuse. Fuse sizes are indicated on the Personality module label. Refer to [Table 3-3](#) for descriptions of fuses used by Ovation Personality modules.

If the fuse is a micro fuse, pull the blown fuse out of its holder and plug the replacement fuse into the vacated holder.

Note

In CE Mark Certified systems, the project drawings **MUST** include any fuses and their ratings, if they are replaceable by a qualified technician.

Table 3-3. Personality Module Fuses

Type	Rating	Used On	Part Number
5 x 20 mm cartridge	0.50A; 250V; Fast acting	Digital Input Pmods Sequence of Events 1C31110G01	EX06100
5 x 20 mm cartridge	0.063A; 250V; Fast acting	Analog Input Pmods 1C31116G02 - G03 Loop Interface Pmods 1C31177G02 - G03	EX06102
5 x 20 mm cartridge	0.63A; 250V; Fast acting	Pulse Accum. Pmods 1C31150G01 - G03	EX06071
5 x 20 mm cartridge	1.0A; 250V Fast acting	Relay Base 16 G2R 1C31223G01	EX06104

17-2.2. Personality Modules

There are three groups of Personality modules for the Pulse Accumulator Module:

- 1C31150G01 accepts 24/48 V count and control inputs from dry contacts or from open-collector transistor drivers. The input signals are low-true and are referenced to the branch internal auxiliary power supply return (common negative).
- 1C31150G02 accepts 24/48 V count and control inputs from dry contacts. The input signals are high-true and are referenced to the branch internal auxiliary power supply positive rail (common positive).
- 1C31150G03 provides dedicated 24/48 V count and control field input power for just this Pulse Accumulator Electronics module. The field input power is obtained from an external DC power supply that is connected to two base unit terminal block terminals (DSA and DSB).

Table 17-1. Pulse Accumulator Subsystem¹

COUNT Input Level	Control (ENABLE and SNAPSHOT) Input Level	Channels	Electronic Module	Personality Module
24/48 V Medium Speed	24/48 V Medium Speed			
	Local field pwr. common neg.	2	1C31147G01	1C31150G01
	Local field pwr. common pos.	2	1C31147G01	1C31150G02
	Ext. field pwr. common pos. or neg.	2	1C31147G01	1C31150G03
5/12 V Medium Speed	24/48 V Medium Speed			
	Local field pwr. common neg.	2	1C31147G01	1C31150G01
	Local field pwr. common pos.	2	1C31147G01	1C31150G02
	Ext. field pwr. common pos. or neg.	2	1C31147G01	1C31150G03
5 V High Speed	24/48 V Medium Speed			
	Local field pwr. common neg.	2	1C31147G02	1C31150G01
	Local field pwr. common pos.	2	1C31147G02	1C31150G02
	Ext. field pwr. common pos. or neg.	2	1C31147G02	1C31150G03

¹ To use this module, the algorithm RPACNT or RPAWIDTH must reside in the Ovation Controller. Refer to [“Ovation Algorithm Reference Manual” \(R3-1100\)](#) for detailed information about the RPACNT and RPAWIDTH algorithms.

17-3. Specifications

Electronics Module (1C31147)
Personality Module (1C31150)

Table 17-2. Pulse Accumulator Specifications

Description	Value
Number of channels	2
Field input voltage range ¹	Field count: +5V (high speed) +5/12V (medium speed) + 24/48V Field controls: +24/48V
24/48 V field input power ²	Common positive (1C31150G02) Common negative (1C31150G01) Dedicated (user-defined) contact power (1C31150G03)
Configurable functions	Count pulses Measure pulse width Measure period Measure speed
Counter output	15 bit count (bits 14 - 0) Bit 15 (MSB) is an update bit indicating new data available Counter overflow status
Field inputs	External count input (leading or trailing edge) OR Selectable internal timebase: 100 Khz, 10 Khz, 1 Khz See Table 17-3 for more information.
Input filter	+5V High Speed Count: 1 µSec. to 5 µSec. +5/12V Medium Speed Count: 16 µSec. to 38 µSec. +24/48V Count: 150 µSec to 450 µSec +24/48V Controls: 150 µSec to 450 µSec
Contact debounce (24/48 V field inputs)	Configurable: Minimum: 1.4 mSec Maximum: 2.0 mSec
Dielectric isolation: Channel to channel Channel to logic	1000V AC/DC 1000V AC/DC
Operating temperature range	0 to 60°C (32°F to 140°F)
Storage temperature range	-40°C to 85°C (-40°F to 185°F)
Humidity (non-condensing)	0 to 95%

Note

Do **not** use unmarked terminal block locations.

If DSB = (+), then X = (+); Y = (-)
If DSB = (-), then X = (-); Y = (+)

If DSB = (-), then X = (-); Y = (+)

Dedicated External Power: (1C31150G03)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	HC+	MC+		CTX	ENX	SSX			HC+	MC+		CTX	ENX	SSX		DSA	PS+	PS-
B	HM-			CTY	ENY	SSY			HM-			CTY	ENY	SSY		DSB	PS+	
C	RSV	RSV		RSV	RSV	RSV			RSV	RSV		RSV	RSV	RSV		RSV	<u> </u>	<u> </u>

Channel 1
Channel 2

Common Positive: (1C31150G02)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	HC+	MC+		CT+	EN+	SS+			HC+	MC+		CT+	EN+	SS+			PS+	PS-
B	HM-			CT-	EN-	SS-			HM-			CT-	EN-	SS-				PS+
C	RSV	RSV		RSV	RSV	RSV			RSV	RSV		RSV	RSV	RSV		RSV	<u> </u>	<u> </u>

Channel 1
Channel 2

Common Negative: (1C31150G01)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
A	HC+	MC+		CT-	EN-	SS-			HC+	MC+		CT-	EN-	SS-				PS+	PS-
B	HM-			CT+	EN+	SS+			HM-			CT+	EN+	SS+				PS+	
C	RSV	RSV		RSV	RSV	RSV			RSV	RSV		RSV	RSV	RSV		RSV	<u> </u>	<u> </u>	

Channel 1

Channel 2

Figure 17-1. Terminal Block Connections for the Pulse Accumulator Personality Module

17-5. Pulse Accumulator Field Connection Wiring Diagrams

Non-CE Mark Certified Systems

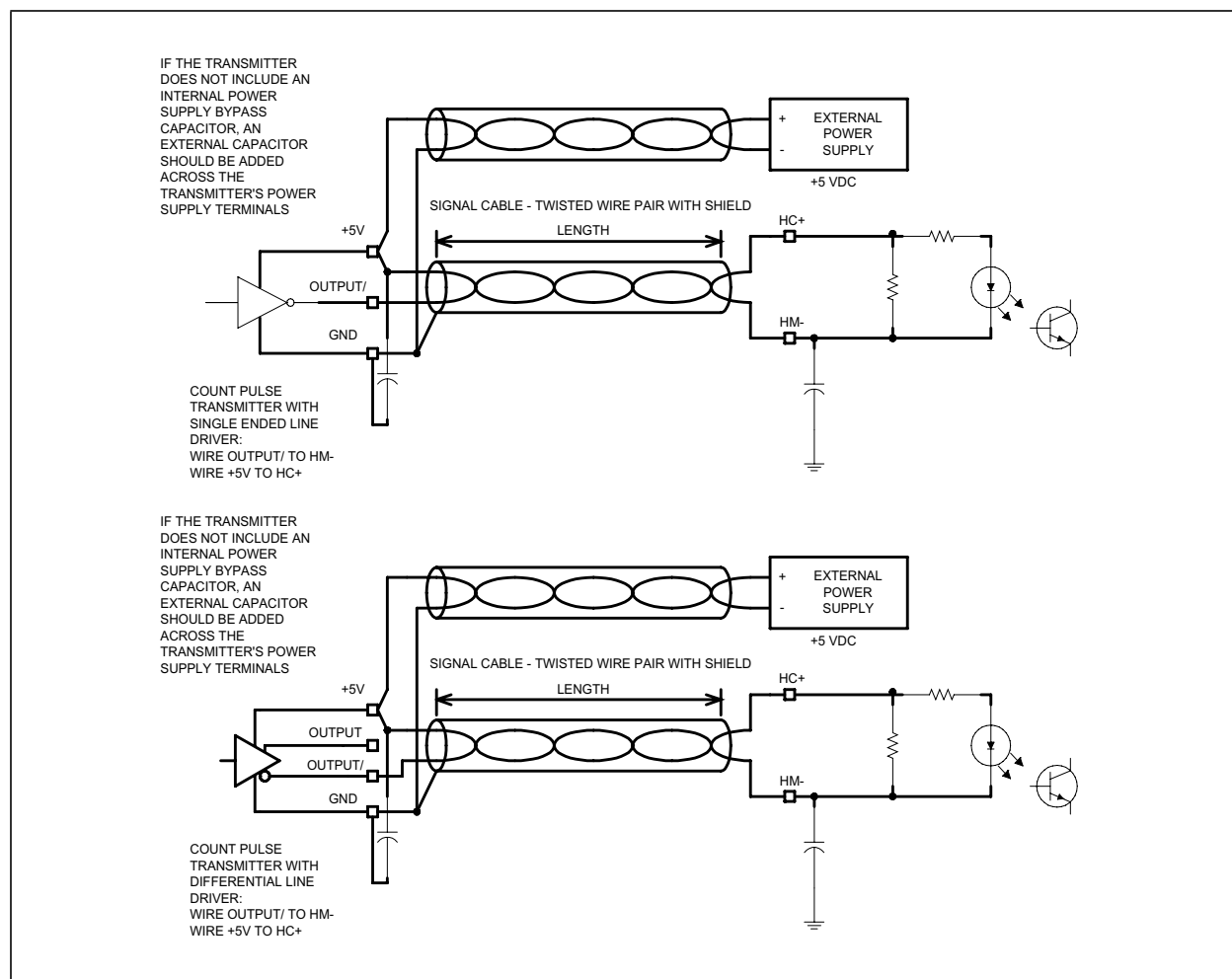
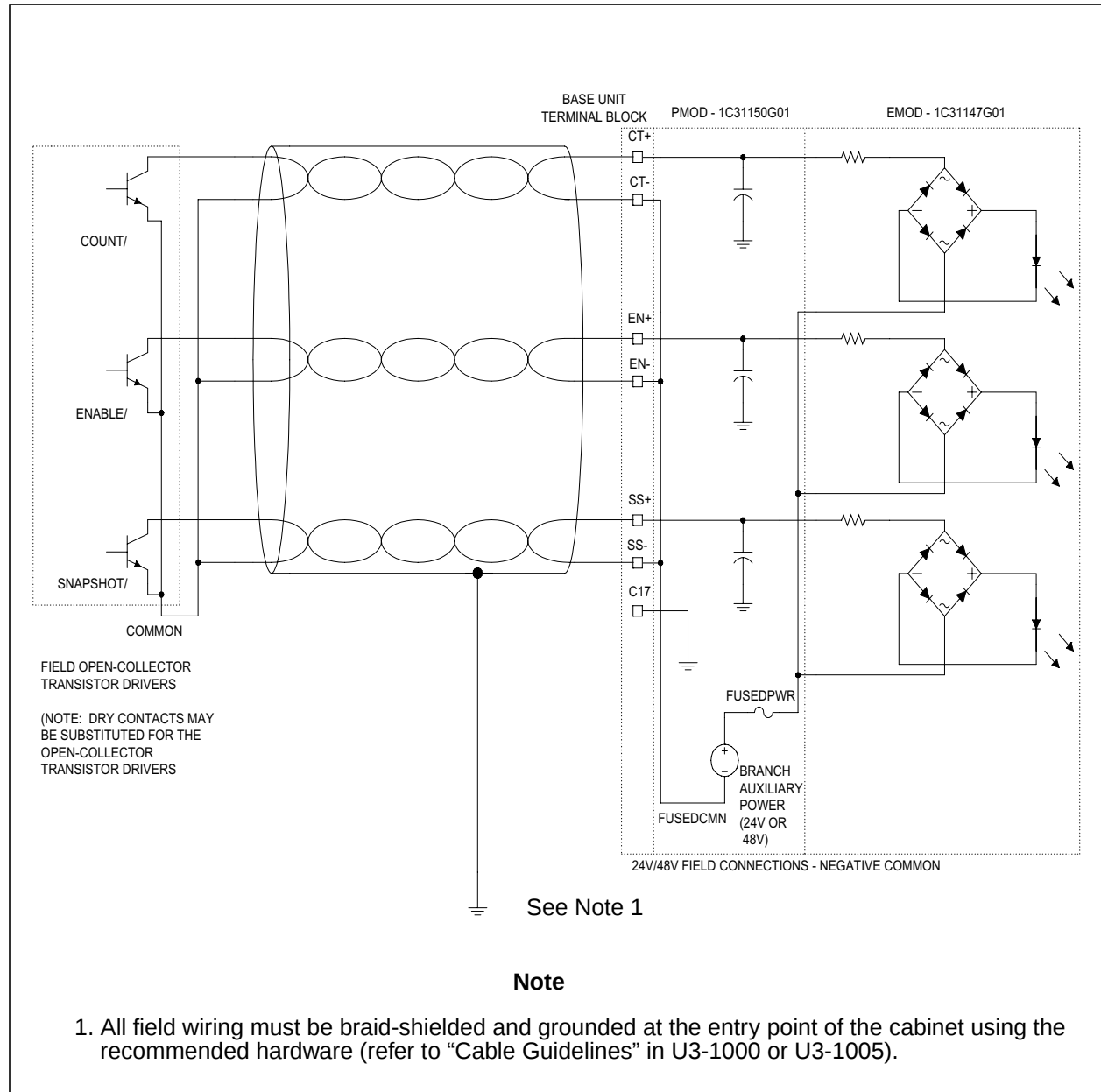


Figure 17-2. 5 V Count Field Connections - (Non-CE Mark)

Figure 17-3. 24V/48V Field Connections - Common Negative (Non-CE Mark)

CE Mark Certified Systems



**Figure 17-9. 24V/48V Field Connections - Common Negative
(CE Mark)**