8C-PDIPA1 51454471-375

01 / Identify and record the installed circuit

Honeywell 8C-PDIPA1 51454471-375 is a coated Series 8 digital input and pulse accumulation module. It accepts discrete field states and can count pulses or measure frequency on configured channels.

> **Series 8 position**
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> A Series 8 C300 exchanges input data through a compatible IOTA; field devices and their power arrangement complete each circuit.

Pre-work record

Module and IOTA identity

Capture the old 8C-PDIPA1 and IOTA markings and their installed slot before removing the module.

Controller baseline

Save the C300 point configuration, pulse totals, frequency indications and active diagnostics.

Field circuit record

Record the power source, polarity, return path and pulse-input waveform at the connected terminals.

Electrical values to verify

Voltage rating	24 VDC
External DI power range	18-30 VDC
Module current rating	105 mA
Pulse frequency	0-1 kHz at minimum 30% duty cycle
Minimum pulse width	300 µs
Per-channel scan time	300 µs
ON threshold	13 VDC minimum or 3 mA minimum
OFF threshold	5 VDC maximum or 1.2 mA maximum

8C-PDIPA1 51454471-375

02 / Install and reconnect

Preserve the channel map

Record the 32 point assignments and which of channels 1-16 use pulse mode before removing hardware.

Verify field power

Identify internal versus external power at the IOTA; apply the specified external supply range only to a user-supplied arrangement.

Check pulse quality

Measure the source frequency, duty cycle and pulse width at the input under operating conditions.

Respect isolation conditions

Do not interpret the 1000 VAC RMS isolation value as permission to omit circuit separation or grounding design.

Match the IOTA

Verify 8C-TDILA1 or 8C-TDILB1 and the redundant configuration before fitting the module.

Prove live behavior

Challenge a discrete point and a pulse point, compare counts, frequency, diagnostics and controller values with the saved baseline.

System checks

The 8C-PDIPA1 provides 32 input channels. Channels 1-16 can be configured individually for discrete input or pulse accumulation; channels 17-32 operate as discrete inputs. The pulse function supports accumulation and frequency measurement, so the C300 point configuration must reflect the connected instrument and the intended calculation.

For user-supplied field power, Honeywell specifies an 18-30 VDC DI power range and a 24 VDC module voltage rating. The module current rating is 105 mA. Optical isolation is implemented in the I/O module; the listed 1000 VAC RMS galvanic-isolation figure is subject to the external-power arrangement defined in the specification.

A pulse input accepts a 0-1 kHz source when the device meets the minimum 30% duty-cycle condition. The minimum pulse width and individual-channel scan time are each 300 microseconds. Confirm the real sensor waveform and input-filter delay before relying on the counted value for alarms or maintenance trends.

Why can 8C-PDIPA1 51454471-375 show a correct contact state but an incorrect pulse total?

A discrete threshold can be satisfied while a pulse source violates the 300 µs minimum width or the minimum 30% duty cycle. Measure the waveform at the IOTA and review the configured totalization scale.

How should the first sixteen channels of 8C-PDIPA1 51454471-375 be commissioned?

Record the intended DI or pulse mode separately for each channel, verify the connected device and field-power selection, then challenge both the raw channel state and the C300 application value.

8C-PDIPA1 51454471-375

03 / Test, diagnose and hand over

What happens if a pulse signal on 8C-PDIPA1 51454471-375 exceeds its documented frequency range?

Counts may no longer represent the source reliably. Check the source against the 0-1 kHz condition and the specified duty cycle, and use a suitable input design if the waveform falls outside those limits.

When does the isolation rating of 8C-PDIPA1 51454471-375 apply?

The 1000 VAC RMS system-to-field figure is specified for the external user-supplied power option. Confirm the IOTA power arrangement and full cabinet separation before applying that rating to an installation.

How can an apparently stuck input on 8C-PDIPA1 51454471-375 be isolated?

Compare the field voltage or current with the ON and OFF thresholds at the IOTA, inspect the wiring and power return, and then compare raw channel status with the C300 project point.

Can 8C-PDIPA1 51454471-375 be moved from a nonredundant to a redundant position without a configuration review?

No. Verify the 8C-TDILB1 redundant IOTA, paired slot, controller project and state-transfer logic before changing the installed arrangement.

Why might a rapid change be missed by 8C-PDIPA1 51454471-375 even though the wiring is sound?

Check pulse width and the specified 5 ms ±20% input-filter/isolation delay against the event timing. A short transient below the qualified input condition may not be represented as the application expects.

What is a useful acceptance test after replacing 8C-PDIPA1 51454471-375?

Exercise representative OFF and ON states, inject a qualified pulse train on a configured channel, compare total and measured frequency, and review module diagnostics and the controller event record.

Technical basis: Honeywell Series 8 Controller and I/O Specification, S803-150-520, Version 1.0 (March 2022).

Technical enquiry

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