

Honeywell 8C-TDILA1 51307141-175

Digital Input IOTA

Product scope

- Terminates thirty-two 24 V DC status channels for Series 8 digital input processing.
- Optically separates field circuits from the control-system electronics.
- Applies a five-millisecond input delay to reject brief contact or wiring disturbances.

Manufacturer source

Exact-model technical record

Verified model-specific overview, function, operating principle, applications and technical data.

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Honeywell 8C-TDILA1 51307141-175

Digital Input IOTA

Product overview

Honeywell 8C-TDILA1 51307141-175 is a coated, non-redundant nine-inch IOTA for the Series 8 24 V DC digital input module. It connects thirty-two field inputs with optical system-to-field isolation.

8C-TDILA1 51307141-175 provides terminal access and field distribution for the 8C-PDILA1 input electronics. Thirty-two 24 V channels share the nine-inch Series 8 termination format while maintaining optical isolation from the control-system side.

Dry contacts or powered field devices produce input states that the paired electronics filter and report to Experion. A defined five-millisecond delay reduces short electrical disturbances while preserving normal sequence response.

Replacement requires the exact nine-inch non-redundant carrier and the correct 8C-PDILA1 module. Field-source voltage, contact resistance, common wiring and channel order must be verified before terminals are transferred.

Technical specifications

Digital inputs	32
Input supply	18 to 30 V DC
Nominal field voltage	24 V DC
Logic ON threshold	13 V DC or 3 mA minimum
Logic OFF threshold	5 V DC or 1.2 mA maximum
Input impedance	4.2 kΩ
Input delay	5 ms ±20%
Maximum ON-state field resistance	300 Ω at 15 V
Minimum OFF-state field resistance	30 kΩ at 30 V
System-to-field isolation	1000 V AC RMS or ±1500 V DC
Isolation method	Optical
Module current	95 mA
IOTA size	9 inch
Redundancy	Non-redundant
Conformal coating	Coated
Matched electronics	8C-PDILA1
Hot removal and insertion	Supported within system procedure

8C-TDILA1 51307141-175 function and operating principle

Ordered configuration

This part is the coated nine-inch non-redundant IOTA and not the removable digital input electronics.

System role

It gathers switch, interlock and equipment-state signals for C300 control strategies.

Selection and installation

Terminal commons, field source and wetting resistance should be reviewed against each connected device before exchange.

Functional path

- Terminates thirty-two 24 V DC status channels for Series 8 digital input processing.
- Optically separates field circuits from the control-system electronics.
- Applies a five-millisecond input delay to reject brief contact or wiring disturbances.

Application scenarios

- Motor-control centres use the channels to report run, trip and permissive contacts to Experion.
- Process skids collect valve limit switches and pressure-switch states through the 32-point termination assembly.
- Shutdown-support panels can isolate the controller electronics from 24 V field wiring while retaining rapid event response.

8C-TDILA1 51307141-175 engineering checks

Diagnostics

- Defined ON and OFF thresholds distinguish valid field states from leakage or open wiring conditions.
- The five-millisecond filter prevents very short transients from appearing as stable controller inputs.
- Channel status is supervised through the paired 8C-PDILA1 electronics in the Experion system.

Compliance

- System-to-field isolation withstands the documented 1000 V AC RMS or ± 1500 V DC level.
- Optical isolation prevents normal field potential from being carried directly into the control electronics.
- Hot removal and insertion must follow the plant procedure and hazardous-location restrictions for the installed cabinet.

Operating Environment

- Coated construction is intended for the specified Series 8 industrial control environment.
- The nine-inch assembly requires enclosure space and airflow matching the existing carrier arrangement.
- Field conductors must remain within approved insulation, temperature and terminal-current limits.

Critical technical note

De-energize field sources before rewiring 8C-TDILA1 51307141-175; several input groups can carry separate 24 V circuit potentials.

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