

8C-TDIL01

Series 8 Digital Input Sequence-of-Events IOTA

CONTROLLED ENGINEERING COPY

Match the IOTA to the assigned SOE processor and preserve field-channel identity; after installation, synchronize the event timebase and prove transition order.

INSTALLATION DATA	REQUIRED VALUE
Model / part	8C-TDIL01 / 51306856-175
System position	Series 8 IOTA carrier position
Matched processor	8C-PDIS01 or 8U-PDIS01
Field scope	32 discrete SOE input circuits
Hardware execution	Non-redundant, conformal coated, size code 9



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Pre-installation control matrix

CHECK	REQUIRED ARRANGEMENT	FIELD EVIDENCE
Identity	8C-TDIL01 / 51306856-175	Nameplate and work pack agree
Carrier position	Assigned Series 8 position	Position recorded before removal
Processor	8C-PDIS01 or 8U-PDIS01	Type and coating variant confirmed
Circuit count	32	Channel schedule covers installed points
Field interface	Discrete field contacts	Terminal tags and states recorded
Control context	C300 / Experion	Configured point assignment available

Isolation and handling checklist

☐ Place the affected process and trip logic in the approved maintenance state.

☐ Isolate field energy associated with the selected discrete circuits.

☐ Apply ESD controls before touching the IOTA, processor or carrier connectors.

☐ Record terminal identifiers, channel mapping and processor assignment.

☐ Inspect the carrier and connectors before fitting the replacement assembly.

PRE-WORK IDENTIFICATION BASIS	
CABINET / CARRIER POSITION	Assigned Series 8 carrier position
PROCESSOR MODEL / SLOT	8C-PDIS01 or 8U-PDIS01 SOE processor
ISOLATION REFERENCE	Approved work permit and field-energy isolation

Technical setup matrix

PARAMETER	VERIFIED VALUE
IOTA function	Digital input sequence of events
I/O circuits	32
Discrete input rating	24 VDC
DI power voltage range	18 to 30 VDC
Operating modes	Normal; Sequence of Events; Low Latency
Normal-mode PV scan	20 ms
Low-latency PV scan	5 ms
SOE time resolution	1 ms
Associated IOM current rating	95 mA
System-to-field isolation	1000 VAC RMS or +/-1000 VDC
Isolation technique	Optical, in IOM
ON sense threshold	13 VDC minimum or 3 mA minimum
OFF sense threshold	5 VDC maximum or 1.2 mA maximum

PARAMETER	VERIFIED VALUE
Input impedance	4.2 kOhm
Input filter and isolation delay	5 ms +/-20%
Guaranteed-ON field resistance	300 Ohm maximum at 15 VDC
Guaranteed-OFF field resistance	30 kOhm minimum at 30 VDC
Field-power selection	Internal or external
Input indication	Direct or reverse
Module removal/insertion under power	Supported
Coating	Conformal
Redundancy arrangement	Non-redundant
IOTA nominal size class	9 inch / 228 mm
Maximum stranded field wire	12 AWG / 2.5 mm2
Compatible modules	8C-PDIS01; 8U-PDIS01

Connection verification matrix

CHECK ITEM	ENGINEERING BASIS	ACCEPTANCE CRITERION
Field cable / multicore	24 VDC discrete circuits; labels retained	Point identity matches channel schedule
Terminal conductor	Up to 12 AWG / 2.5 mm2 stranded	Secure termination; no exposed conductor
Channel range	32 sequence-of-events input circuits	All assigned points mapped and responsive
Processor pairing	8C-PDIS01 or 8U-PDIS01	Matched SOE processor recognized
Carrier position	Assigned Series 8 IOTA location	Keying, seating and retention verified
Shield / grounding	Approved cabinet grounding plan	Continuity and segregation confirmed

CONNECTION CONTROL

Preserve the one-to-one relationship between field terminal, configured channel and SOE point. Do not transfer the channel schedule from a neighboring IOTA. Inspect seating and connector condition before restoring field energy.

Controlled commissioning sequence

NO.	PHASE	ENGINEERING ACTION	PASS CRITERION
1	Identity	Read full model and part marking	Correct assembly recorded
2	Hardware	Verify carrier seating and processor pairing	No connector or seating issue
3	Configuration	Restore documented channel assignment	Expected points online
4	Timebase	Confirm controller / server synchronization	SOE timestamps synchronized
5	Stimulus	Apply selected controlled contact transitions	Correct channel states change
6	Chronology	Compare generated transition order	Sequence retained correctly
7	Release	Review diagnostics and retain record	Acceptance signed

Fault-isolation matrix

OBSERVATION	CHECK	CONTROLLED RESPONSE
No input transition	Field energy / contact state / terminal map	Prove field state at assigned channel
Wrong channel changes	Terminal-to-channel identity	Compare wiring record with configured point
Events out of order	System time synchronization	Resynchronize and repeat controlled test
Processor diagnostic	IOTA seating and 8C-PDIS01 / 8U-PDIS01 pairing	Correct hardware assignment and retest

FINAL ACCEPTANCE CRITERIA

TESTED CHANNEL RANGE	All assigned circuits in the 32-point channel schedule
TIMEBASE RESULT	Synchronized timestamps; ordered transitions retained
DIAGNOSTIC STATE	No active IOTA, processor or channel diagnostic
HANDOVER RECORD	As-left configuration and controlled test result retained

Return-to-service checklist

HANDOVER ITEM	EVIDENCE	STATUS
Hardware identity	8C-TDIL01 / 51306856-175	Accepted / recorded
Processor pairing	8C-PDIS01 or 8U-PDIS01	Accepted / recorded
Field-channel identity	32-circuit schedule	Accepted / recorded
Event chronology	Controlled transition sequence	Accepted / recorded
Diagnostics	Final system state	Accepted / recorded

Related Series 8 products on Apter Power

MODEL	SERIES ROLE	APTER POWER PAGE
8C-PDIL51 51454359-175	Series 8 digital-input processor module	Open product page
8C-PDILA1	Series 8 digital-input processor module	Open product page
8C-PDOD51 51454361-175	Series 8 digital-output processor module	Open product page
8C-PDODA1 51454472-175	Series 8 24 Vdc digital-output module	Open product page
8C-TDODA1 51307149-175	Series 8 digital-output IOTA	Open product page
8C-TDODB1	Series 8 redundant digital-output IOTA	Open product page

Official source record

Honeywell PlantCruise by Experion Series 8 I/O Specification | PC03-490-100

Honeywell PlantCruise by Experion Series 8 I/O Modules | Product Information Note

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