

NWIO-01

Watchdog and Digital I/O Module

Supervised digital I/O and selectable watchdog output for ABB DriveBus and ACS 600 Special I/O systems.

PRODUCT SNAPSHOT

BRAND
ABB

FAMILY
ABB DriveBus / Special I/O

PART
NWIO-01

DOCUMENT STATUS
Controlled engineering copy

APTER POWER

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PRODUCT OVERVIEW

NWIO-01 provides supervised digital I/O and a selectable watchdog output for the documented ABB Special I/O ring.

-  Exact NWIO-01 / 64168533 identity
-  Two individually isolated digital inputs
-  Two relay outputs with selectable watchdog on DO2
-  DDCS Special I/O ring with NWIO1DI and NWIO1DO function blocks

RELATED APTER POWER PAGES		
 ABB TU835V1 3BSE013236R1	 ABB DSTY101 57120001-KY	 ABB DSAI110 57120001-DP
 ABB DSAI130 57120001-P	 ABB DSAI145 57120001-HA	 ABB DO630 3BHT300007R1
 ABB DSDX454 5716075-AT	 ABB DSBC174 3BSE012211R1	 ABB DSMB127 57360001-HG

SYSTEM COMPONENTS

DOCUMENTED COMPONENT	ROLE IN SYSTEM
NWIO-01 / 64168533 module	Matched CI858 or ACS 600 Special I/O host
Recorded DI and relay-output field circuits	DDCS ring, S1 address and X1 watchdog selection

ENGINEERING CONTEXT

The module remains matched to the installed AC 800M/CI858 DriveBus or ACS 600 Special I/O position, its DDCS ring address and the recorded field circuits. Commissioning preserves the installed topology and verifies every input, output and watchdog response.

TECHNICAL DATA

PARAMETER	VALUE	PARAMETER	VALUE
ABB item number	64168533	Relay capacity at 250 VAC	2000 VA
Module type	Watchdog and digital I/O option unit	Watchdog output	DO2 when selected
Digital inputs	2	Watchdog time	1 s default; 0.2 s via X1
Input voltage alternatives	24 VDC or 115/230 VAC	Function blocks	NWIO1DI and NWIO1DO
Input isolation	Individually isolated	Network	DDCS Special I/O fibre-optic ring
Input hardware filter	1 ms or 8 ms selectable	Device address	S1 switch; must match hardware-tree ID
Relay outputs	2	Task interval for 1 s watchdog	Below 100 ms
Maximum continuous relay current	2 A	Task interval for 0.2 s watchdog	Below 20 ms
Relay capacity at 24 VDC	8 A resistive	CI858 ring capacity	Up to 12 Special I/O units
Relay capacity at 120 VDC	0.4 A resistive	Ring data rate	Two dataset pairs per millisecond

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TECHNICAL NOTE

Treat NWIO-01 as the exact watchdog and digital I/O option unit for the documented Special I/O ring. Preserve S1 addressing, X1 watchdog-time selection, field-voltage class, relay-load limits and the optical-ring topology; then verify NWIO1DI/NWIO1DO diagnostics and controlled channel response.

APPLICATIONS & PRECAUTIONS

COMMON APPLICATIONS

AC 800M DriveBus watchdog supervision

Monitors the controller application, communication and optical Special I/O ring state.

ACS 600 Special I/O interface

Connects two documented digital inputs and two relay outputs through the DDCS ring.

Drive-system permissive and alarm logic

Uses isolated inputs and relay outputs with the recorded voltage and load classes.

Controlled maintenance replacement

Restores the exact S1 address, X1 selection, terminal map and fibre-optic topology.

PRODUCT PRECAUTIONS

1

Confirm NWIO-01 and ABB item number 64168533 on the module and maintenance record.

2

Place the controller, drive system and connected process in the approved maintenance state.

3

Isolate field power and the Special I/O ring before removing wiring or optical connections.

4

Record S1 device number, X1 watchdog-time selection, input voltage class and every terminal assignment.

5

Confirm each input uses the documented 24 VDC or 115/230 VAC circuit and the selected 1 ms or 8 ms

6

Confirm DO1 and DO2 loads remain within the documented relay ratings before reconnection.

7

Match the hardware-tree ID to S1, restore the DDCS ring and verify NWIO1DI/NWIO1DO diagnostics.

8

Test both inputs, both outputs and the selected 1 s or 0.2 s watchdog response before release.

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1

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ENGINEER FAQ

Q1 What function does NWIO-01 perform?

ABB identifies NWIO-01 as a digital I/O option unit with two digital inputs, two relay outputs and a watchdog function that can be assigned to DO2.

Q2 Which input voltage classes does NWIO-01 support?

The documented input alternatives are 24 VDC or 115/230 VAC; the installed execution and field wiring must be confirmed before connection.

Q3 How are the NWIO-01 inputs filtered and isolated?

Each input is individually isolated, and hardware filtering is selectable between 1 ms and 8 ms.

Q4 What relay-output limits apply to NWIO-01?

ABB documents two relay outputs, 2 A maximum continuous current, 8 A at 24 VDC resistive, 0.4 A at 120 VDC resistive and 2000 VA at 250 VAC.

Q5 How is the NWIO-01 watchdog assigned to DO2?

A slide switch connects the watchdog logic to DO2; software can otherwise control DO2 when the watchdog assignment is not selected.

Q6 Which watchdog times and task intervals apply?

The default watchdog time is 1 s, with 0.2 s selected at X1. ABB requires task execution below 100 ms for 1 s and below 20 ms for 0.2 s.

Q7 How is NWIO-01 addressed on the Special I/O ring?

Set the device number with S1 and configure the same ID in the hardware tree before restoring the DDCS fibre-optic ring.

Q8 What evidence accepts NWIO-01 after installation?

Retain the exact identity, S1 and X1 settings, terminal map, DDCS-ring restoration, NWIO1DI/NWIO1DO diagnostics and controlled tests of DI1, DI2, DO1, DO2 and the watchdog.

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SOURCE ABB AC 800M DriveBus 2PAA113566-600 and ACS 600 MultiDrive System Description 3AFY 63700151 R0325 | ABB official DriveBus and ACS 600 documentation
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