

NWIO

NWIO-01 Watchdog & I/O is a digital I/O option unit. It contains a watchdog logic for supervising the operation of the AC 800M and the CI858 software. The unit has two digital inputs (24 VDC or 115/230 VAC) and two digital outputs. Using a slide switch on the top of the unit, the watchdog logic can be connected to control the state of the digital output DO2.

The watchdog supervises the following operations of the CI858:

- Functioning of the CI858 application program.
- Communication over the dual port memory.
- Functioning of the CI858 operative system.
- Communication on the optical I/O ring.

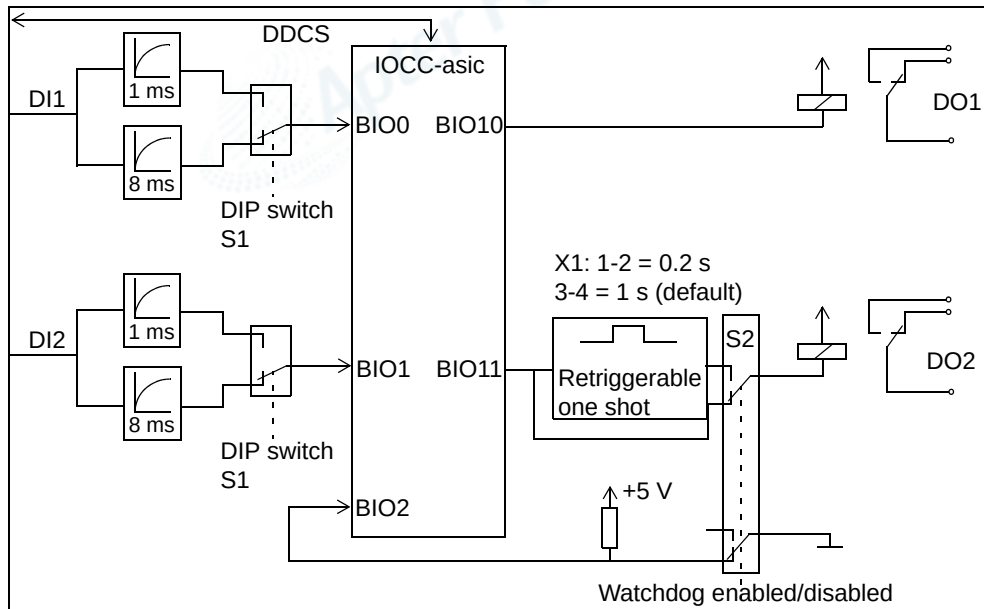


Figure 16. Simplified block diagram of the NWIO-01 unit.

There are two function blocks for handling the NWIO-01 unit: NWIO1DI and NWIO1DO.

NWIO1DI

Function block NWIO1DI is used for reading digital input signals from the NWIO-01 unit.

The actual selection of the I/O unit is made in the Control Builder's hardware editor by connecting respective channels of the NWIO unit to input signals 5...8 (inword1... UnitStatus). See [Table 35](#) and [Connections](#) on page 44.

Table 35. Input and output signals of NWIO1DI.

No	Name	Direction	Data type	Description
1	DI1	out	bool	Output for digital input DI1.
2	DI2	out	bool	Output for digital input DI2.
3	WD_STAT	out	bool	Selection of WatchDog function. 0 = not selected, 1 = selected
4	ERR	out	bool	Communication status. 1 = Error See Output Error on page 84.
5	Inword1	in	dint	First input word of DS 100 (R).
6	Inword2	in	dint	Second input word of DS 100 (R).
7	Inword3	in	dint	Third input word of DS 100 (R).
8	UnitStatus	in	dint	Unit status.

NWIO1DO

Function block NWIO1DO is used for writing digital output signals to the NWIO-01 unit.

The actual selection of the I/O unit is made in the Control Builder's hardware editor by connecting respective channels of the NDIO unit to input and output signals 5...9 (outword1... UnitStatus). See [Table 36](#) and [Connections](#) on page 44.

Table 36. Input and output signals of NWIO1DO.

No	Name	Direction	Data type	Description
1	DO1	in	bool	Input for digital output DO1
2	DO2	in	bool	Input for digital output DO2.
3	WD_SEL	in	bool	Selection of the DO2 operation mode. DO2 can be used as normal software controlled digital output or as a watchdog output.
4	ERR	out	bool	Communication status. See Output Error on page 84.
5	outword1	out	dint	First output word of DS 100 (R/W).
6	outword2	out	dint	Second output word of DS 100 (R/W).
7	outword3	out	dint	Third output word of DS 100 (R/W).
8	inword1_dummy	in	dint	First input word (=dummy) of DS 100 (R/W).
9	UnitStatus	in	dint	Unit status

Digital output DO2 can be used as a normal software controlled digital output or as a watchdog output. The operation mode is selected with the WATCHDOG ENABLED / DISABLED switch on the top of the unit and with input signal WD_SEL. In watchdog mode, a retriggerable one shot circuit is connected between the software controlled output and the actual output relay. Changing the state of digital output DO2 refreshes the one shot circuit (software oscillator is made by the inverter element).

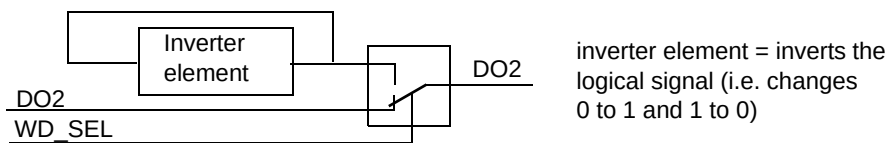


Figure 17. Watchdog operation.

The factory setting of the watchdog time constant is 1 s but it can be shortened to 0.2 s with jumper X1 inside the unit (X1, pins 1-2 = 0.2 s; pins 3-4 = 1 s).

The cycle time of the oscillator is $2 \times$ execution interval of the NWIO1DO. The cycle time must be fast enough compared with the time constant selection in the NWIO-01 unit.

Time constant 1 s: Execution interval of the task ≤ 100 ms, thus the cycle time of the oscillator is ≤ 200 ms.

Time constant 0,2 s: Execution interval of the task ≤ 20 ms, thus the cycle time of the oscillator is ≤ 40 ms.

NCTI

For information about the NCTI-01 Crane Transducer Interface see *Crane transducer Interface User's manual [3ASC23F207 (English)]*.

NDSC

NDSC-01 is the control board of the ACS600 Diode Supply Unit. For more information see *ACA 631/633 Diode Supply Section User's Manual [3AFY 61451544 (English)]*.

Configuration of the NDSC board is similar to the configuration of a drive.