ABB Service Manual

07DC91

1. Description

ABB Digital Input/Output Module 07 DC 91

2. Specifications

Specification	Value
inputs	and outputs.
The	operating voltage of the module is 24 V DC.
The	system bus connection is electrically isolated from
the	rest of the unit.
The	module offers a number of diagnosis functions (see
chapter	"Diagnosis and displays").
Displays	and operating elements on the
front	panel
1	16 green LEDs to indicate the signal status at the
inputs,	
16	yellow LEDs to indicate the signal status at the
outputs	or at the configurable inputs/outputs
2	List of diagnosis information related to the LEDs,
when	used for diagnosis display
3	Red LED for error message
4	Test button
Electrical	connection
The	module is mounted on a DIN rail (15 mm high) or with
4	screws. The following illustration shows the electrical
connection	of the input/output module.
Number	of channels per unit 16
Distribution	of channels in groups 2 groups of 8 channels each,
channels	En,00...En,07, and En,08...En,15
Reference	potential for all inputs Terminals 24/25 (minus pole of supply voltage,
terminal	M)
Electrical	isolation

3. Product Information

ABB Digital Input/Output Module 07 DC 91

16 digital inputs, 8 digital outputs, 8 configurable

inputs/outputs, 24 V DC, CS31 system bus

Intended purpose

The digital input/output module 07 DC 91 is used as a

remote module on the CS31 system bus. It has 32 channels with the following features:

• 16 inputs, 24 V DC, in two groups.

• 8 outputs, 24 V DC, in one group.

The outputs

• work with transistors,

• have a rated load capacity of 0.5 A and

• are protected against overload and short circuits.

• 8 inputs/outputs, each of which can be addressed

• as input,

• as output or

• as re-readable output

(combined input/output)

4.7 Digital Input/Output Module 07 DC 91

16 digital inputs, 8 digital outputs, 8 configurable

inputs/outputs, 24 V DC, CS31 system bus

The technical data are identical with the normal

inputs and outputs.

The operating voltage of the module is 24 V DC.

The system bus connection is electrically isolated from

the rest of the unit.

The module offers a number of diagnosis functions (see

chapter "Diagnosis and displays").

Displays and operating elements on the

front panel

1 16 green LEDs to indicate the signal status at the

inputs,

16 yellow LEDs to indicate the signal status at the

outputs or at the configurable inputs/outputs

2 List of diagnosis information related to the LEDs,

when used for diagnosis display

3 Red LED for error message

4 Test button

Electrical connection

The module is mounted on a DIN rail (15 mm high) or with

4 screws. The following illustration shows the electrical

connection of the input/output module.

Permissible temperature range during operation 0...55 °C

Rated supply voltage 24 V DC

Rated signal voltage for inputs and outputs 24 V DC

Max. current consumption without load 0.15 A

Max. rated load for supply terminals 4.0 A

Max. power dissipation in module (outputs without load) 5 W

Max. power dissipation in module (outputs under load) 10 W

Protection against reversed polarity of power connection yes

Conductor cross section

for removable connectors

power input max. 2.5 mm2

CS31 system bus max. 2.5 mm2

signal terminals max. 1.5 mm2

Number of binary inputs 16

Number of binary transistor outputs 8

Number of configurable inputs and outputs 8

Reference potential for all inputs and outputs Terminals 24/25 (minus pole of supply voltage,

terminal M)

Number of interfaces 1 CS31 system bus interface
Electrical isolation CS31 system bus interface
against the rest of the unit
Address setting Coding switch under the slide cover located on the right
side of the housing
Diagnosis see chapter "Diagnosis and displays"
Operation and error messages a total of 33 LEDs
Technical data of the digital inputs
Number of channels per unit 16
Distribution of channels in groups 2 groups of 8 channels each,
channels En,00...En,07, and En,08...En,15
Reference potential for all inputs Terminals 24/25 (minus pole of supply voltage,
terminal M)
Electrical isolation from CS31 system bus
Input delay typ. 7 ms
Signalization of input signals one green LED per channel,
LED activated according to the input signal
Input signal voltage 24 V DC
0 signal - 30 V...+ 5 V
1 signal + 13 V...+ 30 V
residual ripple at 0 signal within - 30 V...+ 5 V
at 1 signal within + 13 V...+ 30 V
Input current per channel
Input voltage = + 24 V typ. 7.0 mA
Input voltage = + 5 V > 1.0 mA
Input voltage = + 13 V > 2.0 mA
Input voltage = + 30 V < 9.0 mA
Conductor cross section
for removable connectors max. 1.5 mm2
(grid space 3.81 mm)
Technical data of digital outputs
Number of channels per unit 8 transistor outputs
Distribution of channels in groups 1 group of 8 channels
channels An,00...An,07
Reference potential for all inputs Terminals 24/25 (minus pole of supply voltage,
terminal M)
Common voltage supply terminals
for all outputs Terminals 22/23 (plus pole of supply voltage,
terminal L+)
Electrical isolation from CS31 system bus
Signalization of output signals one yellow LED for each channel,
LED activated according to output signal
Output current
nominal value 500 mA at L+ = 24 V
maximum value 4 A total current per group
leakage current at 0 signal < 0.5 mA
De-magnitization during inductive load via internal varistor
Switching frequency at inductive load max. 0.5 Hz
Switching frequency with lamps max. 11 Hz at max. 5 W
Protection against short-circuit/overload yes
overload message (I > 0.7 A) yes, after approx. 100 ms
limiting of output current yes
reactivation after short-circuit/overload automatically
Resistance to feedback against 24V signals yes
Total load current (including output current of configured
inputs and outputs) max. 8 A
Conductor cross section
for removable connectors max. 1.5 mm2
(grid space 3.81 mm)

Technical data of configurable inputs and outputs

The configuarable channels are defined individually by the user program as either inputs or outputs. This is done by reading or writing data to/from the respective channel.

Number of channels per unit 8 inputs / transistor outputs

Distribution of channels in groups 1 group of 8 channels

when using channels as inputs channels En+1,00...En+1,07

when using channels as outputs channels An,08...An,15

Signalization of input and output signals one yellow LED per channel, LED activated according to binary signal

Technical data when used as outputs refer to digital outputs

Technical data when used as inputs

Input current per channel refer to digital inputs

Input signal voltage 24 V DC

0 signal - 6 V...+ 5 V *

1 signal + 13 V...+ 30 V

residual ripple at 0 signal within - 6 V...+ 5 V *

at 1 signal within + 13 V...+ 30 V

Mounting to DIN rail according to DIN EN 50022-35, 15 mm deep. The DIN rail is centrally positioned between upper and lower edges of the module.

Mounting with screws by 4 screws M4

Width x height x depth 120 x 140 x 85 mm

Connector removable connectors with screw-type terminals

conductor cross section max. 2.5 mm2

(grid space 5.08 mm)

max. 1.5 mm2

(grid space 3.81 mm)

Weight 450 g

Dimensions for installation refer to figure on next page

Installation instructions

Installation position vertical with connectors pointing up and down

Cooling The natural convection cooling must not be hindered by cable ducts or other additional components installed in the cabinet.

Ordering data

Module 07 DC 91 Order No. GJR5 2514 00 R0202

Scope of delivery Digital input/output module 07 DC 91

1 5-pin connector (grid space 5.08 mm)

1 3-pin connector (grid space 5.08 mm)

4 9-pin connectors (grid space 3.81 mm)