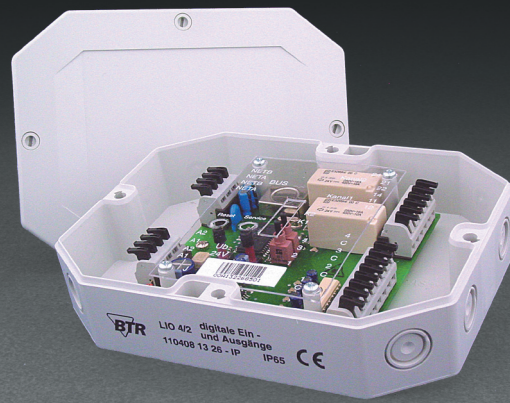


LON digital I/O modules



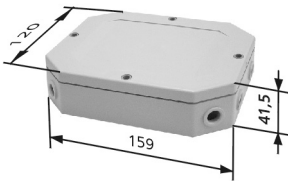
LIO 4/2 IP65

24 V AC/DC, 4 digital inputs, 2 relay outputs

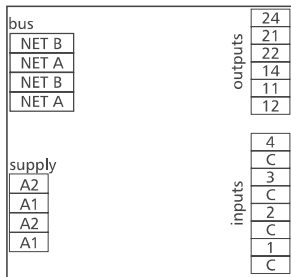
Part Number

110 408 13 26-IP

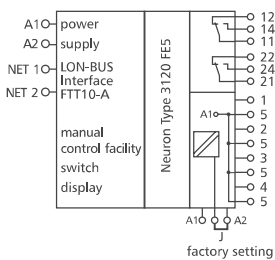
Dimensions - IP65 housing



Wiring



Wiring Diagram



Use

LON I/O module with 4 digital inputs and 2 relay outputs. Suitable for example to take up light switches and window contacts in a room and to switch two batten luminaires or control window blinds. Or, besides other applications it can control two motor driven fire protection valves.

For high inductive loads it is recommended to protect the relay contacts additionally by a RC element.

Functional description

The inputs can be operated as contact and voltage inputs (A1, 24 VAC/DC, jumper J - A2) or with actuation to GND (A2, jumper J - A1), depending on the position of the jumper J (under the cover plate). In a LON installation these data points can be bound individually or as a whole. The lamp load relays are provided with a manual control, that is only activated in the "Configured Mode", and furthermore with an adjustable wipe function.

LON interface

transceiver	FTT10A free topology
neuron	3120, 3k EEPROM
data format	standard network variables (SNVT)
transmission rate	78 kBit/s
max. length (see page 7)	
line topology	2700 m / 64 nodes
free topology	500 m / 64 nodes
cabling	twisted pair

Application software

XIF and NXE files are available as downloads under www.btr-electronic-systems.de.

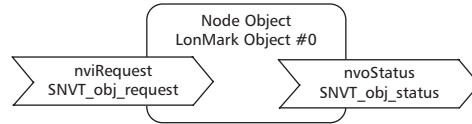
Technical data

Housing	dimensions w*h*l weight mounting position mounting material	159 x 41.5 x 120 mm 330 g any directly to a smooth surface housing ASA+ polycarbonate terminal blocks polyamide cover polycarbonate IP65
Terminal blocks	type of protection (DIN 40050) supply and bus digital inputs and outputs	IP65 1.5 mm ² pluggable 1.5 mm ² pluggable
Supply	operating voltage range current consumption duty cycle recovery time	20 ... 28 V AC/DC 220 mA (AC) / 90 mA (DC) 100 % 550 ms
Output	output contact switching voltage making/breaking current max. nominal current total current for all contacts contact fuse mechanical endurance electrical endurance permissible switching frequency	2 changeover contacts 250 V AC 80 A 10 A max. 30 A max. 10 A 30 x 10 ⁶ cycles 9 x 10 ⁴ cycles 6 / min. at nominal current
Temperature range	operation storage	-5 °C ... +55 °C -20 °C ... +70 °C
Protective circuitry	operating voltage	polarity reversal protection
Display	operation function input status output status	green LED yellow LED for status (service) yellow LEDs yellow LEDs

LON digital I/O modules

Description of the LonMark objects and network variables

LIO 4/2
LIO 4/2 IP65



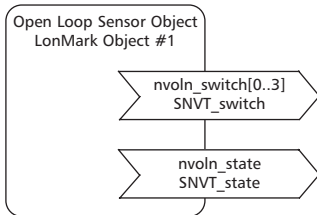
Node Object

The Node Object monitors and controls the functions of the different objects in the device. It supports the basic functions Object-Status and Object-Request required by LonMark.

Application Objects

These objects contain the functions status record of the digital inputs, setting of the digital outputs and data exchange.

Digitalln Object



Digitalln Object

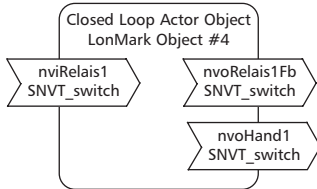
nvoln_switch[0..3] (index 2..5)

SNVT type SNVT_switch
Function Status of the inputs. The output variables are issued at a change of the input status, at the end of the preset obligatory update time (nciMinSendTime) or at a module reset.
Closed contact nvoln_switch[0..3] = 100.0 1
Open contact nvoln_switch[0..3] = 0.0 0

nvoln_state (index 6)

SNVT type SNVT_state
Function Status of all inputs. The output variable is issued at a change of the input status, at the end of the preset obligatory update time (nciMinSendTime) or at a module reset.
Assignment nvoln_state.bit0 = input 1 ... nvoln_state.bit3 = input 4
Closed contact nvoln_state.bit[0..3] = 1
Open contact nvoln_state.bit[0..3] = 0

R1 and R2 Object



R1 and R2 Object

nviRelais[1..2] (index 7,8)

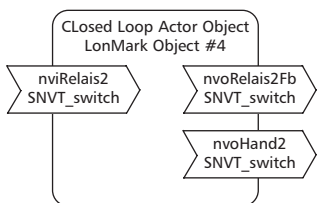
SNVT type SNVT_switch
Function switching of the outputs
nviRelais[1..2] = 100.0 1 relays activated
nviRelais[1..2] = 0.0 0 relays released

nvoRelais[1..2]Fb (index 10,11)

SNVT type SNVT_switch
Function The output variables are issued at a change of the relay status.
nvoRelais[1..2]Fb = 100.0 1 relays activated
nvoRelais[1..2] = 0.0 0 relays released

nvoHand[1..2] (index 9,12)

SNVT type SNVT_switch
Function manual feedback
nvoHand[1..2] = 100.0 1 manual switch on automatic mode
nvoHand[1..2] = 0.0 0 manual switch on "1" or "0"



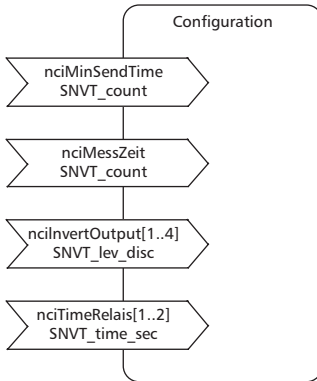
LON digital I/O modules

Description of the LonMark objects and network variables

LIO 4/2

LIO 4/2 IP65

Configuration Variables



Configuration Variables

nciMinSendTime (index 11)

SNVT type SNVT_count
 Function All output variables described above are issued even without status change at the end of a preset period of time. Thus the device reports periodically to the system.
 Time settings 0 timer turned off
 1 .. 60 timer time in seconds (factory setting 0)

nciMessZeit (measuring time) (index 12)

SNVT type SNVT_count
 Function The status of the inputs are scanned within the preset time. Then the output variables nvoln_switch and nvoln_state are set and issued at the end of the preset update time (nciMinSendTime).
 Measuring time settings 120 .. 60000 measuring time in ms (factory setting 120)

nciInvertOutput[1..4] (index 13..16)

SNVT type SNVT_lev_disc
 Function
 nciInvertOutput[1..4] = ST_ON open input contact; nvoln_switch and/or nvoln_state = set
 nciInvertOutput[1..4] = ST_OFF closed input contact; nvoln_switch and/or nvoln_state = set

nciTimeRelais[1..2] (index 17, 18)

SNVT type SNVT_time_sec
 Function Wipe function. With a preset time and nviRelais[1..2] = 100.0 1 the respective relay releases automatically. It is only reactivated if nviRelais[1..2] is set from 0.0 0 to 100.0 1. The wipe function is turned off during manual operation.
 Wipe settings 0 wipe function turned off
 0,1 .. 6553,4 s