LON digital I/O modules

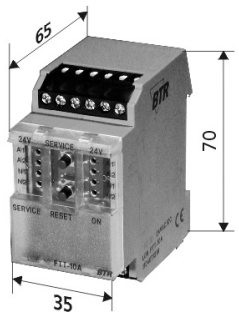
LDM 4/4, LDM FT 4/4

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

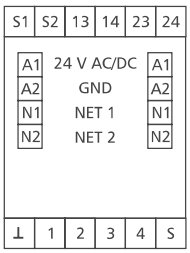
Part Number

110 410 13 26	**LDM 4/4**
110 416 13 26	**LDM FT 4/4**

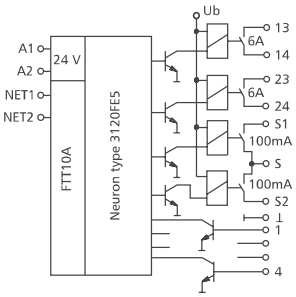
Dimensions - C12 housing



Wiring



Wiring Diagram



Use

LON I/O module with 4 digital inputs, 2 relay outputs and 2 digital outputs. Suitable to interrogate for example switching status and to switch motors or other actors as a result.
For high inductive loads it is recommended to protect the relay contacts additionally by a RC element.

Functional description

In a LON installation the two relay and the two digital outputs can be individually activated by the standard network variables. The digital outputs have a common root. Potential free switches or contacts are assigned to the digital input contacts 1 to 4 and contacts ⊥ in a two pole connection. The device is provided with an additional wipe function.

LON interface

transceiver	FTT10A free topology
neuron	
LDM 4/4	3120, 3k EEPROM
LDM FT 4/4	3150
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.**

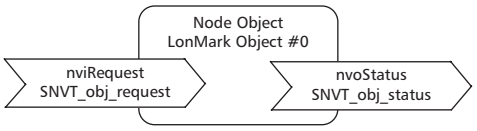
Technical data

Housing	dimensions w*h*l	35 x 70 x 65 mm	
	weight	90 g	
	mounting position	any	
	mounting	DIN rail according to EN 50022	
	material	housing + terminal blocks polyamide V0 cover plate polycarbonate	
	type of protection (DIN 40050)	housing IP40 terminal blocks IP20	
Terminal blocks	supply and bus	pluggable terminal block 1,5 mm² (terminal block and jumper plug are included to each packing unit)	
	digital inputs and outputs	2.5 mm²	
Supply	operating voltage range	20 ... 28 V AC/DC	
	current consumption	200 mA (AC) / 65 mA (DC)	
	duty cycle	100 %	
	recovery time	550 ms	
Output	output contact	2 NO contacts	2 NO contacts
	contact material	AgNi	PhotoMOSRelais
	switching voltage	250 V AC	40 V AC/DC
	nominal current	6 A	100 mA
	contact fuse	6 A	100 mA
	mechanical endurance	30 x 10^6 cycles	--
	electrical endurance	5 x 10^5 cycles	--
	permissible switching frequency	6 / min at nominal current	--
Temperature range	operation	-5 °C ... +55 °C	
	storage	-20 °C ... +70 °C	
Protective circuitry	operating voltage	polarity reversal protection	
Display	operation	green LED	
	function	yellow LED for status (service)	
	output status	yellow LEDs	
Note	The modules can be mounted in series without interspace. The max. number of modules connected in series is 15, each group needs an external power supply.		

LON digital I/O modules

Description of the LonMark objects and network variables

LDM 4/4



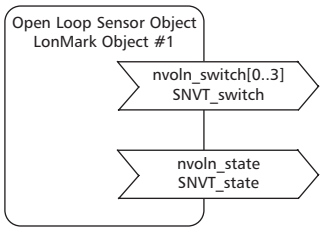
Node Object

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 and data exchange.

DigitalIn Object



DigitalIn Object

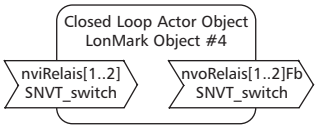
nvoIn_switch[0..3] (index 2..5)

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 MinSendTime and at a module reset.
Closed contact	nvoIn_switch[0..3] = 100.0 1
Open contact	nvoIn_switch[0..3] = 0.0 0

nvoIn_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 MinSendTime and at a module reset. nvoIn_state.bit0 is assigned to input 1 … nvoIn_state.bit3 to input 4
Closed contact	nvoIn_state.bit[0..3] = 1
Open contact	nvoIn_state.bit[0..3] = 0

Relais Object



Relais Object

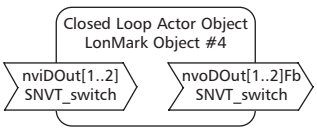
nviRelais[1..2] (index 7,8)

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 9,10)

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

DigitalOut Object



DigitalOut Object

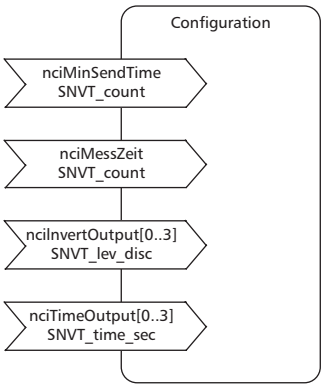
nviDOut[1..2] (index 11,12)

SNVT type	SNVT_switch
Function	Switching of the outputs
nviDOut[1..2] = 100.0 1	digital output activated
nviDOut[1..2] = 0.0 0	digital output released

nvoDOut[1..2]Fb (index 13,14)

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

Configuration Variables



Configuration Variables

nciMinSendTime (index 15)

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 16)

SNVT type	SNVT_count
Function	The status of the inputs are scanned within the preset time. Then the output variables nvoIn_switch and nvoIn_state are set and issued at the end of the preset MinSendTime.
Measuring time settings	120 .. 60,000 measuring time in ms (factory setting 120)

nciInvertOutput[0..3] (index 17..20)

SNVT type	SNVT_lev_disc
Function	
nciInvertOutput[0..3] = ST_ON	open input contact; nvoIn_switch and/or nvoIn_state = set
nciInvertOutput[0..3] = ST_OFF	closed input contact; nvoIn_switch and/or nvoIn_state = set

nciTimeOutput[0..3] (index 21..24)

SNVT type	SNVT_time_sec
Function	Wipe function. With a preset time and nviRelais[1..2] and/or nviDOut[1..2] = 100.0 1 the respective digital output releases automatically. It is only reactivated if nviRelais[1..2] and/or nviDOut[1..2] is set from 0.0 0 to 100.0 1.
Wipe settings:	0 wipe function turned off (factory setting 0) 0.1 .. 6553.4 s