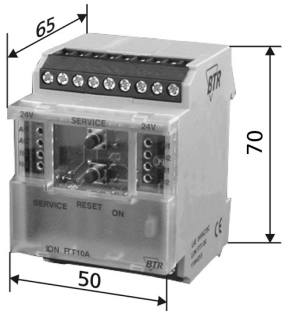
LON digital I/O modules

LDP

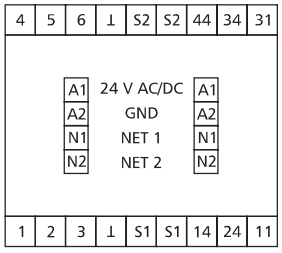
24 V AC/DC, 6 digital inputs, 2 digital outputs
2 two-stage relay outputs

Part Number
110 444 13

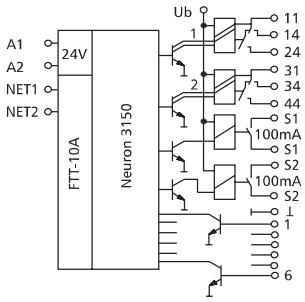
Dimensions - C18 housing



Wiring



Connection Diagram



Use

LON three point module with 6 digital inputs, 2 two-stage relay outputs and 2 digital outputs. It is suited to operate multi-stage pumps, fans, burners or similar devices. **For high inductive loads it is recommended to protect the relay contacts additionally by a RC element.**

Functional description

Potential free switches or contacts are assigned to the digital inputs 1 to 6 and contacts ⊥ in a two pole connection. In a LON installation these data points can be bound individually or as a whole. The relays are provided with a manual control facility.

LON interface

transceiver	FTT10A free topology
neuron	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.**

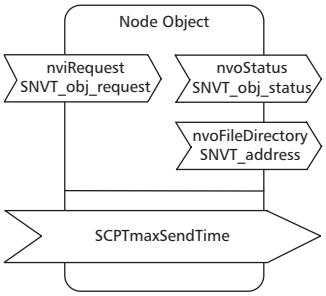
Technical Data

Housing	dimensions w*h*l	50 x 70 x 74 mm
	weight	126 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	220 mA (AC) / 90 mA (DC)
	duty cycle	100 %
	recovery time	550 ms
Output	output contact	2 x two-stage 2 x 40 V AC/DC 100 mA
	switching voltage	250 V AC
	nominal current	6 A
	mechanical endurance	30 x 10^6 switching cycles
	electrical endurance	9 x 10^4 switching 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

LDP



Node Object

nviRequest NVT_obj_request
nvoStatus SNVT_obj_status
nvoFileDirectory SNVT_address

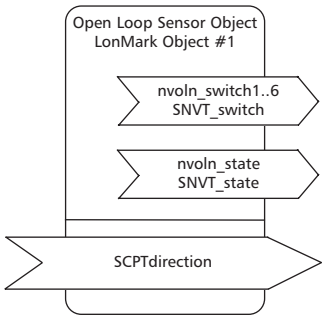
The Node Object monitors and controls the functions of the different objects in the device. It supports the basic functions Object-Status and Object-Request required by LonMark.

SCPTmaxSendTime **SNVT_time_sec**

All output variables described below are issued at the end of the preset period of time even without a status change.

Time settings 0 timer turned off
6553,8 s (factory setting 60 s)

DigitalIn Object



DigitalIn Object

nvoIn_switch1..6 (Index 3..8)

SNVT Type	SNVT_switch
Function	Status of the inputs.
closed contact	nvoIn_switch1..6 = 100,0 1
open contact	nvoIn_switch1..6 = 0,0 0

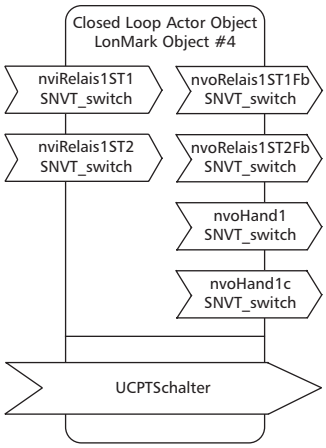
nvoIn_state (Index 9)

SNVT Type	SNVT_state
Function	Status of all inputs
Assignment	nvoIn_state.bit0 = input 1 ... nvoIn_state.bit5 = input 6
closed contact	nvoIn_state.bit0..5 = 1
open contact	nvoIn_state.bit0..5 = 0

SCPTdirection

SNVT Type	SNVT_state
Function	Inversion of the input message.
SCPTdirection.bit0..5 = 0	input contact is closed; nvoIn_switch bzw. nvoIn_state = gesetzt
SCPTdirection.bit0..5 = 1	input contact is open; nvoIn_switch bzw. nvoIn_state = gesetzt

Kanal1 Object



Kanal1 Object

nviRelais1ST1..2 (Index 10,11)

SNVT Type	SNVT_switch
Function	Switching of the outputs.
nviRelais1ST1 = x 1	relay contact 11-14 is closed
nviRelais1ST2 = x 1	relay contact 11-24 is closed
nviRelais1ST1 = x 0	relay contact 11-14 is open
nviRelais1ST2 = x 0	relay contact 11-24 is open

nvoRelais1ST1..2Fb (Index 12,13)

SNVT Type	SNVT_switch
Function	Status message of the relays.
nvoRelais1ST1Fb = 0.0 0	relay contact 11-14 is open
nvoRelais1ST1Fb = 100.0 1	relay contact 11-14 is closed
nvoRelais1ST2Fb = 0.0 0	relay contact 11-24 is open
nvoRelais1ST2Fb = 100.0 1	relay contact 11-24 is closed

nvoHand1 (Index 14)

SNVT Type	SNVT_switch
Function	Manual feedback.
nvoHand1 = 100,0 1	manual control switch in automatic mode
nvoHand1 = 0,0 0	manual control switch in manual mode

nvoHand1c (Index 15)

SNVT Type	SNVT_count
Function	The values reflect the current switch positions.
nvoHand1c = 0	position 0
nvoHand1c = 1	position 1
nvoHand1c = 2	position 2
nvoHand1c = 3	automatic position

UCPTSchalter

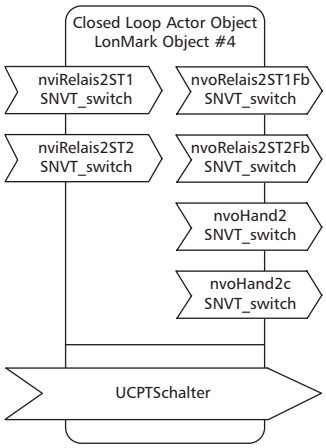
SNVT Type	SNVT_count
Function	Sequence of manual control switch
UCPTOnOff = ST_OFF	sequence 0 - 1 - 2 (factory setting)
UCPTOnOff = ST_ON	sequence 1 - 0 - 2

LON digital I/O modules

Description of the LonMark objects and network variables

LDP

Kanal2 Object



Kanal2 Object

nviRelais2ST1..2 (Index 16,17)

SNVT Type	SNVT_switch
Function	Switching of the outputs.
nviRelais2ST1 = x 1	relay contact 31-34 is closed
nviRelais2ST2 = x 1	relay contact 31-44 is closed
nviRelais2ST1 = x 0	relay contact 31-34 is open
nviRelais2ST2 = x 0	relay contact 31-44 is open

nvoRelais2ST1..2Fb (Index 18,19)

SNVT Type	SNVT_switch
Function	Status message of the relais.
nvoRelais2ST1Fb = 0.0 0	relay contact 31-34 is open
nvoRelais2ST1Fb = 100.0 1	relay contact 31-34 is closed
nvoRelais2ST2Fb = 0.0 0	relay contact 31-44 is open
nvoRelais2ST2Fb = 100.0 1	relay contact 31-44 is closed

nvoHand2 (Index 20)

SNVT Type	SNVT_switch
Function	Manual feedback.
nvoHand2=100,0 1	manual control switch in automatic mode
nvoHand2=0,0 0	manual control switch in manual mode

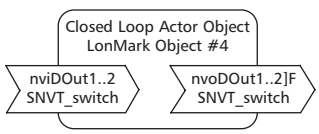
nvoHand2c (Index 21)

SNVT Type	SNVT_count
Function	The values reflect the current switch position.
nvoHand2c = 0	position 0
nvoHand2c = 1	position 1
nvoHand2c = 2	position 2
nvoHand2c = 3	automatic position

UCPTSchalter

SNVT Typ	SNVT_count
Function	Sequence of manual control switch
UCPTOnOff = ST_OFF	sequence 0 - 1 - 2 (factory setting)
UCPTOnOff = ST_ON	sequence 1 - 0 - 2

DigitalOut Object



DigitalOut Object

nviDOut1..2 (Index 22,23)

SNVT Type	SNVT_switch
Function	Switching of the digital outputs.
nviDOut1..2 = x 1	contact pair S1-S1 or S2-S2 is closed
nviDOut1..2 = x 0	contact pair S1-S1 or S2-S2 is open

nvoDOut1..2Fb (Index 24,25)

SNVT Type	SNVT_switch
Function	Zustandmeldung der digitalen Ausgänge.
nviDOut1..2 = 100.0 1	contact pair S1-S1 or S2-S2 is closed
nviDOut1..2 = 0.0 0	contact pair S1-S1 or S2-S2 is open