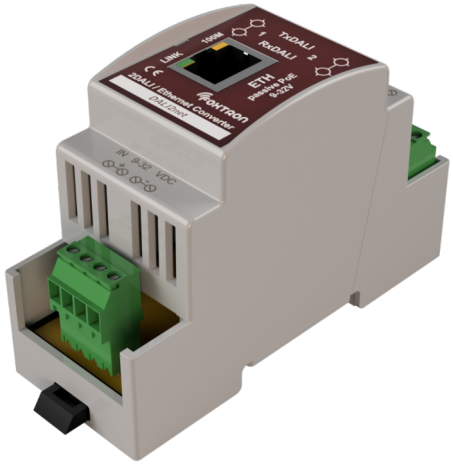
User manual

version 1.1

DALI2net

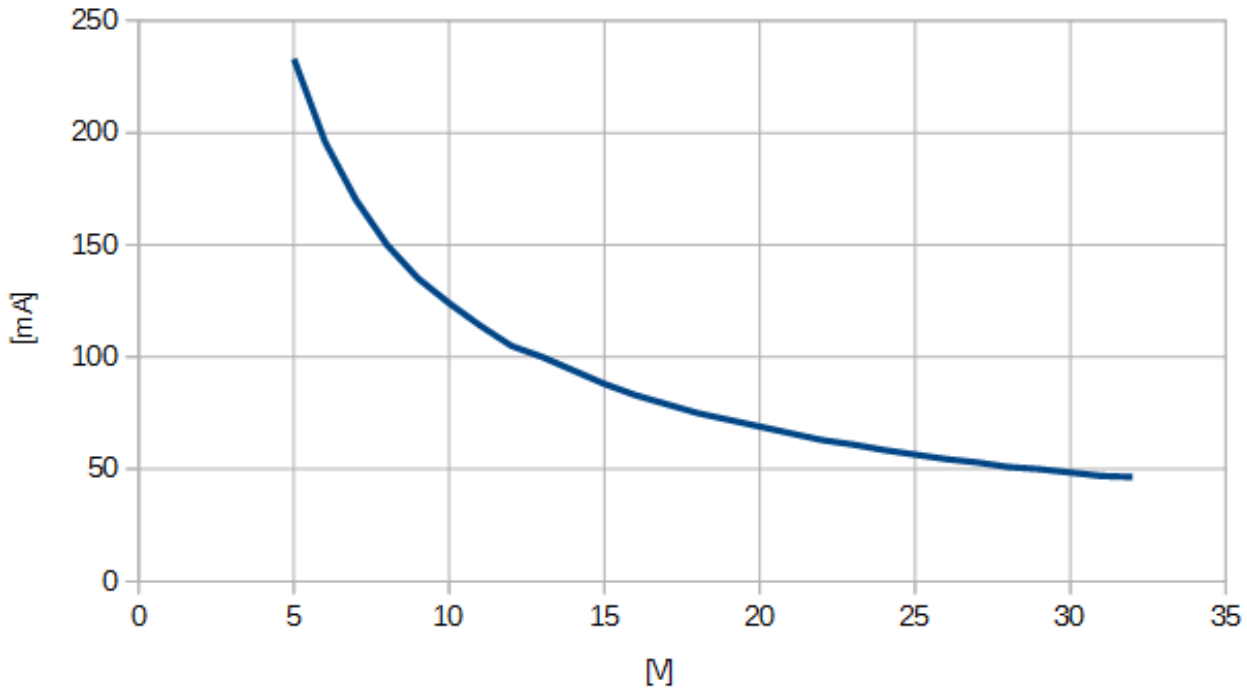


2 x DALI / Ethernet converter
Power supply passive PoE or 9-32V
Indication of communication on the DALI bus
Galvanic separation DALI/ETH
DIN rail mount (2 modules)

DALI2net is converter from DALI bus to Ethernet (TCP/IP). This converter can be powered using passive PoE Ethernet data cable or by power supply connected to the terminals.

Technical specification		
bus	DALI / Ethernet	
speed (ETH)	10/100M	
protocol (ETH)	TCP/IP	
Power supply	9-32	V
Power consumption	1,5	W
	50-150 (power supply 32-9V)	mA
Maximum power loss	1,5	W
Power consumption (from DALI bus)	1,2	mA
Wires cross section	0,08 – 1,5	mm^2
Ingress protection rating	IP20	
Galvanic isolation DALI/ETH	4	kV
Working ambient temperature	0 ÷ 50	°C
Storage temperature	-10 ÷ 50	°C
weight	80	g

Consumption depending on voltage supply



Function

DALI2net supports two protocols. Simple **ASCII** protocol and **Modbus**. Both protocols are available at once.

ASCII protocol

Communication with DALI2net converter is done by serial line RS232 using simple ASCII protocol. This protocol is described in separate datasheet which is downloadable on www.foxtron.eu.
Through the agency of the converter DALI2net is control device able to send and receive messages on DALI bus. Except of standard messages user messages with various length can be sent and received.
DALI2net supports Multimaster communication (more master devices can communicate on DALI bus). Control device can send data at any time and collisions are solved by DALI2net converter.

DALI2net sends to control device all communication on DALI bus. Answers on DALI bus are sent to RS232 in one message together with appropriate query, even in case, that the query was sent by another device.
Control device is automatically informed about collisions on DALI bus (framing error) and other states (for example: short connection or main voltage on the DALI bus).

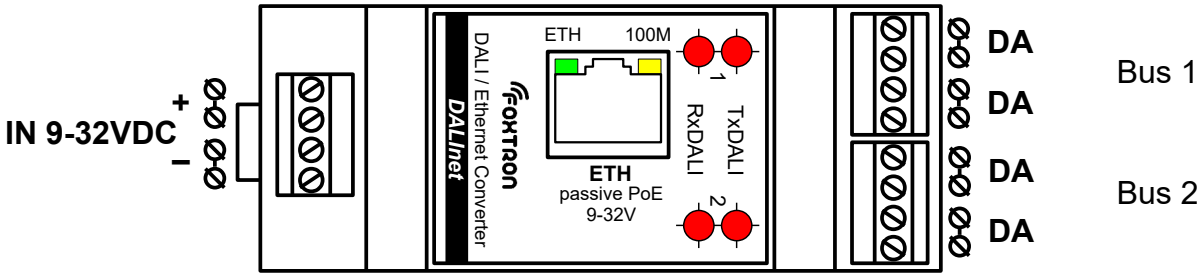
MODBUS

Using MODBUS TCP it is possible to command lights on the DALI bus. Controlled can be standard DALI ballasts and also extension for color management (RGB/RGBW) and color temperature (Tc) – DALI type 8.
To write values to DALI2net, MODBUS function 16 (0x10) “Write multiple registers” is used. Choosing a register selects for which type of light will messages be send. Registers 1-162 are for standard DALI, 163-810 for DALI type 8 (color control).
By selecting a register can be determined message addressing on DALI. They can be sent as a Broadcast (to all units), to Group 0-15 or to specific address 0-63.

MODBUS register		*DALI address*	*description*	
1-2	1	Bcast	Standard DALI	Fade time (0-15)
	2			Direct arc power control level (DAPc 0-254)
3-34	3+x*2	Group x		Fade time (0-15)
	4+x*2			Direct arc power control level (DAPc 0-254)
35-162	35+x*2	Address x		Fade time (0-15)
	36+x*2			Direct arc power control level (DAPc 0-254)
163-170	163	Bcast	DALI type 8 RGBWAF (Color)	Fade time (0-15)
	164			Direct arc power control level (DAPc 0-254)
	165			Red (0-254)
	166			Green (0-254)
	167			Blue (0-254)
	168			White (0-254)
	169			Amber (0-254)
	170			Freecolor (0-254)
171-298	171+x*8	Group x		Fade time (0-15)
	172+x*8			Direct arc power control level (DAPc 0-254)
	173+x*8			Red (0-254)
	174+x*8			Green (0-254)
	175+x*8			Blue (0-254)
	176+x*8			White (0-254)
	177+x*8			Amber (0-254)
	178+x*8			Freecolor (0-254)
299-810	299+x*8	Address x		Fade time (0-15)
	300+x*8			Direct arc power control level (DAPc 0-254)
	301+x*8			Red (0-254)
	302+x*8			Green (0-254)
	303+x*8			Blue (0-254)
	304+x*8			White (0-254)
	305+x*8			Amber (0-254)
	306+x*8			Freecolor (0-254)
811-813	811	Bcast	DALI type 8 Tc (Color temperature)	Fade time (0-15)
	812			Direct arc power control level (DAPc 0-254)
	813			color temperature (Tc) = 1000000 / T[K]
814-861	814+x*3	Group x		Fade time (0-15)
	815+x*3			Direct arc power control level (DAPc 0-254)
	816+x*3			color temperature (Tc) = 1000000 / T[K]
862-1053	862+x*3	Address x		Fade time (0-15)
	863+x*3			Direct arc power control level (DAPc 0-254)
	864+x*3			color temperature (Tc) = 1000000 / T[K]

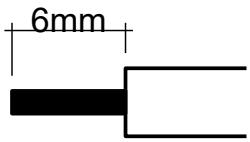
Signaling		
ETH	Connection on Ethernet network	
100M	Ethernet speed	
	Indication Off	10Mbit
	Indication On	100Mbit
TxDALI	Data sending on DALI bus / connection error	
	 blinking signalize outgoing messages on DALI bus	
	 regular flashing in 1 sec interval signals error of unit connection (if RxDALI is off) • disconnected DALI bus • defective DALI bus power supplier (e.g. common current source) • mains voltage 230V has been connecter to the DALI bus • low supply voltage	
RxDALI	Incoming communication on DALI bus	
	 Switching off signals incoming data on DALI bus	

Terminals connection



Designation	*Description*
DA/DA	DALI bus, Each terminals are one DALI bus. On each of those terminals are two inputs mutually interchangeable (not between those terminals)
ETH	Ethernet, passive PoE power supply
IN 9-32VDC	External DC supply 9-32V (alternative to PoE)

Conductor preparation:



Power supply

This unit has two options of power supply. Passive PoE or external power supply on terminals.
IN 9-32VDC. Consumption is in both cases 1,5W (supply current is dependent on connected supply voltage).

Passive PoE	Power supply is connected together with Ethernet on ETH connector. Power supply is inserted into the data cable via common passive PoE injector. Supply voltage van be in range 9-32V.
IN 9-32VDC	DC voltage 9-32 on terminal „IN 9-32VDC“

Protocol

Data are sent to converter via TCP/IP protocol. Message format is stated in

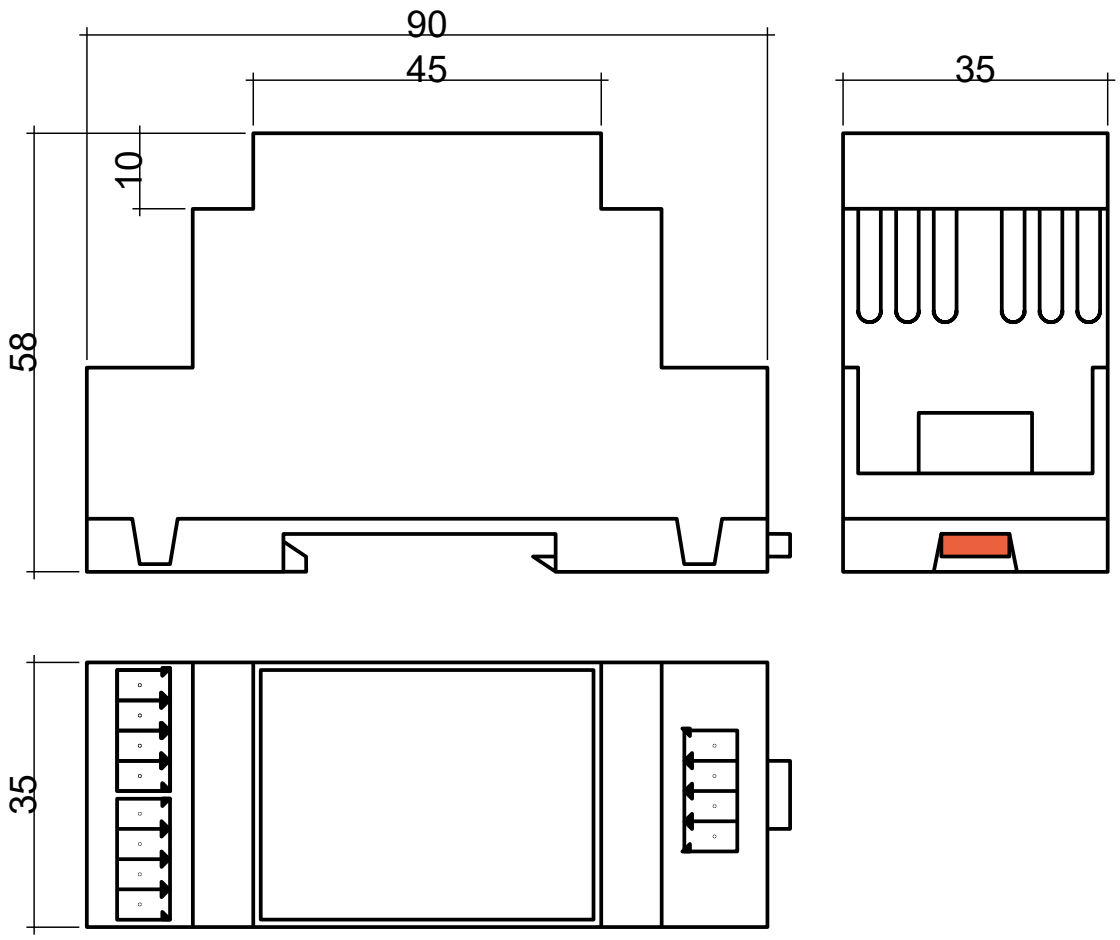
separate document called „DALI communication protocol.pdf“ which can be download on www.foxtron.eu.

Setup

The DALInet converter is configured using the FoxNetFinder program, which can be downloaded free of charge from the **Support** tab on the Foxtron.cz website. Press the Find button to locate a specific DALInet (the default IP address is 192.168.1.241). You can change the IP address using the New IP line in FoxNetFinder and save it to DALInet by clicking Send new IP. After saving, we recommend reading all devices again using FoxNetFinder and verifying that the IP address has been changed correctly.

Device Name (for DHCP)	Name of DALI2net converter for DHCP server
Addressing Mode	Static – manual setup of IP address
	DHCP – automaticsetup of IP adresy thanks to DHCPserver
Device IP Address	IP address of DALI2net converter (for Addressing Mode = Static)
Device Subnet Mask	Net mask
Device Gateway	Default gateway
DNS Server	Address of the domain server
Ethernet Link	Normal – automatic speed choice
	100BT Half duplex – Ethernetu speed 100Mbps
	10BT Half duplex – Ethernetu speed 10Mbps

Dimensions (in mm)



tel: +420 226 522 222
e-mail: info@foxtron.cz
web: www.foxtron.eu