

# Emergency and evacuation lighting monitoring

# DATA-S

# Installation description

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## 1. Overview

DATA-S the system consists of the following elements:

- operator's control units available in two versions, with C- Panel touch screen or Easy 4- line display and keyboard
- signal distributor L-Repeater (optionally)
- UPS module VIP DATA – S

Moreover, the key element of DATA-S system is the TM Bus which facilitates communication between modules (VIP DATA-S) and signal divider (C-Bridge).

## 2. C-Panel vs. Easy – comparison of control units

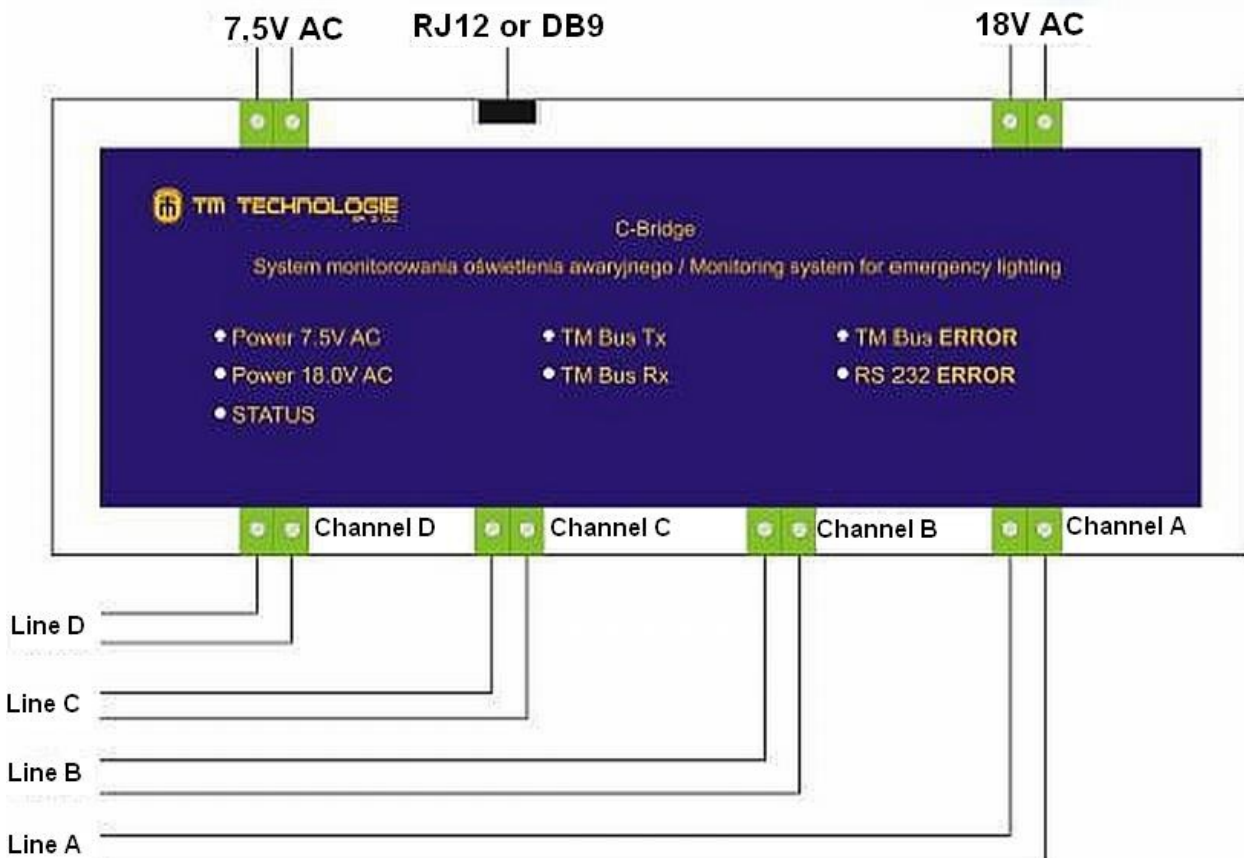
Operator's control unit is the core of the monitoring system, DATA-S system mates with one of two control units. Basic differences of both solutions are presented in the following table.

	DATA-S Easy	Data-S C-Panel
Display	4 x 20 LCD characters	5,7" LCD screen
User interface	9 button keyboard	touch screen
Software	TM Technologies copyright	TM Technologies Copyright based on graphic Windows CE
The number of serviced units C-Bridge	1	3
The maximum number of installed mountings	252	3024
Communication socket with C-Bridge	RJ-12	D89
Power supply	7,5 V AC (2,3VA)	24V DC (50VA)
Overall dimensions (length x width x depth) [mm]	160 x 90 x 63 adapted for rail assembly DIN 35	195 x 148 x 50
Protection grade	IP20	IP20

Detailed operational instructions for control units are available in separate

### 3. C – Bridge – connection scheme and its role in the system

C-Bridge is a device dedicated for DATA-S system that is located between the Communications of the operator’s control unit and address modules VIP DATA – S. Transmission with the operator’s control unit is made by RS 232 or D89 depending on operator’s control unit). Communication with modules is performed by the 2 cable main Line TM Bus. C-Bridge Unit is located in the operating box together with the control unit. Proper functioning can be guaranteed by the following scheme. Voltage Source 7,5 AC should have Power of 2,3 VA but 18V AC – 50 VA in case of original encapsulation 230 V AC are supplied in the set. Detailed information concerning C-Bridge unit are available in the catalogue card.



#### 4. L- Repeater connection scheme and its function in the system

L-Repeater is an optional element of DATA-S system used for two purposes:

- Reinforcement of Signac C- bridge in case of very long TM Bus lines (over 1 km)
- Increasing the number of modules supported by C-Bridge Unit (2-4 Repeaters are joined in parallel to transmission channel TM Bus- which make possible the support of 252 modules on every C-Bridge channel)

Every L- Repeater broadens the service of the system of 63 casings.

**Caution:** VIP DATA-S address module at the section of C-Bridge and L-Repeater should not be joined to TM Bus.

L-Repeater has following outputs:

- Power supply – 18V AC (10VA)
- INPUT – TM Bus joined to C-Bridge
- OUTPUT – TM Bus joined to address modules VIP DATA-S

One casing (FIBOX) comprises L-Repeater two units as a standard powered by a transformer 230/17V AC (50VA). Power supply of 230V AC must be provided for the casing.



## 5. VIP DATA-S

VIP DATA-S address module is an element of the system which is assembled in every fittings S-LAMP. There are two operational modes for this module:

- Emergency power supply mode (in casings with at least one lighting source used for networking, where at least one lighting source works as emergency mode)
- Emergency mode

Every module regardless of the type of casing and type of work has got unique address from the range between 1 and 252, which should be placed on the visible part of the casing.

**Caution:** Modules of the same address should not be joined to the same C-Bridge unit (the same addresses can occur in separate channels).

Casing used for emergency Power supply mode has got the following inputs:

- Neutral conduit (N) (powered by a cable  $1,5\text{mm}^2 - 2,5\text{mm}^2$ )
- Permanent phase (L)-230V AC (its decay activates emergency mode, powered by a cable  $1,5\text{mm}^2 - 2,5\text{mm}^2$ )
- Shut off phase (L1)- 230 V AC ( its decay turns off the lighting source, powered by a cable  $1,5\text{mm}^2 - 2,5\text{mm}^2$ )

**Caution:** Shut off phase (L1) should be a branch of permanent phase (L).

The fittings adapted for *emergency* mode has got the following inputs:

- Neutral conduit (N) (powered by a  $1,5\text{mm}^2 - 2,5\text{mm}^2$  cable)
- Permanent phase (L)-230V AC (its loss activates emergency mode, powered by a cable  $1,5\text{mm}^2 - 2,5\text{mm}^2$ )

All types of address modules VIP DATA –S possess:

- Battery socket
- TM Bus socket

**Caution:** The voltage exceeding 24 Volts must not occur at any of the Bus terminals. Otherwise it will cause immediate damage of the Communications Block module

## 6. TM Bus – Network topology and connections

TM Bus is a 2 cable bus which supports Communications between C-Bridge unit and VIP DATA-S module. It should be made by cable YTKSYekw 2x 0,8 mm<sup>2</sup> (or YTKSYekw 2 x 0,5 mm<sup>2</sup>). When designing and installing TM Bus special attention should be put to:

- Avoiding leading powering lines of 230V AC and higher in the direct neighbourhood as this might cause Communications disturbances between C-Bridge Unit and VIP DATA-S module)
- The maximum number of modules connected to one C-Bridge channel is 63. In case of connecting other casings, L-Repeaters shall be used (according to the description from the previous point) or additional TM Bus should be made using another C-Bridge channel
- Long short circuit should be avoided during C-Bridge (short circuit is signalled by a blinking diode TM Bus ERROR on its previous panel) as this condition may cause to TM Bus channel damage in C-Bridge
- The voltage exceeding 24 Volts must not occur on TM Bus as it immediately causes the damage of the communications block of all monitoring devices connected to DATA-S
- All TM Bus should be led to the operator's unit and C-Bridge Unit (usually BMS room or gate-house)

