



TELEMETRY RECEIVER

TC

Installation and user manual

IMPORTANT SAFEGUARDS

READ THE INSTRUCTIONS

Be sure to read all the safety and operating instructions before using the device.

KEEP THE INSTRUCTIONS

Be sure to keep all the safety and operating instructions for possible future need and queries.

FOLLOW THE INSTRUCTIONS

Be sure to follow all the safety and operating instructions.

WATER AND HUMIDITY

Do not use the unit near water – for example near a bath tub, or in any area showing evidences of humidity.

POWER SUPPLY

This equipment can be fed only by the type of supply quoted by a production code on the device. Do not overload electric adapters and extension cords as this can result in fire or electric shock.

REPAIR

Do not attempt to open covers and to service this unit yourself, refer all repairs to qualified service personnel.

UNPACKING

Transfer package is a safe covering for device transportation. We recommend to keep the wrapping for relevant future usage.

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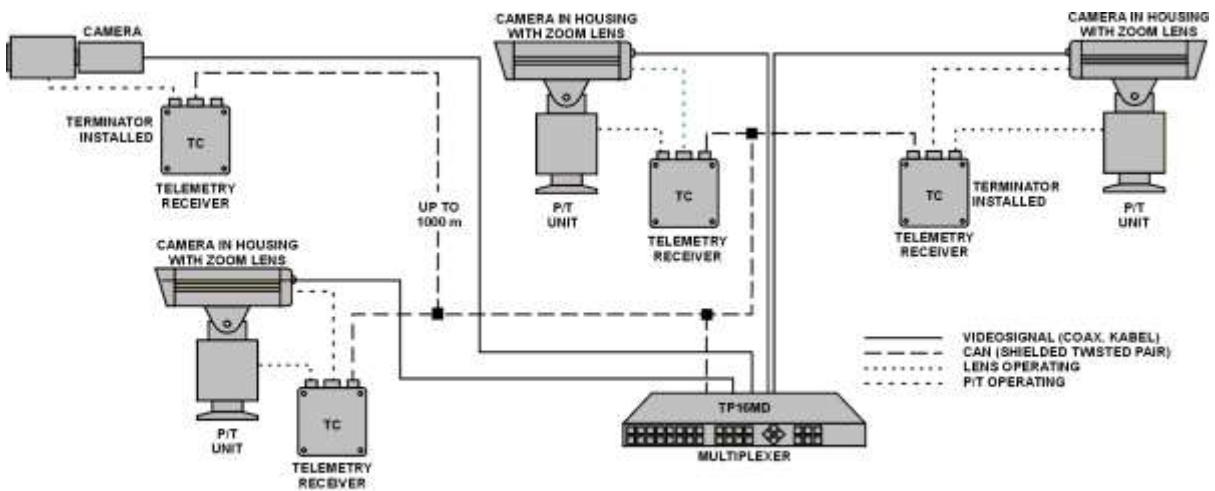
INTRODUCTION

Telemetry system TC is used for telemetry controlling up to 240 PAN/TILTS and ZOOM lenses up to the length 1000 m from one or more controlling sites. Interface CAN connects all apparatus using the twisted pair cable.

Transmitter (for example: video multiplexer TP16MD) sends a command, to the CAN interface with the address of target device (TC), which receives and executes it (for example: switches PAN/TILTS left rotational movement). Telemetry receiver is the unit controlled with the help of 11 commands: LEFT, RIGHT, DOWN, UP, SCAN, ZOOM+, ZOOM-, FOCUS+, FOCUS-, IRIS+, IRIS-.

The connection of one transmitter and 4 receivers is described on the figure 1.

Fig.1: Example of telemetry system connection



AVAILABLE MODELS

Telemetry receivers are available for two supply voltages:

- **TC/24** – power feeding 24 VAC
- **TC/230** – power feeding 230 VAC

The receiver supply voltage must be the same as the supply voltage of the controlled PAN/TILT unit.

Fig. 2: TC/24

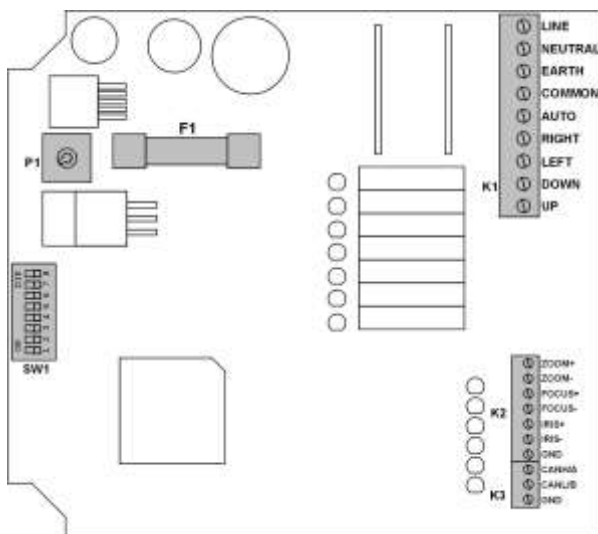
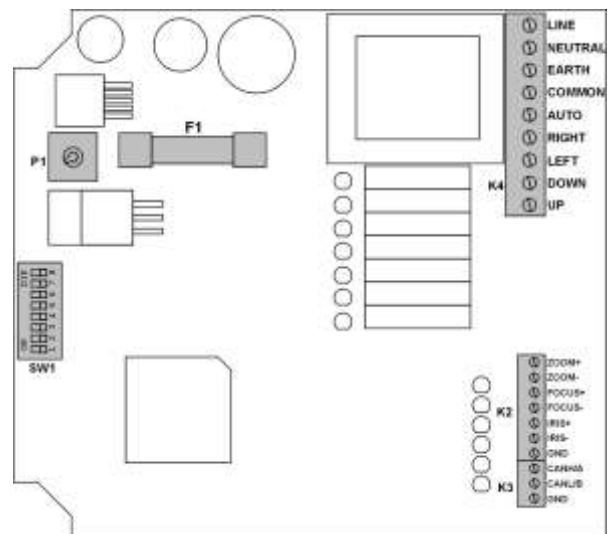


Fig. 3: TC/230



INSTALLATION

PAN/TILT CONNECTION

The PAN/TILT unit is connected to the telemetry receiver with the help of the terminal block K1.

After switching a particular direction, the controller connects a particular lead (for example: LEFT) to the voltage from the lead LINE on the feeding connector K1.

The description of terminal block K1 leads:

- **LINE / NEUTRAL** – power supply input
- **EARTH** – not used on the PCB
- **COMMON** – common lead (connected to NEUTRAL internally)
- **AUTO** – automatic horizontal rotation (AUTOSCAN).
- **RIGHT** – rotation to the right
- **LEFT** – rotation to the left
- **DOWN** – tilt downwards
- **UP** – tilt upwards

LENS CONNECTION

Lenses are connected to the telemetry receiver with the help of terminal board K2. Receiver TC enables controlling the zooming (ZOOM), focusing (FOCUS) and iris (IRIS) of the lens. Lens conductors with the particular functions (for example FOCUS+) are connected to the particular terminal block lead. Lead GND is connected only in the case that the motor of the lens function has the central conductor leaded out.

After receiving commands (for example: ZOOM-), the controller connects the voltage between ZOOM- and ZOOM+ leads (see the chapter “Controlling voltage setting” for the lens).

Both the ways of connection are described on the figures 4 and 5.

Fig.4. One lens function connection

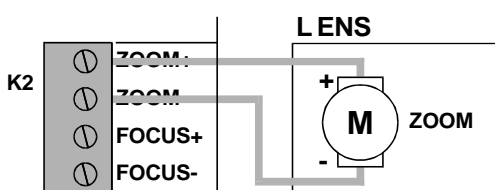
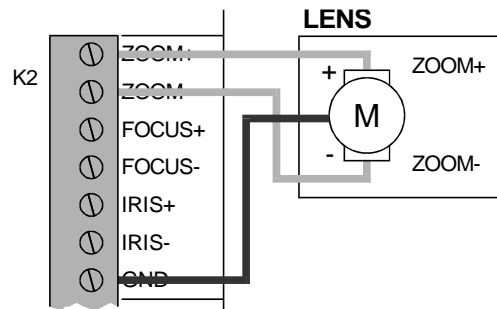


Fig.5. The connection of the lens with the motor with central lead.



CONTROLLING VOLTAGE SETTING FOR THE LENS

Lens functions are controlled with the direct current voltage. Voltage level is important for defining the speed of particular lens functions. This voltage can be set up in the range from 3 to 15V with the help of the variable resistor P1. By rotating the variable resistor clockwise the voltage level rises. Voltage level cannot exceed the maximum level given by the lens manufacturer. The manufacture level is set up at 8 V, which would cause no problems in most cases.

CAN CONNECTION

Telemetry receiver TC is controlled by CAN bus. This is the two-wire bus – twisted pair – connecting all units in the telemetry system. The bus is connected at the terminal block K3 and to the leads CANH/A and CANL/B. Shielding is connected to the GND lead.

RESISTANCE LOAD SETTING

The CAN must be terminated with the resistance load 120 Ω connected at its terminal points. This resistance is connected between the leads CANH/A a CANL/B.

RECEIVER ADDRESS SETTING

Every unit on the bus must have its own address. The receiver address setting is done with the help of the DIP switcher SW1 All possibilities of the address setting are described in the Table 1. The address can be changed even during the unit operation.

POWER SUPPLY CONNECTION

Version 24 V:

- **LINE** – first conductor of 24 VAC
- **NEUTRAL** – second conductor of 24 VAC
- **EARTH** - unconnected

Version 230 V:

- **LINE** – phase conductor („side“ – black or brown)
- **NEUTRAL** – neutral conductor („central“ - blue)
- **EARTH** – earth conductor (yellow – green)

Safety fuse F1 guards only the low-voltage (logic) controller part.

TEST MODE

Test mode is used for verification of device functions before connected P/T unit and zoom lenses. Start-up of test mode is following:

1. Disconnect the device from the input voltage.
2. Switch all the DIP to ON position.
3. Connect the device to input voltage
4. Switch all the DIP to OFF position
5. The device will start to switch on the individual outputs (LED) step by step.
6. Test mode goes OFF when the input voltage is disconnected.

BEFORE LOOKING FOR HELP

| YOUR TROUBLE | THE CAUSE AND ITS SOLUTION |
|--|--|
| Device does not react to receiving signals. | The power supply is not connected. <i>Check the supply voltage. The green LED should be shining.</i> <i>Check the connection of P/T units, lenses and the bus CAN.</i> <i>Check the transmitter and receiver address.</i> |

TECHNICAL SPECIFICATION

| GENERAL | |
|------------------------------------|--|
| Input voltage: | 24, 230 VAC |
| Power consumption: | Max. 4 W |
| PAN/TILT current: | Max. 3 A |
| Operating lens current: | 3 – 15 VDC |
| Operating lens current: | 50 mA max. |
| CAN BUS | |
| Number of addresses: | 240 (1 – 240) |
| Baud rate: | 50 kBd |
| Cable length: | 1000 m |
| Maximum length of diversion: | 60 m |
| Maximum length of al diversion: | 300 m |
| Terminators: | 120 Ω |
| Cable for bus length 0 – 40 m: | 0,25 mm ² – 0,34 mm ² (AWG23, AWG22) |
| Cable for bus length 40 – 600 m: | 0,34 mm ² – 0,6 mm ² (AWG20) |
| Cable for bus length 600 – 1000 m: | 0,75 mm ² – 0,8 mm ² (AWG18) |
| TEMPERATURE CONDITIONS | |
| Range of operating temperatures: | -20 ÷ 40 °C |
| Humidity: | max. 85 % |
| MECHANICAL PARAMETERS | |
| Dimensions: | 130x152x75 mm |
| Weight: | 0.5 kg |

