ULTRAK

DCMT8

OPERATING INSTRUCTIONS

INDEX

Introduction

Packing contents

- keyboard DCMT8
- external power supply
- telephone inverted cables 6/6 - Length about 150 cm.
- 4 RJ jack boxes
- 2 ferrite cores
- 1 instruction manual

After the delivery, check that the packing is not damaged and shows no evident signs of falls or abrasion. Should this be so, contact immediately the supplier. Check that the contents correspond to the above-mentioned list of materials.

Contents of this Instruction Manual

This manual describes the DCMT8 control keyboard, together with its specific procedures of installation, configuration and use.
Read carefully this manual, in particular the chapter concerning the safety rules, **before the keyboard installation and use.**

Addressee of the Instruction Manual

The different parts of this manual are meant to satisfy two operative requirements, those of the installer technician and those of the operator.
Installer technician: skilled technician able to carry out the safety system installation and to verify its functionality.
He has the necessary technical knowledge to install, connect and configurate the system. Only the installer technician is allowed to carry out the operations reserved to “Technical staff”.
Operator: end user who operates on the control keyboard to set up the operating modes of the whole system. In case of multi-user systems, up to 4 operators can work at the same time on the available resources (video inputs, monitors, etc.).

What to read

The installation procedures, mainly addressed to the **installer technician** are described from page 5.
The **operator** is supposed to read from page 10, for the use of the keyboard and direct switching.

Typographic conventions

Different graphic symbols are used in this manual, the meaning of which is here described:

 Hazard of electric shock; disconnect the power supply before proceeding, if not otherwise specified.

 Read carefully the procedures or information indicated, and if necessary carry out what is prescribed according to the required modalities. An incorrect procedure may compromise the system operation or damage it.

 Read carefully to understand the system operation.

Safety rules

 The keyboard DCMT8 complies with the normative laws in force at the time of editing of this manual, concerning electric safety, electromagnetic compatibility and general requirements.
Anyway, in order to ensure the users (installer technician and operator), the following warnings are specified for safety's sake:

- Connect to a feeder corresponding to the specifications indicated on the data plate (see next chapter *Identification data*)
- The appliance (and the complete system, which it belongs to) must be installed only by a qualified technician
- For after-sale service call only authorised technical staff.
- Never open the appliance.
- The tampering of the appliance may void the guarantee terms.
- The outlet must be correctly earthed according to the normative laws in force.
- Do not unplug the appliance by pulling the power supply cable.
- Before any shifting or technical operations on the appliance, unplug it from the mains: the appliance is completely off-line only when the plug is diconnected and the cables connected to other appliances have been removed
- Do not use extensions showing wear or ageing, since they may seriously compromise the users' safety
- Avoid wetting the appliance or touching it with wet hands, while it is in operation
- Do not leave the appliance exposed to atmospheric agents
- Do not use the appliance in the presence of inflammable substances
- Do not allow children or people not familiar with the appliance to use it
- Make sure the appliance always rests on a solid and large enough base

Keep this manual close to hand for any future reference

Identification data

 On the rear side of the DCMT8 keyboard there are two plates complying with EC specifications.
The first plate shows model identification code (Bar code EXT3/9).
The second plate shows the model serial number (Bar code EXT3/9).
On the external power supply a plate shows the electrical specifications.
When installing the appliance, check that the power supply specifications of the keyboard correspond to those required. The use of improper appliances may seriously compromise the safety of the personnel and the installation.

Description of the DCMT8 keyboard


The DCMT8 keyboard is a professional product for applications within the sphere of safety and surveillance. In a safety system, it allows the video switching control (via SW4.2REM/SW8.2REM sequential switcher) and the peripheral station control (via DTMRX1 and DTRX1 receivers).

Features:

- RS232 and Current Loop communication mode (RS232, only telemetry)
- Telemetry direct control
- Easiness of use

Appliances which can be connected to the DCMT8 keyboard

- **Receiver driver DTRX1**: 17-function digital receiver, allowing the remote control of pan & tilt motors, wiper and wash, and 4 auxiliary contacts. It can be individually addressed up to 99 units.
- **Mini receiver driver DTMRX1**: 11-function digital receiver, allowing the control of pan & tilt motors (horizontal and vertical, zoom lenses, autopan). It can be individually addressed up to 64 units.
- **MICRODEC control miniriceiver:** digital receiver with 8 functions (horizontal, vertical, zoom and focus). Addressable up to 32 units.
- **SW4.2REM/ SW8.2REM unit:** it allows the switching of 4/8 telecameras on 2 outputs.

Changing baudrate

- The keyboard DCMT8 can be used in trasmission systems such as modems, optic fibers, radio links, etc. It's possible to use a slower comunication speed, and set keyboard baudrate to 9600 or 1200 baud.


Warning! Keyboard and controlled devices (switcher, telemetry receiver) must be set to the same baudrate! Look at the respective user's manual.

Changing baudrate to control the switcher

Turn off the DCMT8; turn on the keyboard keeping pressed one of the following keys:

- key 5:9600 baud
- key 6:1200 baud

Blinking LEDS confirm the change

Changing baudrate to control the telemetry receiver

Turn off the DCMT8; turn on the keyboard keeping pressed one of the following keys:

- key 7:9600 baud
- key 8:1200 baud

Blinking LEDS confirm the change

Installation

The following procedures must be carried out with power supply off, if not otherwise specified.

The installation must be carried out only by qualified technical staff.

Unpacking

If the packing shows no relevant defects due to falls or anomalous abrasions, check the material contained, according to the list given at chapter *Introduction, Packing contents* (page 2).
The installer technician is required to dispose of the packing material according to the differentiated collecting modalities or ,anyway, according to the normative laws in force in the Country of use.

Check of identification data

Before installing the appliance, check that the material supplied corresponds to the specifications indicated on the data plate, following the chapter *Identification data* (page 3). Do not carry out any modification or connections which are not provided for in this manual: the use of improper appliances may seriously compromise the safety of the personnel and the installation.

Switching on and off

Before connecting the appliance:

- check that the material supplied corresponds to the specifications indicated on the data plate, following the chapter *Identification data* (page 3)
- check that the keyboard and the other components of the installation are closed in order to avoid a direct contact with energized parts
- the keyboard and the other appliances of the installation must rest on a large and solid base
- the power supply cables do not have to hinder the common operations of the installer technician
- check that the electrical capacity and the extensions eventually used will support the power consumption of the system.

SWITCHING ON : plug Mini Dip 4 poles connector in the rear of the keyboard. The keyboard has no switch; plug it into the outlet.

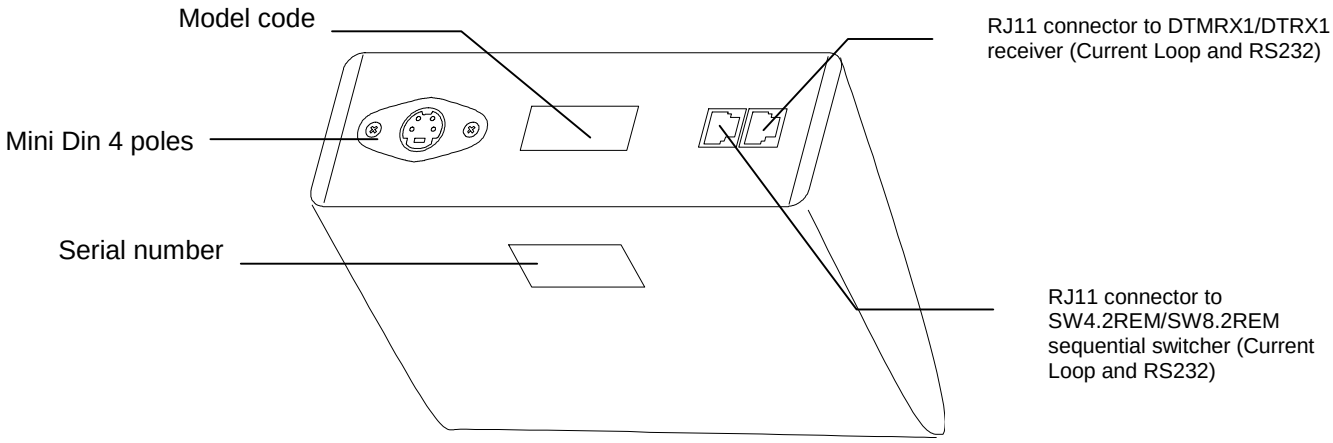
SWITCHING OFF : unplug the appliance from the outlet.

Connectors and connections

The installation must be carried out only by qualified technical staff: an improper connection of the peripheral units may cause the keyboard to be isolated from the rest of the system.

Connectors

The DCMT8 keyboard features two RJ11 connectors located at the rear and Mini Din 4 poles connector:

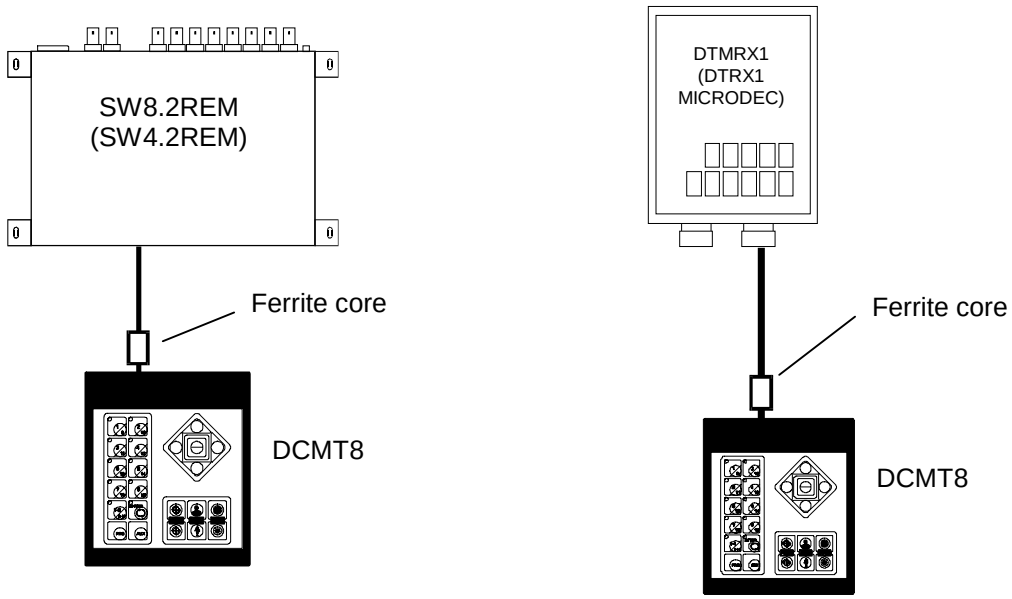


Data transmission to switchers and telemetry receivers is made in both RS232 and Current Loop at the same time.

Before connecting the appliance to the DTMRX1/DTRX1 receiver, it is necessary to set the receiver transmission/receiving mode (Current Loop or RS232) following the respective instruction manuals.

DCMT8 connection to peripheral units

The DCMT8 keyboard, the SW4.2REM/DTRX1 sequential switcher and the DTMRX1/DTRX1 receivers can be connected together by 6-pole telephone cable with RJ11 plug supplied by the manufacturer, for a laboratory check of the appliance running.
The equipped ferrite cores must be connected on the telephone cables in the nearness of the RJ11 connectors of the DCMT8 keyboard.



For longer distances, RJ wall connector blocks are used; these can be connected by 2-pole cable, according to the following schemes:

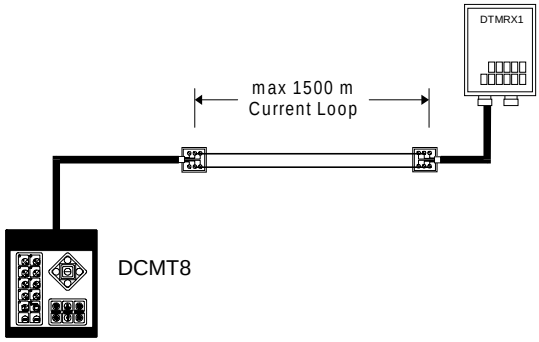
Connection of DCMT8 - DTMRX1 / DTRX1 receivers

Current Loop connection: max distance 1500 m

DCMT8		DTMRX1/DTRX1
TX CL	Yellow ---------- Black	RX CL
GND CL	Red ---------- Green	GND CL

RS232 connection: max distance 15 meters

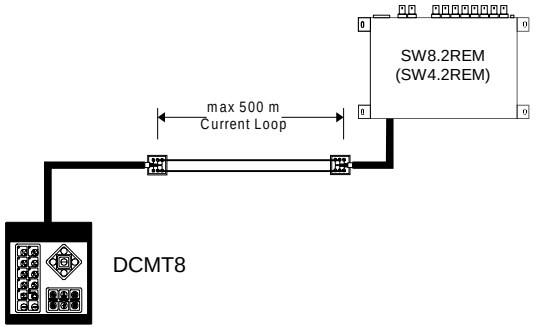
DCMT8		DTMRX1/DTRX1
TX RS232	Black -------- Yellow	RX RS232
GND RS232	Green -------- Red	GND RS232



Connection of DCMT8 - SW4.2REM/SW8.2REM units

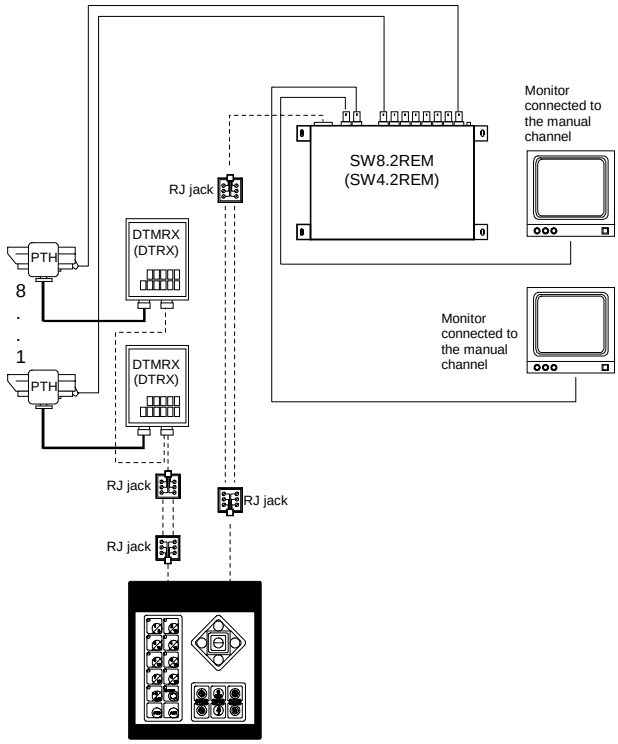
Current Loop connection: max distance 500 m

DCMT8		SW4.2REM/SW8.2REM
TX CL	Yellow ---------- Black	RX CL
GND CL	Red ---------- Green	GND CL



Installation example

Installation controlled by one operator with two monitors: in addition to video switching and alarm contact handling, the operator control a group of receivers for the movement of pan & tilt motors and zoom lenses:



MATERIAL USED

Control keyboard:
- 1 control keyboard **DCMT8**

Video handling:
- 1 sequential switcher SW8.2REM (or SW4.2REM)
- 2 monitors
- 2 telecameras (max 8)

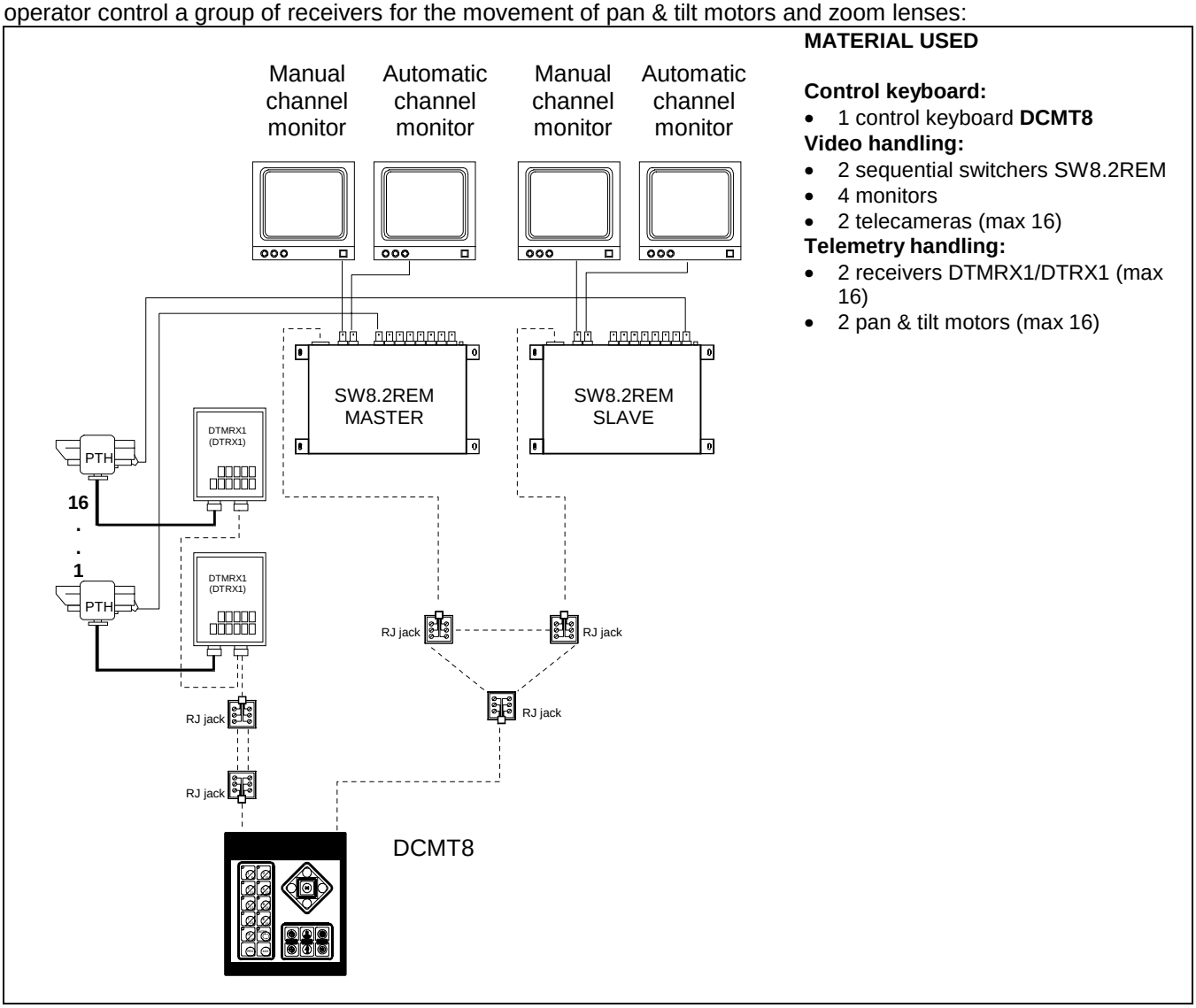
Telemetry handling:
- 2 receivers DTMRX1/DTRX1 (max 8)
- 2 pan & tilt motors (max 8)

Sequential switcher in double configuration

The **DCMT8** keyboard allows the control of two **SW8.2REM** sequential switchers in cascade connection. Here is an example:

Installation example

Installation controlled by one operator with four monitors: in addition to video switching and alarm contact handling, the operator control a group of receivers for the movement of pan & tilt motors and zoom lenses:



MATERIAL USED

Control keyboard:
- 1 control keyboard **DCMT8**

Video handling:
- 2 sequential switchers SW8.2REM
- 4 monitors
- 2 telecameras (max 16)

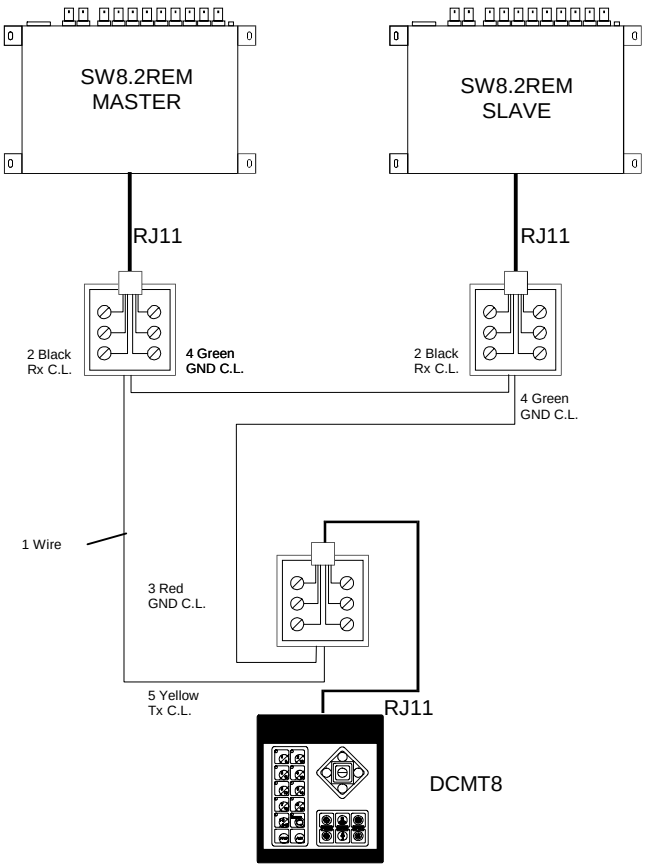
Telemetry handling:
- 2 receivers DTMRX1/DTRX1 (max 16)
- 2 pan & tilt motors (max 16)

In this case the numbering of the inputs which are selected by the operator follows this scheme:
1-- 8 : MASTER sequential switcher
9--16 : SLAVE sequential switcher
This configuration implies a different system setup handling: the configuration screens are no longer individually controlled by each sequential switcher, but are presented at the same time on the two manual channels (see instruction manual of SW8.2REM sequential switcher).
The cursor can shift between the two outputs, allowing the configuration of both sequential switchers, according to the manual of SW8.2REM.

In order to carry out a correct setup procedure, in **both** sequential switchers there must be :
- an input video signal on channel 1
- a monitor on the output manual channel

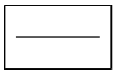
Connection scheme for the sequential switcher in double configuration

In order to control two SW8.2REM sequential switchers from a DCMT8 keyboard, as described in the following paragraph, it is necessary to connect them according to this scheme:



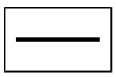
Cables

In the above schemes, different lines have been used to show different types of functions:



video cable:

coaxial RG 59 or equivalent cable.
For longer distances it is advisable to use a video transmission system via twisted pair cable.



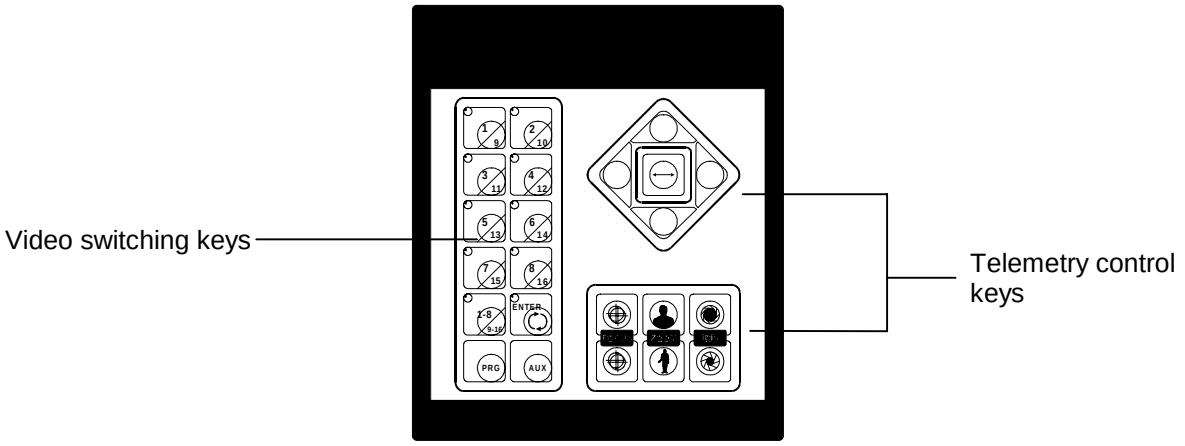
multipolar cable:

each pan & tilt function is enabled / desabled by a relay inside the receiver.
Define the number of wires in the multipolar cable:
7 wires for pan & tilt movement (230 V~ or 24 V~): right, left, high, low, autopan, common, ground (only 230 V~)
6 control wires for reverse polarity zoom lenses (zoom wide, zoom tele, focus near, focus far, iris open, iris close)
4 control wires for common ground zoom lenses (zoom, focus, iris, common)
2 reference wires for preset handling, and 1 additional wire for each preset function.
For each auxiliary function, wiper and wash, provide for a couple of wires.
For further information, refer to DTRX1 instruction manual.

cable for control digital transmission:

Two couples of twisted pair cable, minimum diameter 0,6 mm (section 0,22 mm.^{2} AWG 24):
a couple Transmission / Earth + a couple Reception / Earth.
The maximum connection distance is about 15 m in RS232; 1500 m in Current Loop towards the telemetry. The maximum connection distance between the keyboard and the switchers SW4.2REM/SW8.2REM is about 500m in Current Loop.The telephone cable supplied is 1,5 m long: for longer distances, use RJ connector blocks.

Keyboard and switching functions



Video switching keys

Digital keys 1-8 / 9-16: allow the input direct entry on the manual channel of SW4.2REM/SW8.2REM sequential switcher.

Key **Shift 1-8/9-16**: allow the change between 1-8 and 9-16 modes for the digital key group. If the key led is on, the digital keys enter the inputs from 1 to 8; otherwise they enter the imputs from 9 to 16.

Example :

- Led of Shift key on: by pressing the key 5/13 the manual channel switches on input 5
- Led of Shif key off: by pressing the key 5/13 the manual channel switches on input 13

Key **Enter** ENTER: allow the following actions:

- set the manual channel back to automatic swicthing mode
- reset (if the setup allows it) the alarm condition

PROG key pressed for 5 second (till LED blinking) enter the switcher in program mode.

Telemetry control keys

The DCMT8 keyboard can control up to 16 DTMRX1/DTRX1 receivers. By operating on the telemetry keys, the corresponding actions are carried out by the receiver identified by the same number of the input displayed on the manual channel.

Example :

- Led of Shift key on: if key 3/11 is pressed, the manual channel switches on input 3 and all telemetry controls are performed only by the receiver n.3.
- Led of Shift key off: if key 3/11 is pressed, the manual channel switches on input 11 and all telemetry controls are performed only by the receiver n.11.

Zoom lens control keys

Keys **Focus near, Focus far**: activate the corresponding Focus actions
Keys **Zoom in, Zoom out**: activate the corresponding Zoom actions
Keys **Iris open, Iris close**: activate the corresponding Iris actions

Movement keys

Keys for **PAN & TILT** : allow the pan & tilt movement in the following positions: High, Low (TILT) and Left, Right (PAN)

Key for **AUTOPAN** AUTO : make the pan & tilt move continuously between the limit swicthes, with direction left-right and vice versa (AUTOPAN) key open/close a remote Auxiliary contact number 1 on telemetry receivers

Auxiliary keys

AUX 1 key open/close a remote Auxiliary contact number 1 on telemetry receivers

Maintenance

The DCMT8 keyboard does not need a special maintenance.
Make sure it always rests on a solid base, and that the power supply and connection cables do not hinder the operator.

Switch off the appliance to clean it. Clean the keyboard at regular intervals with a cotton dry cloth, avoiding the use of detergents or wet cloths.

Solution of installation problems

Even if the keyboard DCMT8 is easy to use, some problems may arise during installation, configuration or use.

Problem	Possible cause	Remedy
At the switching on, the leds do not flash	Power supply disconnected	Check the power supply cable
	Incorrect power supply	Check the identification data
The keys work, but the sequential switcher does not switch	The connection cable between the sequential switcher and the keyboard is disconnected	Isolate the problem following the test procedure indicated below
The keys work, but the receiver does not respond	Incorrect receiver identification	Check the receiver identification number
	Incorrect position of Shift key	When the led of the Shift key is on, the receivers from 1 to 8 are controlled, when it is off from 9 to 16
	The connection cable between the receiver and the keyboard is disconnected	Isolate the problem following the test procedure indicated below
	The receiver has no selection jumper for the receiving mode	Put the jumper for the receiving selection (RS232/CL) in the correct position (refer to the receiver manual)

Keyboard-sequential switcher, Keyboard-receiver connection test

To identify the causes of the wrong communication between the keyboard and the sequential switcher (receiver) carry out the following tests:

- test of direct connection between the keyboard and the sequential switcher (receiver)
- test of connection cable.

Direct connection between keyboard and sequential switcher:

- connect the keyboard and the sequential switcher (receiver) via direct telephone cable

If the test is successful, the problem concerns the connection cables: check the connections to the Rjjack connector blocks, according to the schemes in the chapter *Connectors and Connections.*
If the communication problems persist, contact the supplier.

Specification

Dimensions: 152 x 55 x 185 mm

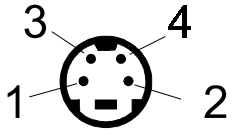
Weight: 850 g

Power supply specifications

Input voltage: 230V~ 50Hz 30VA or 115V~ 60Hz 30VA (as specified on the operating data labels)

Output voltage: 9V~ 50HZ 8VA
14V~ 50HZ 8VA

Connector: Mini Din 4 poli



pin 1-3 9V~
pin 2-4 14V~