dr1

DISPLAY REPLICATOR

PCB SENSOR TEST

coemar

manuale di istruzioni

instruction manual

1^ edizione, giugno 2002
1st edition, june 2002

English

Index

Congratulations on having purchased a coemar product. You have assured yourself of equipment of the highest quality, both in componentry and in the technology used. We renew our invitation to you to complete the service information on the previous page, to expedite any request for service information or spares (in case of problems encountered during use of the equipment). This information will assist in providing prompt and accurate advice from your coemar service centre.

1. Packaging

Following the instructions and procedures outlined in this manual will ensure the maximum efficiency of this product for years to come.

Open the packaging and ensure that no part of the equipment has suffered damage in transit. In case of damage to the equipment, contact your carrier immediately by telephone or fax, following this with formal notification in writing.

packing list

Ensure the packaging contains:

1 ***DR1***
1 power supply
1 instruction manual
1 ***Sensor Test PCB*** *(optional) complete with:*
- *3 connectors*
- *1 temperature/light sensor*
- *1 movement sensor*
- *1 magnetic sensor*
- *1 test magnet*

2. General characteristics

When connected to a DMX 512 installation, the ***DR1*** *allows the user to access all the internal functions of any compatible projectors which are connected.*

The DR1 *is a device designed for technical users and technicians so that they can manipulate projector functions, even whilst projectors are being utilised by the show's lighting director and console programmer, without having physical access of the unit but, rather, by remote control.*
The DR1 *eliminates the need to alter or interrogate, directly on the projector, such parameters the DMX address (eliminating the need for technicians to climb up truss structures), lamp life, master/slave settings, and most other functions normally only available to users directly from the projector's visual display.*
DR1 *introduces the concept of projector ID as a unique identifying feature of a device.*

When utilised with a compatible projector which is fitted with dip-switches, the DR 1 can act as a remote allowing the projector to operate as if it were fitted with a visual display, thus allowing for advanced projector functionality.

It also allows for a group of projectors to be collectively addressed by the remote, allowing complex procedures to be carried out on all projectors in a single operation.

The DR1 *also has diagnostic facilities which allow, when the* ***DR1 SENSOR TEST PCB is connected****, for all fixture sensors to be interrogated in recent build, compatible coemar projectors.*
Additional complementary peripheral devices are scheduled for future release by coemar.

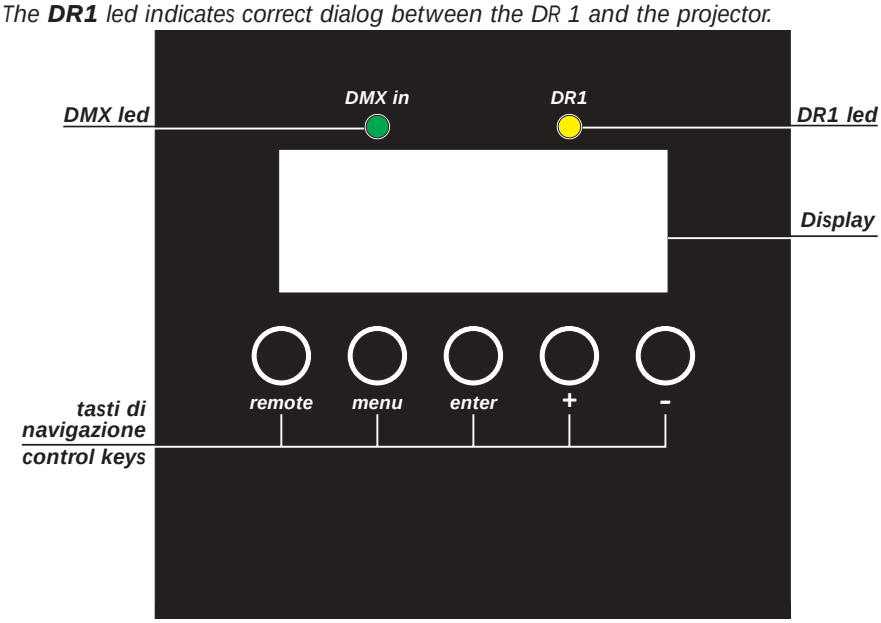
3. Section descriptions

A- Display area
B- Power and signal connection
C- Sensor test PCB connection

A- Display area

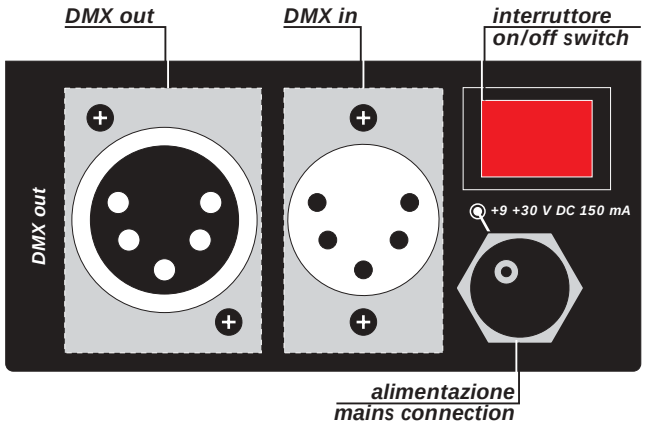
This is the section of the device where control of compatible projectors connected to the DR1 is effected. The replicated menu of each projector appears in this display and may be navigated via the ***remote***, ***enter***, ***+*** *and* ***--*** *buttons.*

The ***DMX led indicates correct signal reception of*** *DMX 512 from the controller used to operate the projector.*
The ***DR1*** *led indicates correct dialog between the DR 1 and the projector.*



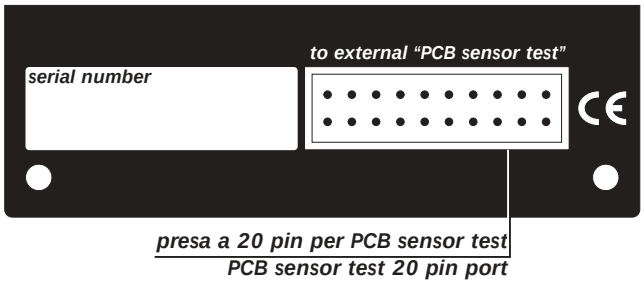
Power and signal connection

At one end of the ***DR1 you will find a power switch and DMX IN*** *and* ***DMX OUT sockets which utilise 5 pin*** *XLR connectors, as well as a socket for connection of the power supply provided with the unit in its packaging.*



Sensor test PCB connection

Also located on the ***DR1 is a*** *20 pin socket for the connection of the S****ensor test*** *PCB.*



4. DMX 512 signal connection

***Via the** XLR5 **DMX IN** socket, the **DR1** receives **DMX 512 signal** which conforms to the international standard for digital **DMX 512signal, regulated by the** USITT (U.S Institute of Theatre Technology).*
*Connection between the **DMX 512** controller and the **DR1** follows the standard:*
Pin 1= Ground (GND)
Pin 2= DATA -
Pin 3= DATA +
Pin 4= Optional - (not connected)
Pin 5= Optional + (not connected)

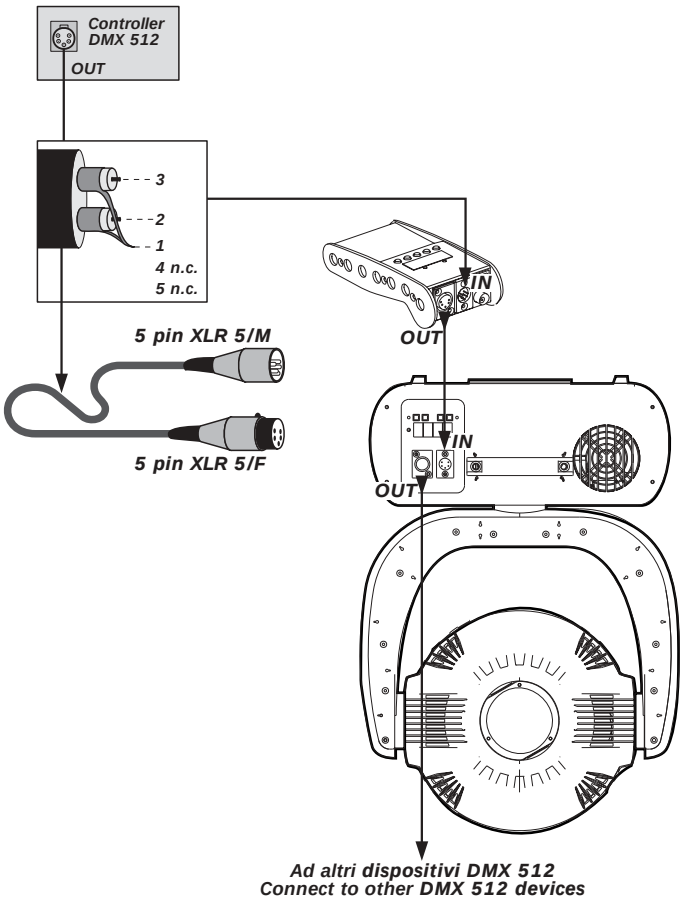
Should you have the need to order components for signal connection, the following are the relevant coemar order codes:

***ME 4965** (XLR 5 plug)*
***ME 4966** (XLR 5 socket)*
***CV 4158** (per metre 2 core screened Ø 0,5 cable)*

Connection should be via 2 core screened cable, according to the standard for signal transmission.
The screening should be connected to pin number 1 of the XLR connector and should be isolated from the metal casing of the connector having regard to polarity.

*Connection between the **DR1** and any other device should always be made to the international standard:*

*Connect the **DR1** to your **DMX** universe as shown in the following figure:*



*All the compatible projectors whose displays you wish to manipulate should be connected via the OUT socket of the **DR1**.*

*You may address up to 250 projectors via the **DR1***

*Should your installation be utilising a dmx splitter, ensure that device has been designed for bi-directional communication and that it supports the **DMX 512/A.** standard.*

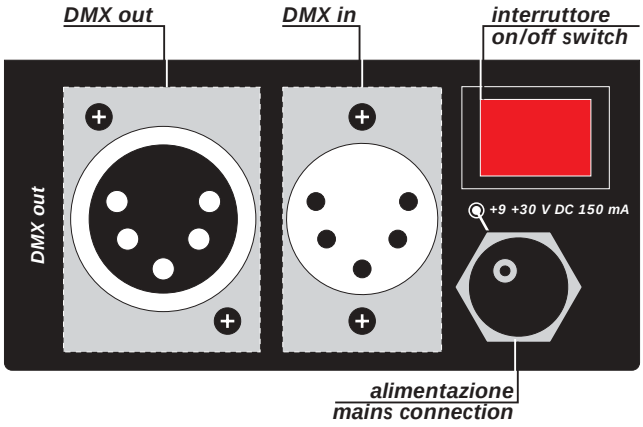
Attention
*The system will not function if a mono-directional device is installed between the projectors and the **DR1**.*

***Coemar** recommends the use of a BID.O.S., a powerful bi-directional Opto-isolator.*

***BID.O.S 6 rack** (cod. 660)*
***BID.O.S 6 truss** (cod. 661)*

5. Mains connection

*The **DR1** is connected to the mains electrical supply via a power-supply which is supplied with the unit. This power-supply is connected to mains power using an appropriate plug and to the unit via a socket connection located on the right.*



5.1 Powering up

***The DR1** operates at a voltage of between +9/30 V DC at 150 mA. The **DR1** should only be connected to mains power via the universal power-supply (100 - 250V~ 50/60 Hz) supplied in the original packaging. Should the power-supply be damaged or fail due to any reason, it is possible to purchase a replacement unit from your **coemar** reseller, quoting item code FO644/2.*

6. Projectors able to be connected to the DR1

The DR1 *will operate with the following compatible coemar projectors which have the correct software version installed:*

Panorama Cyc 250*: software version from V 2,50*
code EP1171 or greater

Panorama Cyc 250 C*: software version from V 1,60.*
code EP1271 or greater.

iCyc 250*: software version from V 2,50.*
code EP1171 or greater.

iSpot 150*: software version from V 3,18 and D 3,30.*
code EP1122, EP1132 or greater.

ColourCyc 250 LX*: software version from V 1,90.*
code EP1261 or greater.

ProSpot 150 LX*: software version from V 1,10 and D 1,70.*
code EP1281, EP1221 or greater.

ProSpot 250 LX*: software version from V 2,01 and D 3,90.*
code EP1062, EP1073 or greater.

ProWash 250 LX*: software version from V 2,01 e D 3,40.*
code EP1082, EP1092 or greater.

ProWash 575 LX*: software version from V 1,11 and D 1,30.*
code EP1290, EP1300 or greater.

iSpot 575 eb*: software version from A V 1,01, BV 1,01 and D 1,30.*
code EP1330, EP1350, EP1341 or greater.

iWash 575 eb*: software version from V 1,11 and D 1,10.*
code EP1310, EP1321 or greater.

Check with your ***coemar*** *service centre regarding other projectors which are compatible with the* ***DR 1****.*

7. Preparing fixtures to operate with the DR1

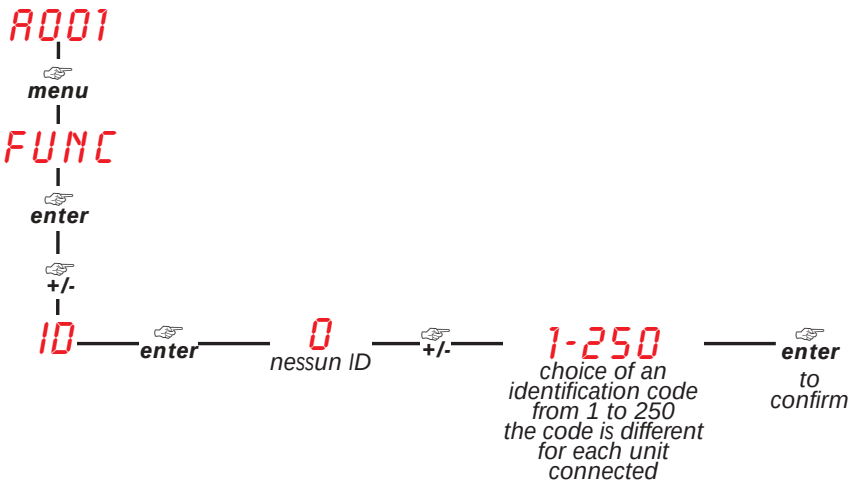
*Ensure that your projector is listed as compatible with the **DR1** and that the correct software version(s) is installed.*

*To prepare a fixture to operate with the **DR1**, you will need to activate the projector's identifying code, which must be unique in the particular **DMX512** universe.*
The method for setting a projector's identifying code ID may vary from model to model, so we recommend that you consult the manual of the projector in order to familiarise yourself with the procedure.

Attention
*If a projector's id code is set to "0" the projector will not be addressable via the **DR1** and so it's display will not be able to be operated remotely.*

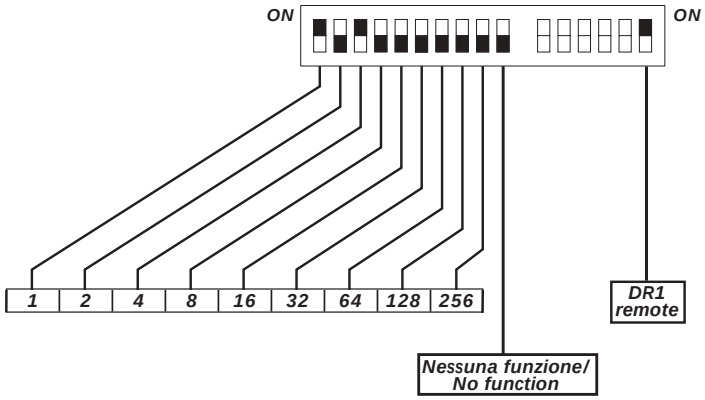
Attention
Do not assign the same ID to two projectors. The will cause the internal functions of the projector to not operate.

*For your convenience, we will outline two modes of setting a projector's id so that it will be able to be addressed by the **DR1** regardless of whether it utilises a digital display or Dip-Switches.*



If a projector is fitted with Dip-Switches the following procedure is appropriate:

***1.** Set the **DR1 REMOTE** dip-switch to the ON position.*
***2.** Using dip-switches from 1 to 128 set up the ID (diagram eg. ID = 5)*



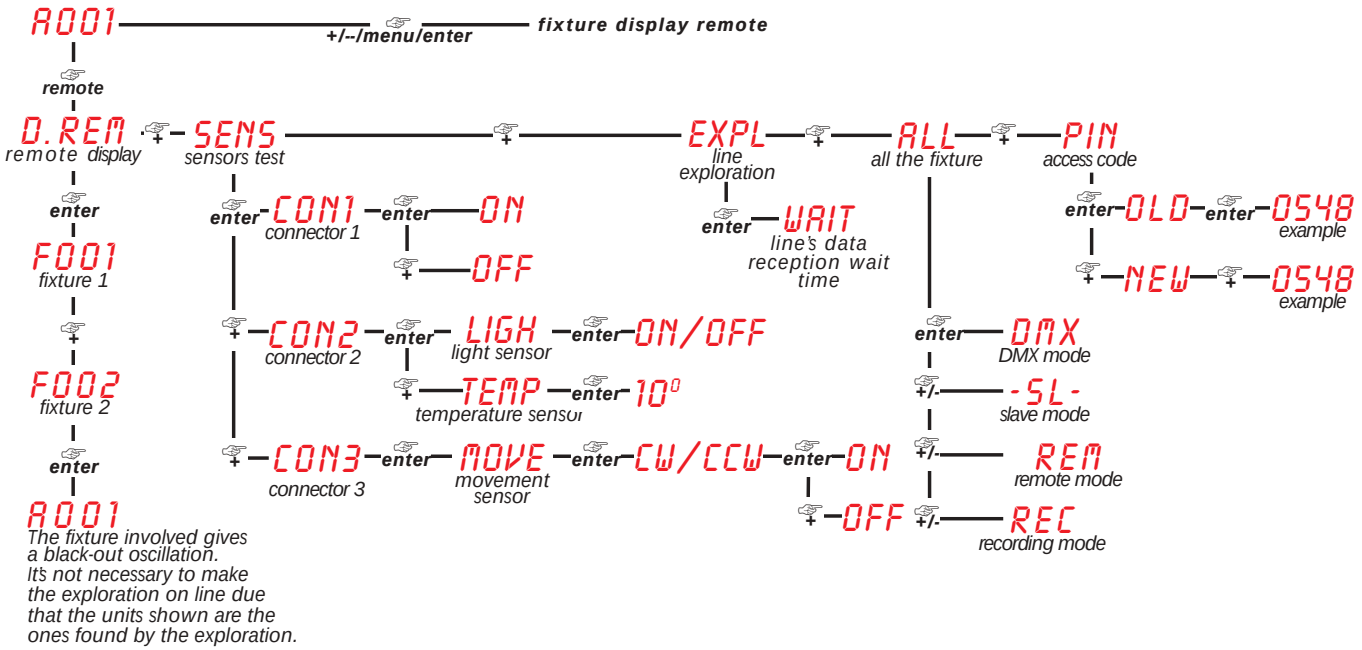
Attention
*The highest ID setting accepted by the **DR1** is 250; dip-switch 256 therefore has no function.*

Setting a projector's ID makes it unique in the installation.

8. Rapid guide to DR1 menu navigation

*To use the **DR1** in the simplest and quickest method possible, the following brief diagram outlines the principal functions of the menu items available. A similar diagram is available on the housing of the **DR1**, beneath the display section.*

At switching On, for few seconds, R1.00, shows the software version installed.
By default it shows A001 (fixture's remote display ID 1), the remote display led siwtches On.
*The fixture's displays can be replicated by using the keys **+/-/menu/enter**.*

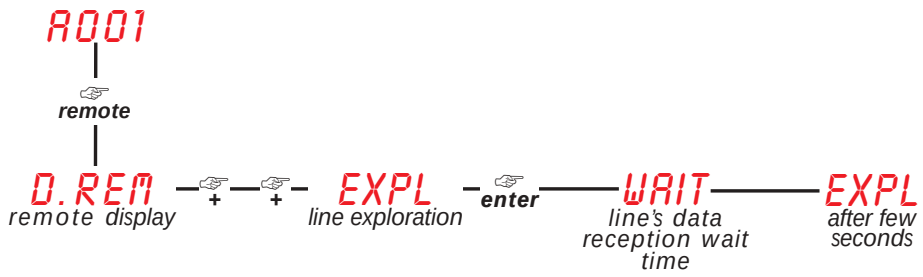


The following sections describe more fully the various functions outlined above.

9. Interrogating the connected DMX 512 universe

*The first operation to perform when you have connected the **DR1** and one or more projectors, is to interrogate the universe to determine exactly how many projectors have been identified.*

1. *Press the **remote button**: the **DR1** display will show D.REM;*
2. *Press the **+** button until EXPL is displayed and then press the **enter button.***
3. *At this point, the **DR1** will commence interrogating the dmx universe, and the display will flash WAIT. The procedure should take only a few seconds and, when completed, the display will show EXPL.*

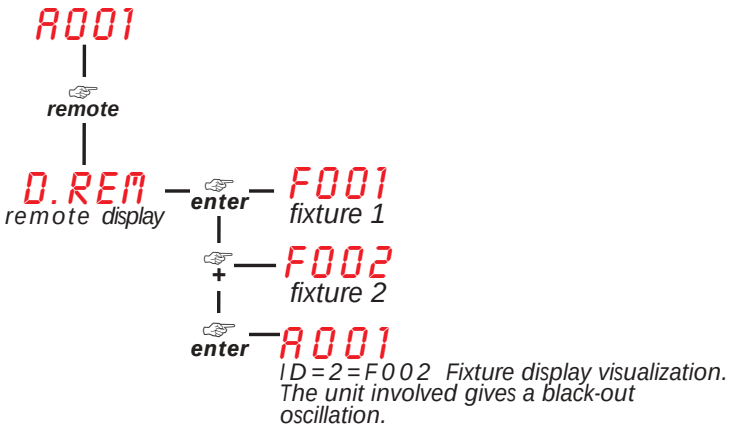


The interrogation procedure is now complete.

10. Replicating a connected projector's display

*After having interrogated the dmx universe, the **DR1** will have identified compatible projectors in the system. The **DR1** will now allow you to replicate the respective projectors' displays:*

1. *Press the **remote button**: the **DR1** display will show D.REM;*
2. *Press the **enter button and the** display will show F (for fixture/projector) followed by an individual projector's id number, for example F001, indicating that the **DR1** has located a projector with the unique **ID=1**.*
   *Using the **+** and **-** you are able to scroll through the id numbers of the connected projectors up to a maximum of 250 projectors = F250.*
3. *To identify which particular projector is being addressed at any given time, press the enter button. This will cause the particular projector's dimmer to flash open and then close. With this, the **DR1** will initiate the replication of the selected projector's display.*
4. *Repeat this operation for any other projector connected to the **DMX 512 universe.***



*At this point, you may commence manipulating a projector's parameters via the **DR1**, which will replicate the projector's settings in its display.*
***NOTE:** to avoid accidentally altering the parameters of projectors with identical **IDs,** the **DR1** will not allow remote modification.*

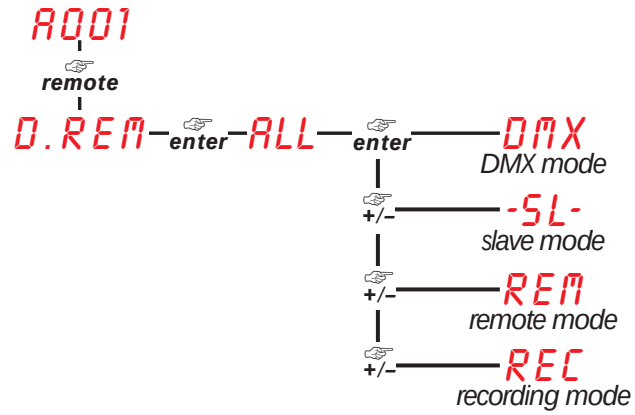
11. Navigation menu for projector displays replicated by the DR1

*We invite you to consult the respective manuals of the coemar projectors connected to your **DR1** regarding the functions available in particular projectors.*

12. Simultaneous activation of multiple projector's functions

*If in your particular **DMX512** universe there are several units of the same model connected, you have the ability to alter several of their parameters (REC, DMX, -SL- o REM) simultaneously, as described below:*

1. *Press the **remote button**: the **DR1** display will show D.REM.*
2. *Using the **+** and **-** buttons to scroll through the options until ALL is displayed.*
3. *Press the **enter** button. The display will indicate a range of functions which the particular projectors can have modified.*
4. *Press the **+** or **-** to select from the options available REC, DMX, -SL- and REM.*
5. *Press the **enter** button and all of the projectors of the same model as the one selected will have the particular parameter altered simultaneously.*



All projectors with the PPF facility may accept the REC option.
All projectors with Master/Slave facility may accept the DMX, SL, REM options.

13. Inserting an access PIN code

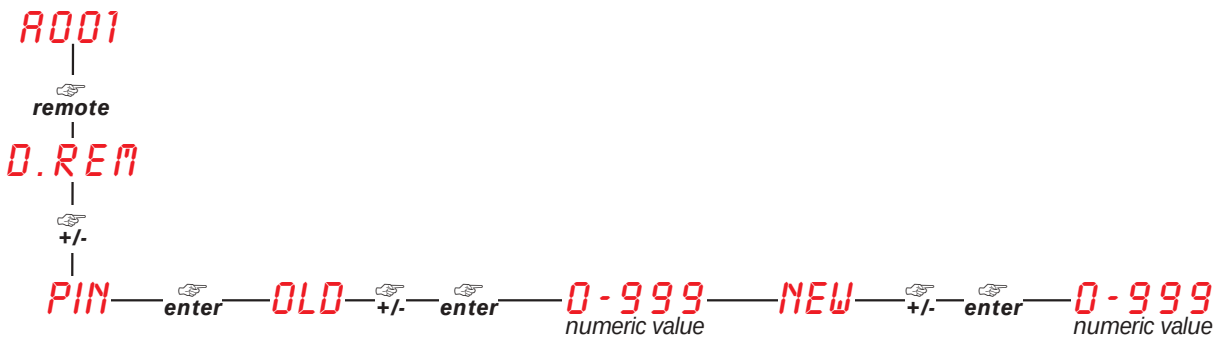
*For security reasons, you may wish to limit access to your **DR1** using a pin code.*

Inserting a PIN code:

***1.** Press the **remote button**: the **DR1** display will show D.REM*
***2.** Using the **+** or **-** buttons, scroll through the options until PIN is displayed.*
***3.** Press the **enter button**; the display will show NEW*
***4.** Using the **+** or **-** buttons, select a number between **0** and **999**, then press the **enter button**: the **DR1** will record this as your access pin, and will request that you enter this number every time you switch on the unit.*

Altering a pin:

***1.** Press the **remote button**: the **DR1** display will show D.REM*
***2.** Using the **+** or **-** buttons, scroll through the options until PIN is displayed.*
***3.** Press the **enter button**; the display will show OLD*
***4.** Enter the current pin and press enter; if the old pin is correctly entered, the **DR1** will accept the the pin and will allow you to proceed.*
***5.** The display will show NEW.*
***6.** Using the **+** or **-** buttons, select a number between **0** and **999**, then press the **enter button**: the **DR1** will record this as your new access pin, and will request that you enter this number every time you switch on the unit.*

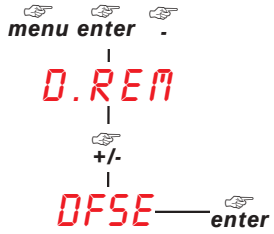


Deactivating the pin:

***NOTE**: inserting a PIN as "0" will deactivate this security feature.*

Should you forget your PIN you may perform an EMERGENCY RESET as follows:

1.** Power up the **DR1** whilst simultaneously holding down the **menu**, **enter** and **- buttons.
***2.** Via the **+** or **-** buttons, scroll through the options until DFSE is displayed.*
***3.** Press the enter button; the **DR1** will reset all its internal parameters and deactivate the PIN code.*



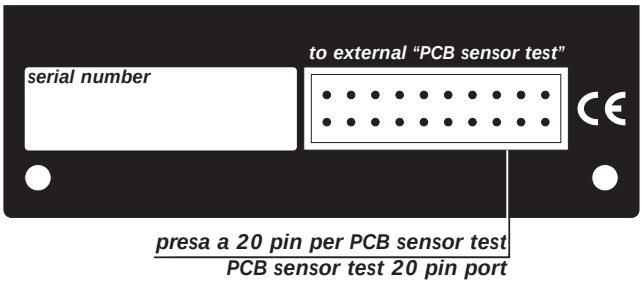
14. Utilising the Sensor Test PCB

*By utilising the **Sensor Test PCB**, the **DR1** is able to test all the magnetic sensors, as well as light output, temperature and movement.sensors of compatible coemar projectors.*
Using the kit and cables provided in the packaging you will be able to quickly monitor the various sensors located in your projector for faults and operation

*If the **DR1**. **sensor test PCB** is not included with your **DR1**, it may be purchased via the **coemar** sales network as part number PCO9704*

14.1 Connecting the Sensor Test PCB

*To test the sensors, connect the **Sensor Test PCB** to the **DR1** via the 20 pin socket located at the rear of the **DR1***

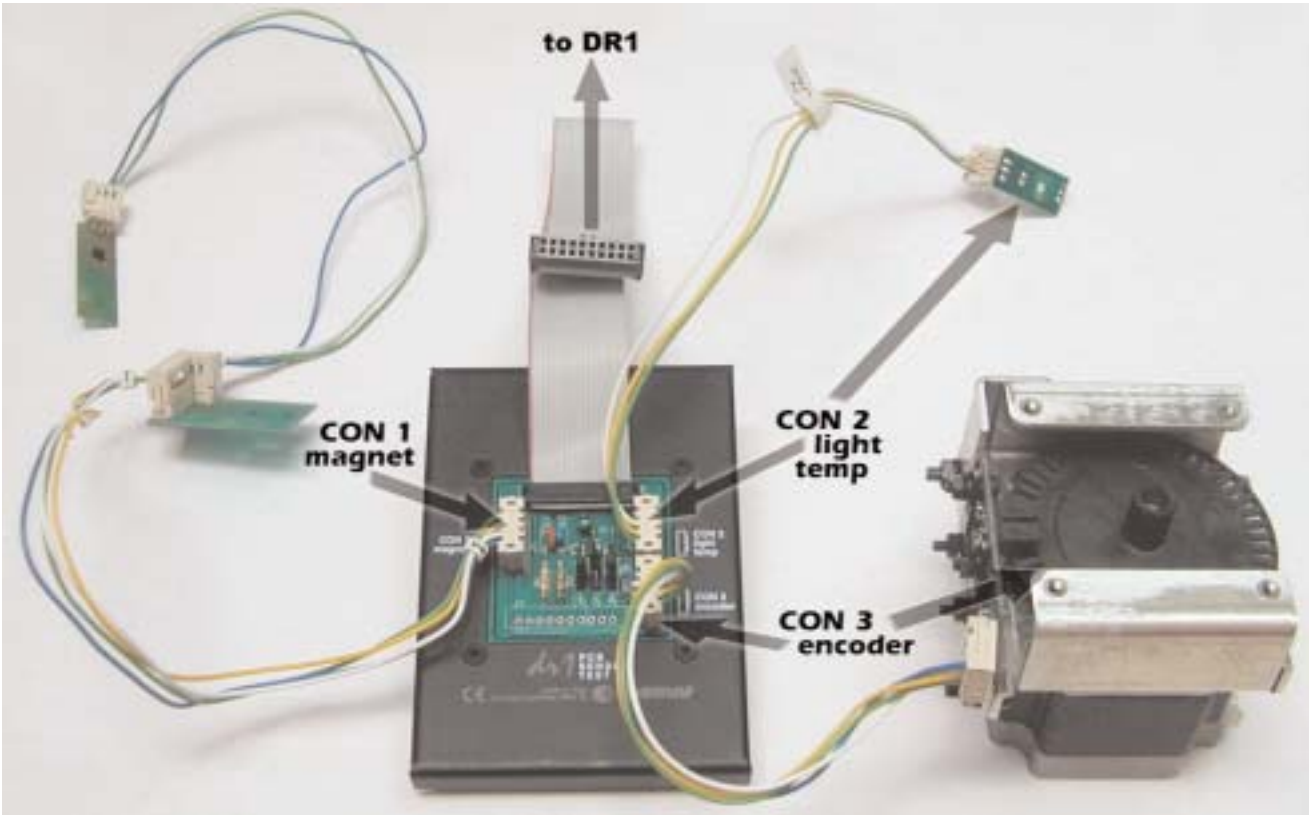


14.2 Sensor Testing

*The **Sensor Test PCB** is equipped with three connectors labeled **con 1**, **con 2** and **con 3**, designed for various types of sensors : magnetic (**con 1**), light and temperature (**con 2**) and movement (**con 3**).*
To test the sensors you will need be in possession of a circuit diagram fro the compatible projector and a good understanding of the projector's operation.

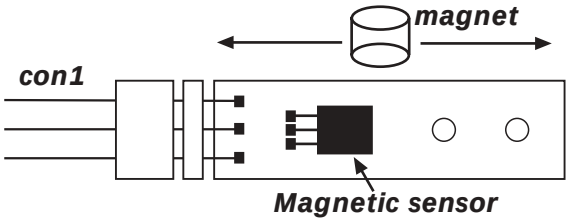
***Sensor Test PCB** is designed to allow technical personnel the ability to test the various sensors, connectors and cabling in order to quickly determine the origin of a malfunction in a compatible projector.*

The array of cables and sensors included in the kit will help you to familiarise yourself with the proper functioning of the projector by connecting various components to the internals of the projector and obtaining the required diagnostic information.

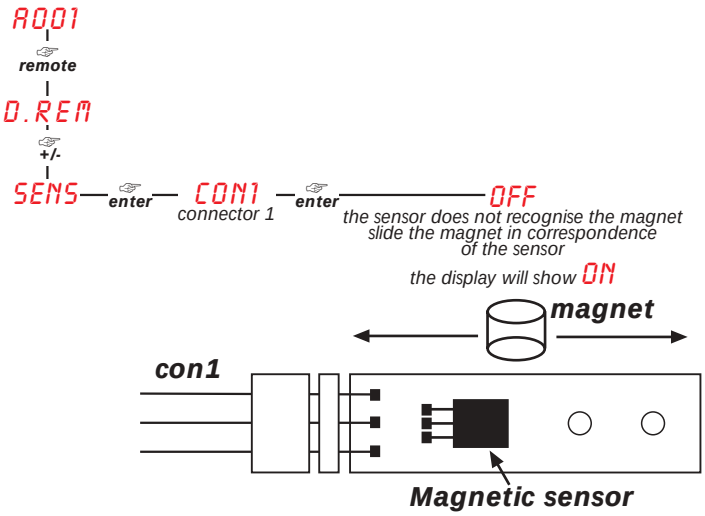


magnetic sensor (CON 1)

*Via the **con1** connector, you are able to test all the magnetic sensors of your projector as well as associated cabling and connectors. In fact, you will be able to isolate defective magnetic sensors by connecting them to **con1** of your **sensor test PCB** and by using the magnet provided simply moving it towards and away from the sensor. If the display of the **DR1** alternates between ON and OFF the sensor is functioning correctly, otherwise it will require replacement.*
*In a similar manner, you may also check for proper connection of the connectors and the integrity of the cabling by disconnecting the sensor's cable by its flanks at the motherboard and connecting one end to the **con1** connector of the **sensor test PCB** and the other to the magnetic sensor provided with the kit. As before, moving the magnet forward and back will cause the display of the **DR1** to alternate ON and OFF if the cabling is undamaged. If not, the fault may lie with the cable or the connector.*

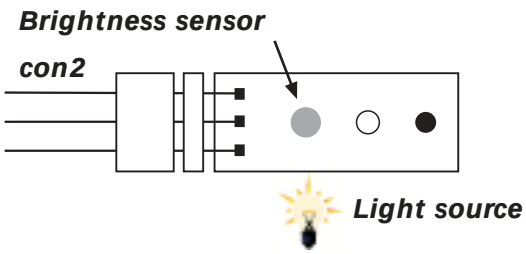


1. *Attach the **CON1** connector to the magnetic sensor of your projector.*
2. *Position the magnet in proximity to the sensor.*
3. *Press the **remote** button on the display of the **DR1**; the display will show D.REM*
4. *By using the **+** or **-** buttons, scroll to the SENS option.*
5. *Press the **enter** button; via the **+** or **-** scroll to CON1*
6. *Press the **enter** again and the display will show OFF. Move the magnet along the length and the display will show ON to indicate that the connector and cabling is operating correctly and that the magnet and sensor are correctly positioned with correct polarity.*
7. *Repeat the procedure with all the magnetic sensors that need testing.*



light sensor (CON 2)

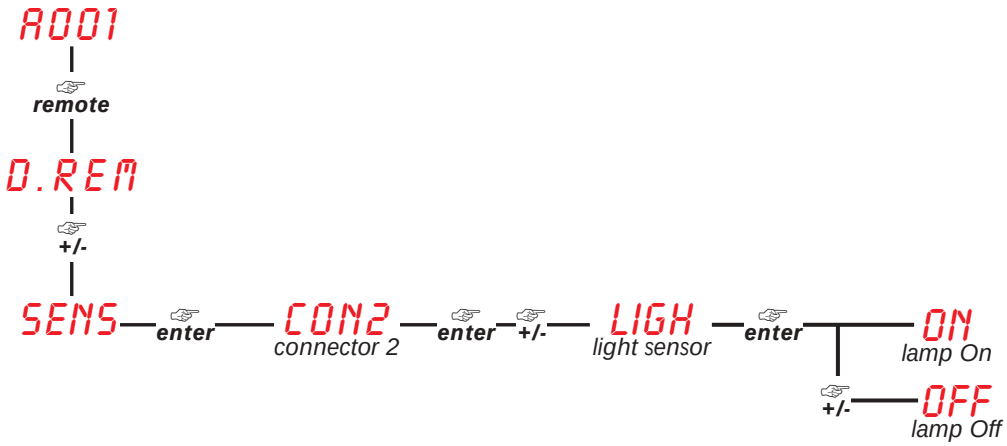
*Via the **con2** connector you may test the correct operation of the light sensor within the projector as well as of its connectors and cabling. Locate the light sensor within the fixture and attach it to the **con2** connector of the **sensor test PCB**. Turn on the lamp and the display of the **DR1** should read ON. If this is not the case, the sensor will require replacement. Additionally, you may also test the connector and cabling by isolating the cable which connects the sensor to the motherboard and connecting one end to the light sensor provided in the kit and the other end to the **con2** connector of the **sensor test PCB**. By moving the light sensor close to and away from a light source, the display of the **DR1**. will alternate ON and OFF. Should this not be the case, the cabling is damaged and will require replacement.*



1. *Attach the **CON2** connector to the light sensor of your projector.*
2. *Turn on the lamp*

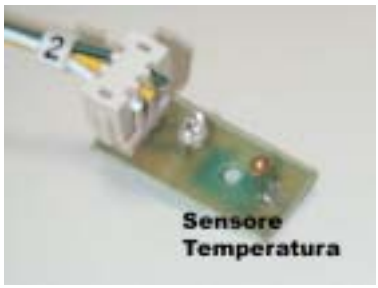
3. *Press the **remote** button on the display of the **DR1**; the display will show* D.REM
4. *By using the **+** or **-** buttons, scroll to the* SENS *option.*
5. *Press the **enter** button; via the **+** or **-** scroll to* CON2
6. *Press the **enter** button; via the **+** or **-** scroll to* LIGH
7. *Press the **enter** button again and the sensor A will register the presence of light and the display will show* ON *if the lamp is on and* OFF *if the lamp is off or there is an absence of light.*
8. *Repeat the procedure with all the light sensors that need testing.*

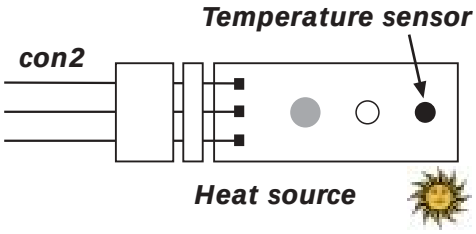
If the sensor does not register the presence of light and simply shows OFF *it is either defective or badly connected.*



temperature sensor (CON 2)

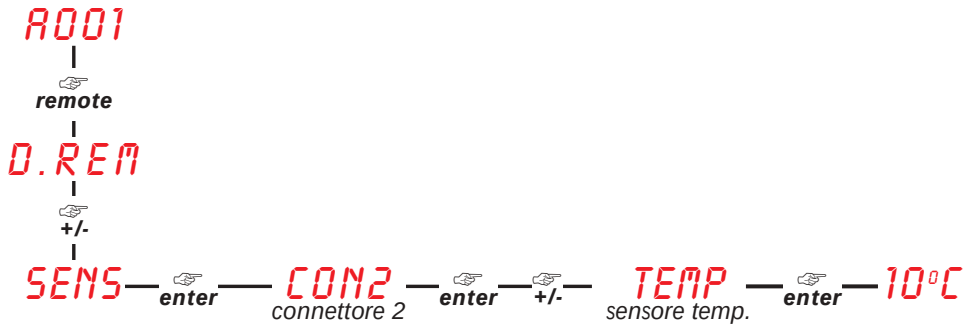
*Via the **con2** connector you may test the correct operation of the temperature sensor within the projector as well as its connectors and cabling. Locate the temperature sensor within the fixture and attach it to the **con2** connector of the **sensor test PCB**. By heating up the sensor, the display of the **DR1** should display a temperature (for example* 27°*). If this is not the case, the sensor will require replacement. Additionally, you may also test the connector and cabling by isolating the cable which connects the sensor to the motherboard and attaching one end to the sensor provided with the kit and the other end to the **con2** connector of the **sensor test PCB** and then moving the sensor close to and away from a heat source. By doing so, you should register a change in the temperature displayed on the **DR1**. Should this not be the case, the cabling is damaged and will require replacement.*





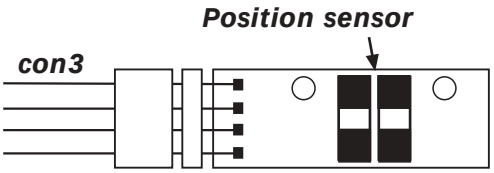
1. *Attach the **CON2** connector to the temperature sensor of your projector.*
2. *Press the **remote** button on the display of the **DR1**; the display will show* D.REM
3. *By using the **+** or **-** buttons, scroll to the* SENS *option.*
4. *Press the **enter** button; via the **+** or **-** scroll to* CON2
5. *Press the **enter** button; via the **+** or **-** scroll to* TEMP
6. *Press the **enter** button again and the sensor will register the temperature in degrees centigrade and the display will show, for example,* 27°.
7. *You should heat or cool the sensor to verify its operation and the changed display on the **DR1***

If the sensor does not register a temperature or a change in temperature when heated or cooled, it may be defective and will require replacement.

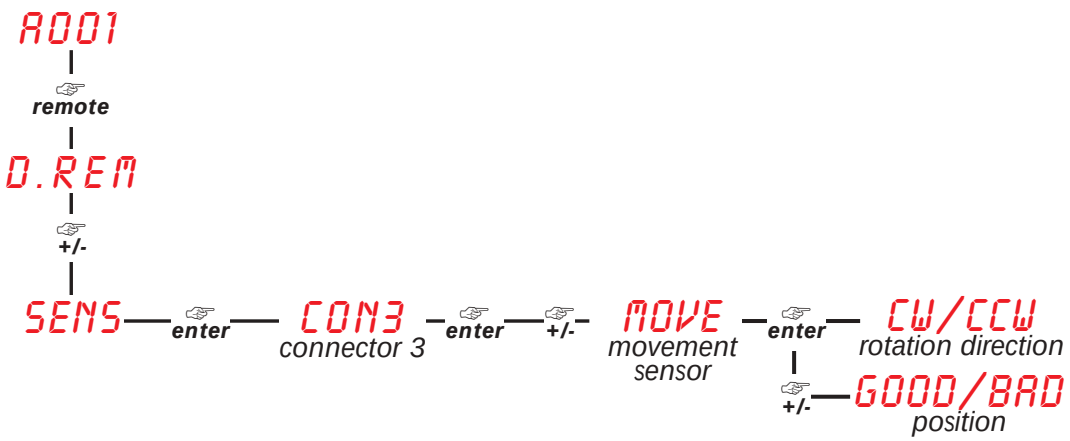


movement sensor (CON 3)

*Via the **con3** connector you may test the correct operation of the movement sensors within the projector as well as of the connectors and cabling associated with movement and the precision of the encoder wheel. Locate the movement sensor within the fixture and attach it to the **con3** connector of the **sensor test PCB**. By moving the encoder wheel, the display of the **DR1** should display either CW or CCW depending upon the direction of the movement. The display will also provide information about the state of the double encoder sensor, showing either GOOD (correct) or BAD (incorrect). If this is not the case, the sensor will require replacement. Additionally, you may also test the connector and cabling by isolating the cable which connects the sensor to the motherboard and attaching one end to the sensor provided with the kit and the other end to the **con3** connector of the **sensor test PCB** and then moving the encoder wheel. By doing so, you should register a change in the display on the **DR1**. Should this not be the case, the cabling is damaged and will require replacement.*



1. *Attach the **CON3** connector to the temperature sensor of your projector.*
2. *Press the **remote** button on the display of the **DR1**; the display will show D.REM*
3. *By using the **+** or **-** buttons, scroll to the SENS option.*
4. *Press the **enter** button; via the **+** or **-** scroll to CON3*
5. *Press the **enter** button; via the **+** or **-** scroll to MOVE. Moving the encoder wheel, which is located internally in the projector alongside the pan and tilt motors, in either a clockwise or anticlockwise direction will cause the display of the **DR1** to display either CW or CCW. The display will also provide information about the state of the double encoder sensor, showing either GOOD (correct) or BAD (incorrect). Should the display show BAD, check the cabling and connectors and the distance between the two sensors on the encoder wheels, which may be too close or too far apart.*
6. *You should repeat the operation for all the movement sensors within the unit.*



15. Error messages

EPER:

EEPROM Error
The EEPROM is either defective or absent; refer to your coemar service centre for a replacement component.

DTER:

DATA Error
The initial parameter settings of the DR1 are either incorrect or corrupt; the DR1 has reloaded its factory default settings. Turn the unit off and on again. Should the error persist, replace the EEPROM replaced.

FOER:

EXPLORATION Error
An error has been identified during the exploration procedure. Repeat the procedure. If the error persists check the connector plugs and sockets in the dmx universe.

RHER:

RECEPTION Error
The system is not communicating correctly. Check the connector plugs and sockets in the dmx universe.

IDER:

PROJECTOR ADDRESS Error
If this error occurs persistently, there is a strong possibility that you have two or more projectors with identical IDs. Locate the projectors and alter one or both IDs.

MISS:

PROJECTOR MISSING Message
The selected projector is not responding. Perform the EXPL (exploration) function to identify all the compatible projectors currently installed and operating.

MISM:

PROJECTOR DIFFERENT Message
You have attempted to perform the REC function on different model projectors. The REC function may only be performed on projectors of the same model.

NONE:

NO PROJECTOR Message
This message will appear when attempting to select projectors after the most recent exploration operation has indicated no projectors present.

MOVE:

MOVEMENT AWAITED Message
This message may appear when testing encoders and requires you to move the specific device in order allow the testing to occur.

GOOD:

TEST ENCODER POSITIVE Message
This message may appear when testing encoders to indicate a positive result.

BAD:

TEST ENCODER NEGATIVE Message
This message may appear when testing encoders to indicate a negative result.

OLD:

PIN REQUEST Message
This message may appear during the altering PIN operation. and requires you to enter the currently valid pin code.

NEW:

INSERT NEW PIN Message
This message may appear during the altering PIN operation. and requires you to enter the new pin you wish to use.

16. Technical characteristics

Power supply: +9/30 V DC
Power supply 115/240 V AC 50/60 Hz included
Output data protocol ***DMX 512-A*** *via XLR/5 F*
Input data protocol ***DMX 512*** *via XLR/5 M*
Display replication for a max of 250 projectors
Power on/off switch
*20 pin socket for connection of external devices (****Sensor test*** *PCB and future releases)*
Conforms to CE norms
Weight: 0,5 kg.

17. Spare parts

All the components of the ***DR1*** *are available as replacement spares from your authorised* ***coemar*** *sales agent.*
Accurate description of the equipment, model number, and type will assist us in providing for your requirements in an efficient and effective manner.

coemar spa

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46042 Castelgoffredo (Mantova) Italy
Tel. 0376/77521
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manuale istruzioni
instruction manual

DR1 Display Replicator
Sensor Test PCB
1^ edizione giugno 2002
1st edition june 2002