

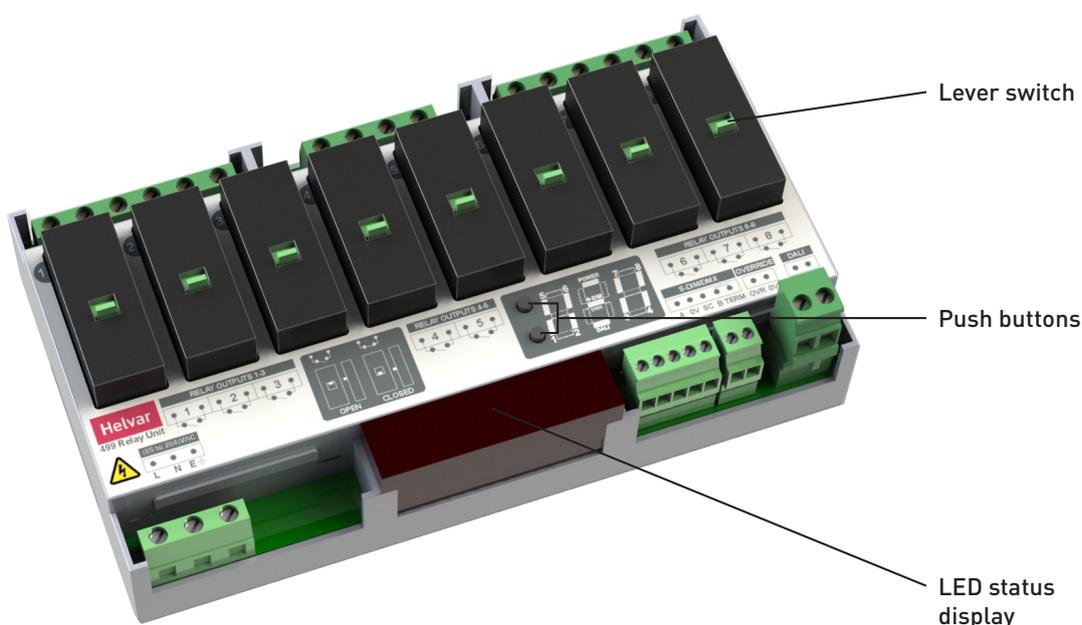
1. Product Description

The DIGIDIM 8-Channel Latching Relay Unit is an eight-channel controller fitted with single-pole 20 A latching relays with high-inrush capability.

The 499 can operate with either a Helvar DIGIDIM or Imagine lighting control system and is DIN-rail mounted for ease of installation.

The unit has the following main elements:

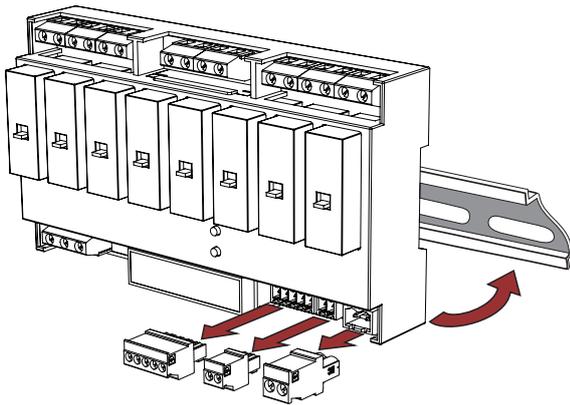
- a lever switch per channel that allows manual switching
- two push buttons ('up' and 'down') for monitoring, manual configuration and control purposes
- a three-digit, seven-segment LED display (normally showing device activity)



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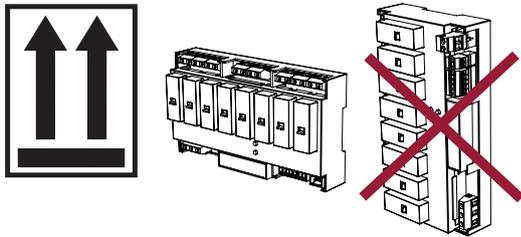
2.1



Location

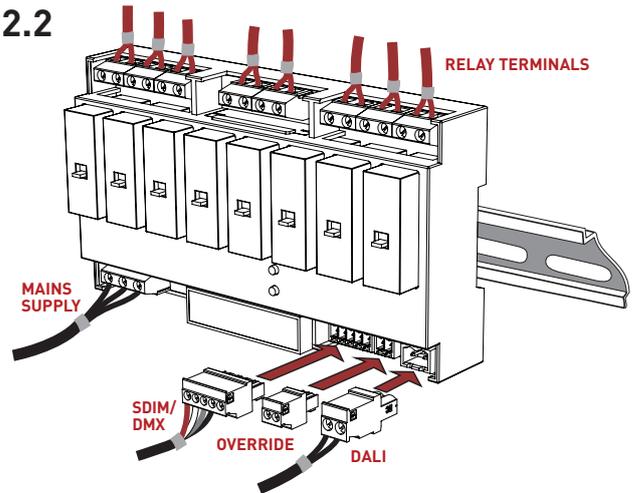
- For installation in a restricted access location only.

Position & Ventilation



- Install the unit horizontally to allow for heat dissipation.
- Any enclosure must provide adequate cooling ventilation.

2.2



Electrical

- Do not connect DALI and SDIM/DMX at the same time.
- Isolate the mains supply before installation.
- The control supply must be protected: 6 A MCB max.
- All DALI and mains cabling must be 230 V mains rated.

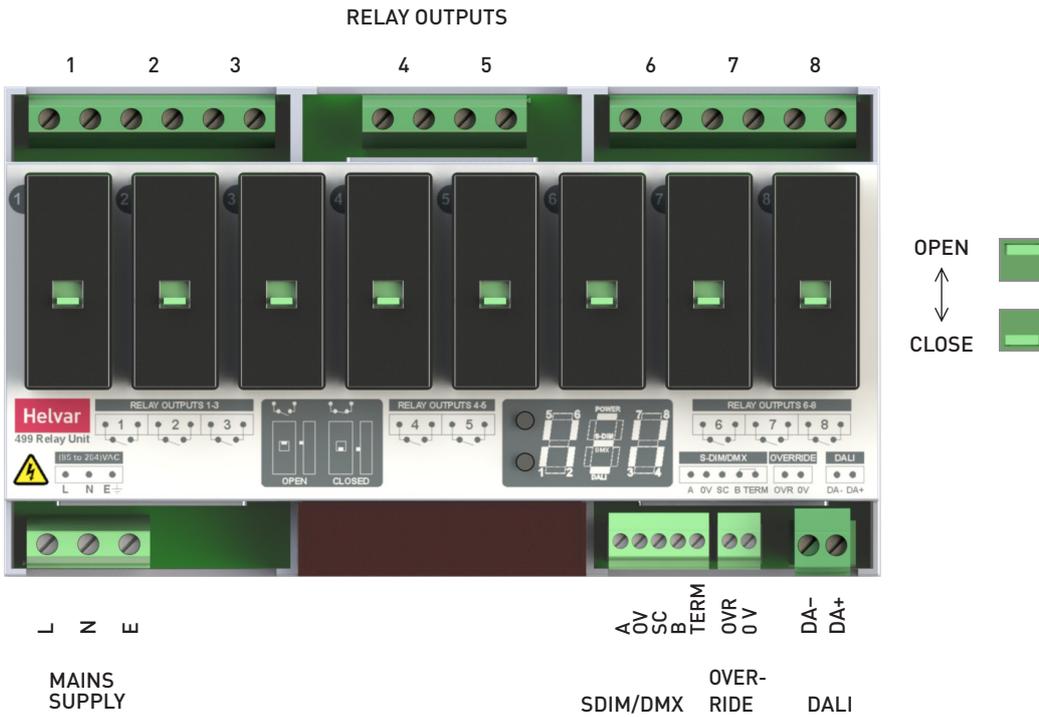
Cable Information

Cable	Cable Type
DALI	Two-wire mains rated. 0.5 mm ² to 1.5 mm ² Max. length 300 m (with 1.5 mm ² cable). Example: Belden 8471.
Mains cable / Relays	Max. 2.5 mm ² stranded (4 mm ² solid).
SDIM/DMX	Low loss RS485 Type (multistranded, twisted and shielded). Note: One twisted pair for A and B (85 Ω to 100 Ω impedance), one core or twisted pair for 0 V, and shield for screen. Size: 0.22 mm ² to 1.5 mm ² . Core: 3 or 4 + Screen. Max. length 1000 m (low-loss cable). Example: Belden 8102 or Alpha 6222C.
Override	Two-wire. 0.5 mm ² to 1.5 mm ² . Max. cable length 50 m.

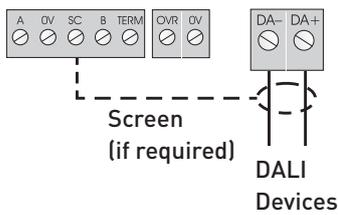
3. Connections



freedom in lighting



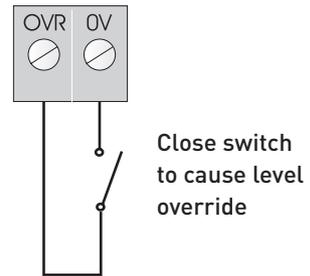
DALI Connection



Note 1: Functional earth connection used for DALI/SDIM/DMX screens only.

Note 2: Do NOT connect DALI and SDIM/DMX at the same time.

Override

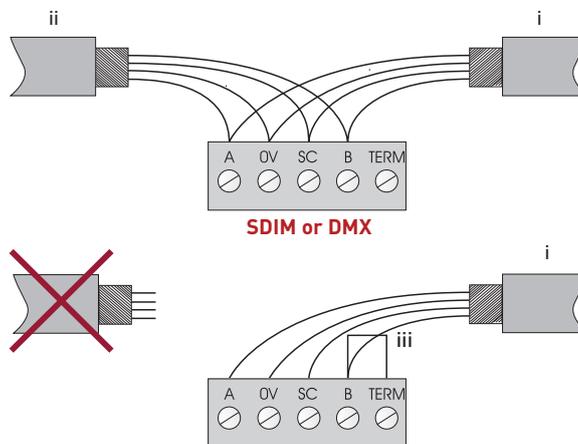


$V_{in} < 1.5 V$
 $I_{short} = 1 mA$

Input for override

Note: Maximum cable length = 50 m.

SDIM/DMX



i = SDIM or DMX Data Cable (from previous device)

ii = SDIM or DMX Data Cable (to next device)

iii = Link (0Ω) for Termination (if unit is at end of SDIM/DMX cable line)

Note: Keep unshielded wire lengths to a minimum.

During power up, the following sequence is displayed on the LED control panel.

Each display is held for one second. At the end of this sequence, the 'Status' display appears.

Start-up Sequence

1. All segments on



2. Product model



3. Software version



4. Normal Operation (Status Display)



Functional Note

If the 499 unit is connected to a Helvar Lighting Router (905, 910, 920) DALI subnet and the router loses power or subnet communication is lost, or if the 499 loses power itself, you can still change the state of the relays.

If power is still present to the 499 relay channels, you can manually operate the loads via the associated relay lever switch. When the power/system returns to normal operation, the 499 unit will function depending on how the options for power on, system failure and correct levels have been set. Leaving them as default (described below) results in the relay channel being unaffected until a scene recall is made by the system.

Default Settings (Router DALI subnet only, user-definable in Designer software)

Power On This Channel To – Ignore

This is the level to which the relay channel will go when it is being powered. 'Ignore' means that the relay channel will remain 'as is'.

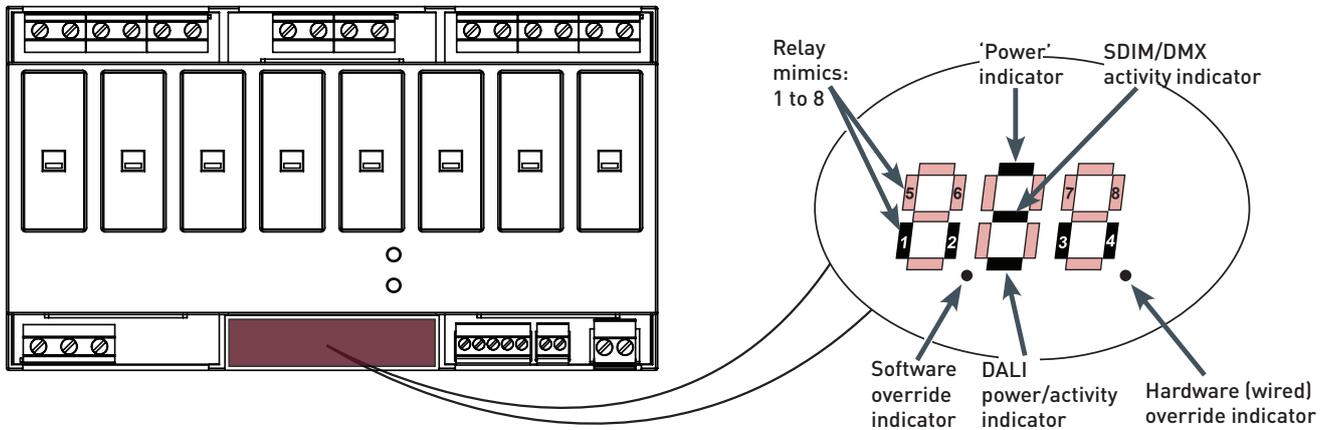
System Fail Level – Ignore

This is the level to which the relay channel will go when the power on the DALI subnet or communication with the router is lost. 'Ignore' means that the relay channel will remain 'as is'.

Correct Levels – False

This feature allows the router to correct channel levels that may have changed since the last level command issued by the router. 'False' means that the router will not send corrections.

The 'Status' display is the default view in operation. It is the starting point for navigating and configuring the 499.



Key and LED Descriptions

'Power' Indicator

The 'power' indicator (top segment of the middle digit) is always on when the status display is active.

SDIM/DMX Activity Indicator

The SDIM/DMX activity indicator (centre segment of the middle digit) is normally off. It flashes on intermittently if any SDIM/DMX activity (communications) is directed to a channel within the unit.

DALI Power / Activity Indicator

The DALI indicator (bottom segment of the middle digit) is off if there is no DALI power, and on if DALI power is present. If any DALI activity is directed to a channel within the device, the indicator blinks off.

Relay Mimics

The relay mimics (1, 2, 3, 4, 5, 6, 7 and 8) are illuminated when the relays are on, and not illuminated when the relays are off [0 %].

Hardware (Wired) Override Indicator

The decimal point on the right is illuminated to indicate wired override is active. The middle digit of the display will also flash an alternating pattern.

Software Override Indicator

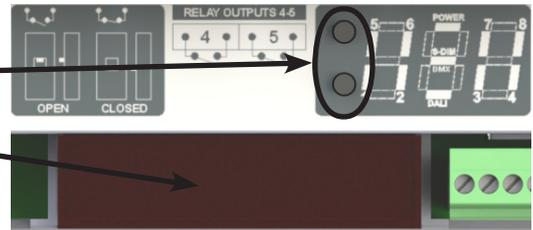
The decimal point on the left is illuminated to indicate override test has been selected via the menu. The middle digit of the display will also flash an alternating pattern.

6. Navigating the Menu

The status display LEDs on the front of the unit are lit in the following way when power is on:



Navigate through the 499 menus using the 'Up'/'Down' push buttons located on the front of the unit, above the Status Display.

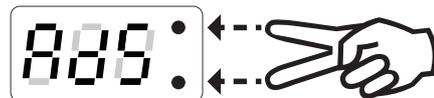


Note: For simplicity, the 'Up'/'Down' push buttons are shown next to the Status Display in the following figures.

Cycle Through the Menu

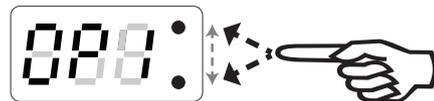
1) Press both buttons simultaneously to cycle through the menus.

Tip! To cycle through the menus quickly, hold down both buttons.



Select the Desired Channel to Modify

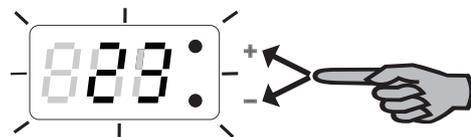
2) At your chosen function, quickly press up or down button to scroll through the channel destinations. These channels will be affected by the following settings:



Note: Select 'ALL' to alter all channels simultaneously.

Modify Function Settings

3) Hold up or down buttons to alter the levels, settings, fade times, output modes (dependent on function activated).
For further details, see '7. Configuring the Unit' on page 8.

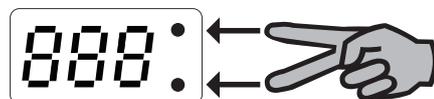


Note: LEDs blink if the value has been changed and not yet stored.

Save Changes

4) Hold both buttons together to save the change.

The LEDs will show '888' for 1/2 second to confirm setting is stored.



Back to Previous Menu

To go back to the previous menu, do not touch the buttons for 5 seconds.



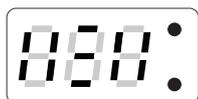
Back to Status Display

10 seconds of inactivity returns the 499 to the Status Display screen.

Tip! You can also return to the status display by cycling through all the menus.



Various settings can be configured via the control panel.



Status Display / Set Channel Level

Set Channel Levels (0 – 100 %) by using the push buttons in the 'Status' menu. Select the channel(s) to change, then hold the up or down button to alter levels.

For further information, refer to the 'Quick Start Guide' in Section 10.

Note: You can access 'Status Display / Set channel level' mode whilst the device is in override mode, but it is not possible to change the channel levels.



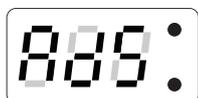
Number of Channels

Set the number of device channels to 2, 4 or 8.

Note: In two-channel mode: (1 + 2 + 3 + 4); (5 + 6 + 7 + 8)

In four-channel mode: (1 + 2); (3 + 4); (5 + 6); (7 + 8)

In eight-channel mode: 1; 2; 3; 4; 5; 6; 7; 8



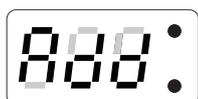
Set SDIM/DMX Address

Set the SDIM or DMX address for each channel.

Select **bRS** to set the SDIM or DMX base address. SDIM: 252 addresses available.

DMX: 512 addresses available.

Note: DMX updates are disabled while using manual control.



Set DALI Address

Set the DALI address for each channel. Select **bRS** to set the DALI base address.

DALI: 64 addresses available.



Enable/Disable DMX

Enable or disable DMX from this menu.

When DMX is enabled ('On') it will use the SDIM address.

There is no channel select option; it is a global setting.

Note: DMX is disabled by default.

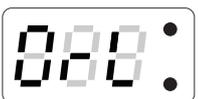


Minimum Fade Time

Set the minimum fade time for the channels.

Select the minimum fade time for each channel individually or **ALL** channels simultaneously.

Minimum fade time can be set to: 1.00 second, 0.50 seconds, 0.15 seconds and 0.02 seconds.



Override Level

The override level can be configured for individual relay channels or **ALL** channels and ranges from 0 to 100. It can be tested manually via the override test function ('**O-R-E**')

Note 1: When SDIM/DMX is connected, the override settings in the router (configured using Designer software) will take precedence over the device's override settings unless you configure the software to use the device override settings.

Note 2: When the unit is running in override, the left decimal point is illuminated and the middle digit of the screen flashes in the status screen.

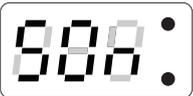


Override Test

Test that the override level (set in the previous mode) functions as required, by choosing ON or OFF. The unit performs as if an override has been caused by the override input connection.

Note 1: *If you switch this setting to ON, you will not be able to edit the channel levels manually in 'Status Display / Set Channel Level' menu.*

Note 2: *To change the channel levels, make sure that override is switched off.*



Switch-On Level (SDIM/DMX only)

Set the switch-on levels for SDIM/DMX channels.

SDIM: 2 % – 64 % (Default 2 %);

DMX: 0.1 % – 64 % (Default 0.1 %)

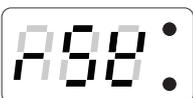


Set Minimum Level (DALI only)

Set the minimum level for DALI channels.

DALI: 0.1 % – 100 % (Default: 0.1 %)

Note: *The minimum level value will be overridden if the 499 is connected to a 910 or 920 router system.*



Restore to Factory Default

Hold the up or down buttons for 10 seconds in this menu.

The decimal points will light up in sequence. Then '8.8.8.' will show for 1 second to confirm that factory settings have been restored.

Note: *Restore to Factory Default will cause all existing manually configured settings to be lost.*

8. Troubleshooting and Error Messages

If an error occurs, please contact Helvar Support (for details, visit www.helvar.com).

These details may be of assistance if an error message is displayed:



Communications Error (SDIM/DMX Only)

E88 indicates a problem with the SDIM or DMX communications. Please check wiring and terminations.

Make sure that no two channels have the same addresses on the network, and that the SDIM/DMX mode is selected correctly.

Important Considerations

- Do not connect DALI and SDIM/DMX at the same time.
- If DMX does not work, make sure that it has been switched on in the *d7H* menu. Then it is possible to set the DMX addresses in the *Rd5* menu. For further information, see '7. Configuring the Unit' on page 8.

Physical selection mode is activated using a Helvar remote control unit. It allows loads and controls to be grouped together without the use of programming software. For details, refer to the equipment instructions.

Follow these steps to identify a piece of equipment using physical selection mode.

Note 1: Use the Remote Control Handset, with a DIGIDIM control device, to put the device into 'Physical Selection' mode. Refer to the 'DIGIDIM Lighting Control – Designing, Specifying and Installing' System Manual.

Note 2: The 'Physical Selection' display is identical to the 'Status Display / Set Channel Level' display, except for the decimal point flashing.

1. Put the device into physical selection mode.
The centre decimal point on the display screen flashes to indicate that the device has entered 'Physical Selection' mode.
2. From the control panel, repeatedly press 'up' or 'down' button to scroll between channels.
The selected channel mimic(s) flash(es).
3. To physically select the channel, hold the 'up' or 'down' button.
The centre decimal point stops flashing for two seconds to indicate a successful programming.
4. Repeat step 2 and 3 for each channel, as necessary.
5. End 'Physical Selection' mode (at the device).
You are returned to the 'Status' display.

Technical Data

Connections

DALI:	0.5 mm ² – 1.5 mm ² stranded or solid core (max. 300 m @ 1.5 mm ²)
Mains/relay:	Up to 4 mm ² solid core or up to 2.5 mm ² stranded
SDIM/DMX:	0.22 mm ² – 1.5 mm ² low-loss RS485 Type multistranded, twisted and shielded
Cable rating:	All cables must be mains rated.
Power	
Mains supply:	85 VAC – 264 VAC 45 Hz – 65 Hz
Power consumption:	0.3 W
Internal losses:	0.6 W per channel at 20 A
Control circuit protection:	6 A maximum. The unit's mains supply must be protected.
Isolation:	3 kV between every connector, with these exceptions: SDIM 0V and OVR 0V are NOT isolated from each other.

DALI

DALI addresses:	8, 4, or 2
DALI consumption:	2 mA

Inputs

Communication:	DALI, SDIM and DMX
Override:	Wired override input
User interface:	2 push buttons for configuration
Channels:	8
Relay contacts:	High inrush 500 A / 2 ms
Relay voltage:	240 VAC / 400 VAC
Max. load per contact:	20 A resistive / incandescent; 20 A, PF 0.6 / fluorescent
Number of devices:	For ballasts, quantity is limited by MCB; refer to manufacturer's data. Relay circuit external protection must not exceed 20 A. These are power relays and are not suitable for extra-low voltage operation. Where power relays are used to control contactors, snubbers must be fitted.

Mechanical data

Dimensions:	160 mm × 100 mm × 46 mm
Housing:	9 U white plastic (polycarbonate) DIN-rail case
Weight:	425 g
IP code:	IP20 (IP00 at terminals)

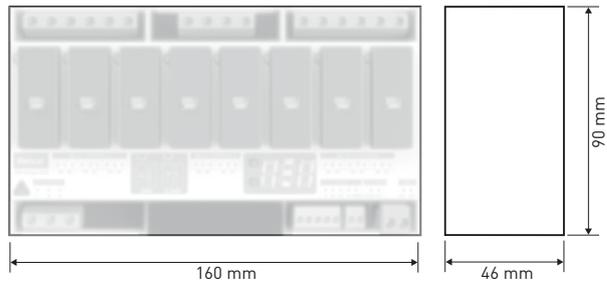
Operating and storage conditions

Ambient temperature:	0 °C to +40 °C
Relative humidity:	Max. 90 %, noncondensing
Storage temperature:	-10 °C to +70 °C

Conformity and standards

DALI standard:	IEC 62386:101 2014 IEC 62386:102 2014 IEC 62386:208 2009
Emission:	EN 55015
Immunity:	EN 61547
Safety:	EN 60950
SDIM:	Helvar SDIM protocol
DMX:	DMX512-A protocol
Environment:	Complies with WEEE and RoHS directives.

Dimensions



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