

MULTIDIM PLUG-IN MODULAR DIMMERS

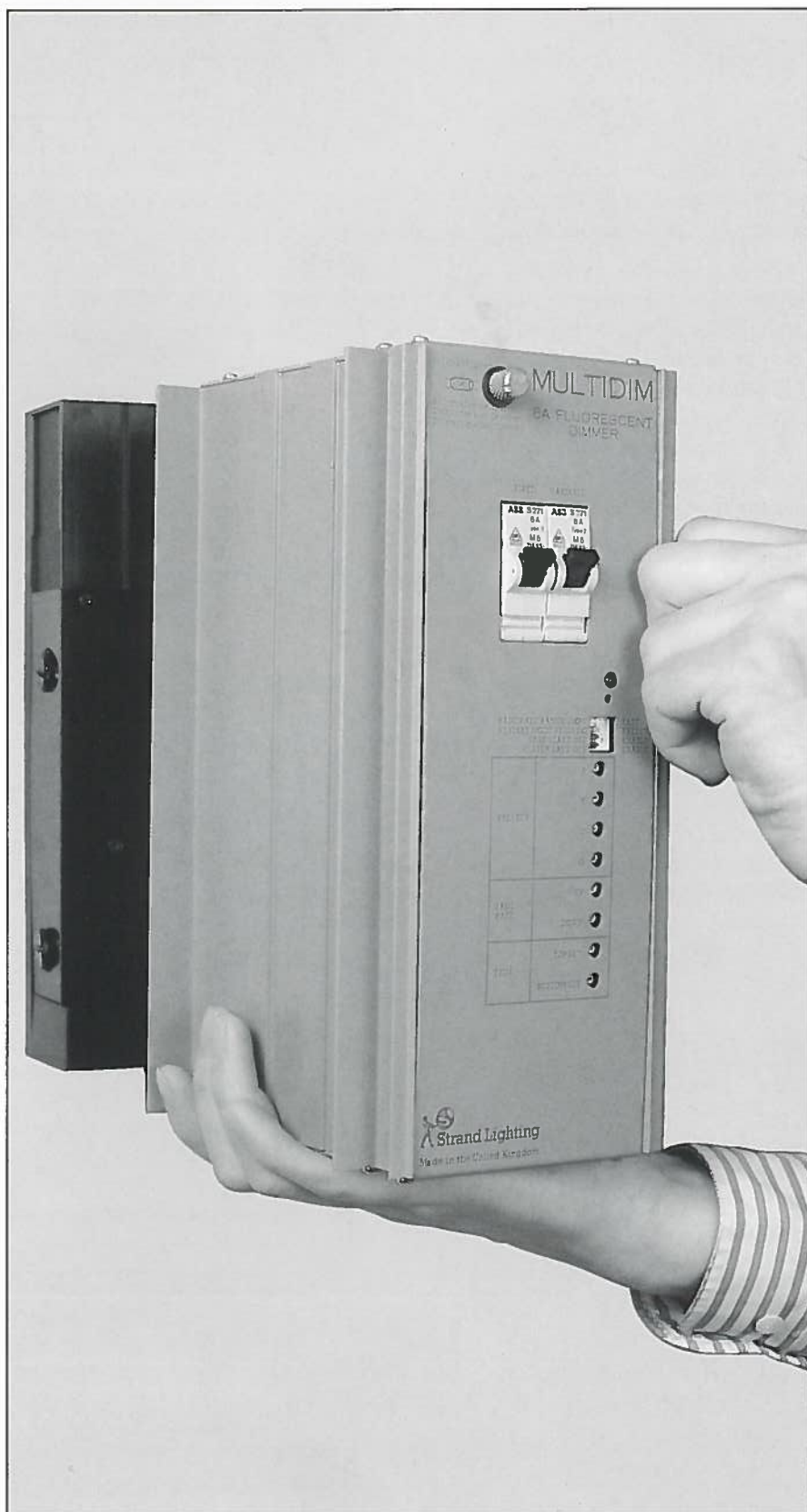
The Multidim range of modular, plug-in dimmers can build into integrated systems to control a mixture of lighting loads.

Each module is supplied complete with its own base unit, which fixes directly onto a wall or onto a Strandrail, (see back page) ready to terminate all wiring connections.

Modules can be installed individually or in groups. When installed in groups, the base unit forms two trunking sections for separately routing the control and mains cables to and from the dimmers. The base unit also incorporates 130 Amp rated supply busbars, to facilitate use of optional installation accessories which enable a bank of dimmers to be supplied from a single feeder cable.

FEATURES

- Versions suitable for tungsten, transformer-fed or fluorescent loads.
- Module ratings of 6, 16, and 32 Amps: each dimmer fitted with load-protecting MCB.
- New style control stations with screwless face-plates, available in a variety of finishes (see separate data sheet).
- 'Fast-start' feature for dimming of h.f. electronic dimmable ballasts.
- Accessories to simplify installation.
- Genuine 'load independent' hard-firing of thyristors ensures the best ever quality of fluorescent dim.
- Versions for use with pushbutton (preset) or manual (fader) control stations.



APPLICATIONS

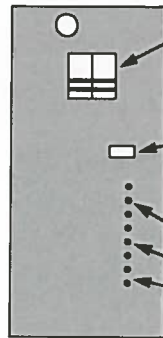
Tungsten Multidim is suitable for low voltage (transformer-fed) loads as well as for mains voltage tungsten or tungsten-halogen lamps.

Fluorescent Multidim is suitable for dimming either 38mm diameter (T12) or 26mm diameter (T8) lamps. The luminaire must be fitted with compatible dimmable control-gear.

FRONT PANEL FEATURES

In the case of preset type modules, the adjustment of the four preset light levels is carried out at the dimmer. Every

dimmer is supplied with an adjustment tool for this purpose. Other features are as below:



MCBs: Protect and isolate the load. The second MCB is only fitted on fluorescent versions (for the 'heater' circuit).

Restart mode: Preset dimmers have a user selectable start-up condition. Select either Preset A (on) or Preset O (off) as preferred.

Speed: Dual speed selector (Fade time).

Heater save: Automatically disconnects the fluorescent heater supply when not needed.

Fast start: Special feature for HF electronic ballasts — ensures safe starting for tubes.

Presets: Four level adjustments to set as required.

Speeds: Separate settings for up and down fade speed adjustments.

Trim: Top and bottom set adjustments.

Modules include only those of the above facilities which are appropriate to the version chosen.

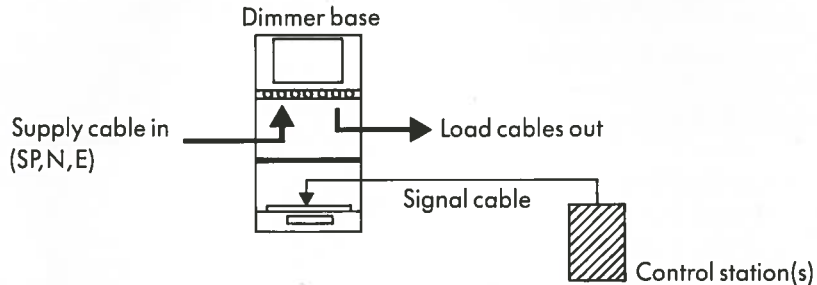
WIRING TO THE MODULE

The dimmer base contains two segregated compartments — the top one for all mains connections, and the lower one for termination of the cable from the remote control station.

For installations with more than one dimmer, the bases mounted side by side form a concealed 'trunking' to permit all cables for the group of modules to run

together and exit from either end of the row. Note that control

cables should normally be kept separate from mains cables.

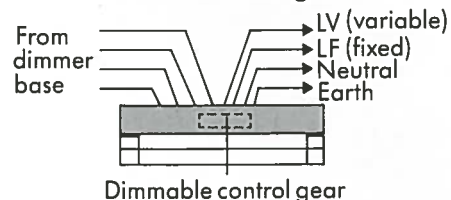


LOADING GUIDE

Fluorescent dimming

Fluorescent luminaires must be equipped with approved type of dimmable ballasts. Consult Strand if in any doubt about compatibility.

Four conductors are required* from the dimmer to the fittings. The two 'line' conductors must not be reversed at the fittings.



Maximum loadings are calculated according to quantities of tubes, as follows:

Transformer-fed loads

Transformer-fed loads such as low voltage lighting, cold cathode, or neon can all be dimmed within safety guidelines. Tungsten type dimmers are used, but they must be de-rated to allow for surge currents. De-rating guidelines are as shown below.

Dimmer rating	Maximum Transformer-fed load
6 Amp Tungsten	Up to 900 VA
16 Amp Tungsten	Up to 2400 VA
32 Amp Tungsten	Up to 4500 VA

For further guidance see also Strand's 'Guide to Dimming Transformer-fed Loads'.

Tungsten loads

For mains voltage loads, the module's MCB ratings indicate the maximum loading under normal conditions of supply and ambient temperature. It is normally advisable to allow a small margin below these values for supply fluctuations etc.

Slaving

A group of dimmers can be slaved together to respond in unison to a single control signal. This is useful in cases where a large load is to be dimmed, or where the overall load is to be split across more than one phase. Any number of dimmers can be slaved together to operate simultaneously under a single control channel.

Panic operation

Any dimmer may be driven full on by making a short circuit between a pair of the control terminals. This overrides the setting of the control station.

Dimmer Rating	Maximum number of tubes				
	2ft. 20W 18W	4ft. (40W or 36W)	5ft. (65W or 58W)	6ft. (85W or 70W)	
6 Amp Fluorescent	28+	15	14	9	7
16 Amp Fluorescent	64+	42	38	24	20
32 Amp Fluorescent	142+	85	71	44	37

* Assumes 20W tubes are wired as pairs to an 09 320 06 Ballast.

* Different guidelines apply in the case of HF electronic ballasts — contact Strand Lighting for more details. Ask for Strand Lighting's 'Guide to Fluorescent Dimming'.

ORDERING

Choice of module

Multidim modules themselves are normally installed away from public areas, to be operated from remote control stations situated in the area being lit. The selection of

appropriate dimmer module depends on two factors:
 (i) Type of control station selected.
 (ii) Size and category of load.
 If pushbutton control stations are selected, the dimmer used

must be **preset** type.

If manual control stations are selected, or if the module is to be a slave, the dimmer used should be the **manual** type.

Manual type dimmer modules for use with manual control stations	Cat. No.
Tungsten versions	
6 Amp tungsten Multidim Manual	09 800 01
16 Amp tungsten Multidim Manual	09 820 03
32 Amp tungsten Multidim Manual	09 840 05
Fluorescent versions	
6 Amp fluorescent Multidim Manual	09 810 02
16 Amp fluorescent Multidim Manual	09 830 04
32 Amp fluorescent Multidim Manual	09 850 12

Refer to Data Sheet 'Manual Control Stations', for details of controllers for use with the above dimmers.

Preset type dimmer modules for use with pushbutton control stations	Cat. No.
Tungsten versions	
6 Amp tungsten Multidim preset	09 804 06
16 Amp tungsten Multidim preset	09 824 08
32 Amp tungsten Multidim preset	09 844 10
Fluorescent versions	
6 Amp fluorescent Multidim preset	09 814 07
16 Amp fluorescent Multidim preset	09 834 09
32 Amp fluorescent Multidim preset	09 854 32

For suitable types of preset control stations for use with these dimmers, refer to data sheet 'Pushbutton Control Stations'.

TECHNICAL SPECIFICATION

Installed environment

For (dry) interiors only — maximum ambient temperature 35°C. To be installed in a position with adequate ventilation, with allowance made for heat dissipated by the unit itself (up to 2% of the connected load).

Avoid siting the dimmer module in a noise sensitive area, as dimmers emit low level humming sound (due to internal electrical filters).

Electrical supply

For AC supply of 220/240 Volts, 50/60 Hz. SP, N, E.

Dimmer firing circuit

All versions feature back-to-back thyristors which are genuinely hard fired from a firing circuit which operates independently of load current. This results in a very stable dimmer output, of particular benefit in the case of fluorescent or transformer-fed loads.

Compliance with standards

- Electrical safety in accordance with IEC65/415.
- RFI suppression complies with BS800 and to VDE 0875 level N, supply level G (load and control). Rise time of output limited by substantial varnish impregnated toroidal filters.
- Meets requirements of BS6667.

Fluorescent dimmers

Internal mechanical relay switches on the LF (heater) output when required (4-wire systems where luminaires contain either

U.D.T.s or Strand's own T12 dimmable ballasts).

In cases where approved type of dimmable HF electronic ballasts are used, the LF output is not required, and the 'fast-start' facility should be enabled. Fast-start acts each time the control is raised from 'off', so as to strike the lamps at around 40% for 1 or 2 seconds before the dimmer ramps smoothly to its control setting. This feature is provided to protect the life of lamps used with this type of control-gear.

Control cable requirement

All types of remote control station operate via low voltage (15V) DC signals. The cable between dimmer and control station(s) should be colour-coded multicore signal cable. A typical cable is 7/0.2mm, though other types may be used.

The routing for this cable should avoid proximity with mains cables, in particular those feeding equipment likely to induce interference (eg Cinema projectors, HMI lighting etc). Maximum length of cable run: 1000 metres. See control station literature for the number of conductors required for each type.

Interfacing with other equipment

Dimmers may be interfaced with control equipment by others as follows:

All types: Control terminal number 3 in the base will accept a DC analogue signal, of 0 to 10 volts (either positive or negative) with

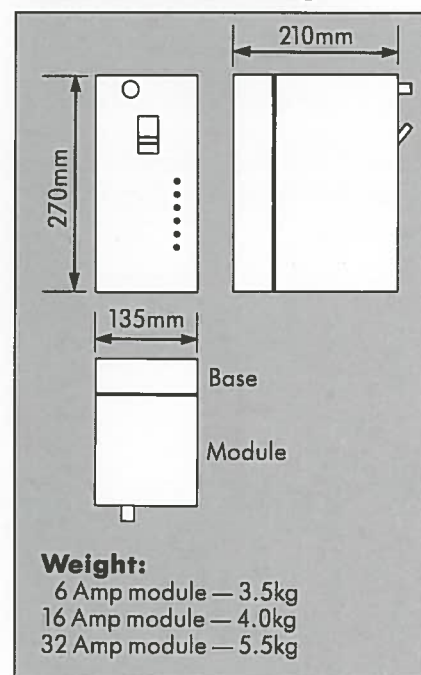
respect to the dimmer's technical earth (terminal 16).

Preset types only: Presets are selected by momentary connection from technical earth (16) to the following terminals:—

- Preset 0 : Terminal 9
- Preset C : Terminal 8
- Preset B : Terminal 7
- Preset A : Terminal 6
- 'Stop' function : terminal 10

All types: A maintained connection between terminals 1 and 16 will hold the dimmer at full. ('Panic' facility). **On no account** must any connection be made between control terminals and mains supply.

Dimensions and weights



ACCESSORIES

The following optional accessories are designed to simplify the installation of a group of Multidim modules.

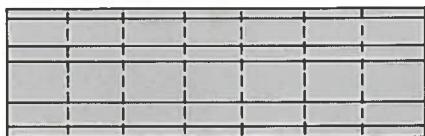
Strandrail Cat. No. 09 874 07

Base sockets can be screwed either directly to a wall or onto Strandrail. Strandrail is a pre-formed steel backplate which facilitates the mounting of several Multidim modules quickly and neatly to a wall, ensuring correct alignment of dimmers.

Each length of rail is suitable for mounting up to seven dimmers, or five dimmers plus one mains connection box.

Supplied complete with all screws etc, required for fixing.

Dimensions:
945mm(W) × 270mm(H)
× 15mm(D)

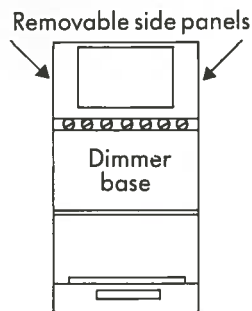


Busbar connectors Cat. No. 09 871 00

A row of Multidim modules can be fed from a common supply cable by use of Busbar Connecting Sets. Phase, Neutral and Earth busbars are contained in each Base socket. The three push-on connectors supplied in a Busbar Connection Set may be used to link between dimmer bases, or from a base to a mains box.

Maximum rating of connectors: 130 Amps.

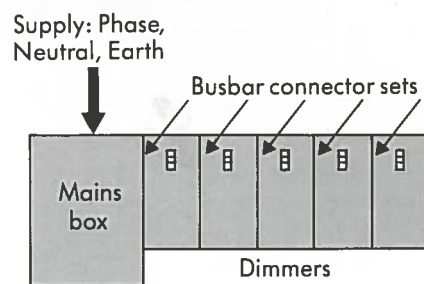
Connectors are fitted by removal of a small panel on the appropriate side of the dimmer base.



Mains connection box Cat. No. 09 872 06

The Box provides a terminating chamber for one phase of a mains supply cable to feed a row of Multidim modules. Maximum rating: 130 Amps. Dimmers can be fed from either side of the box via busbar connectors.

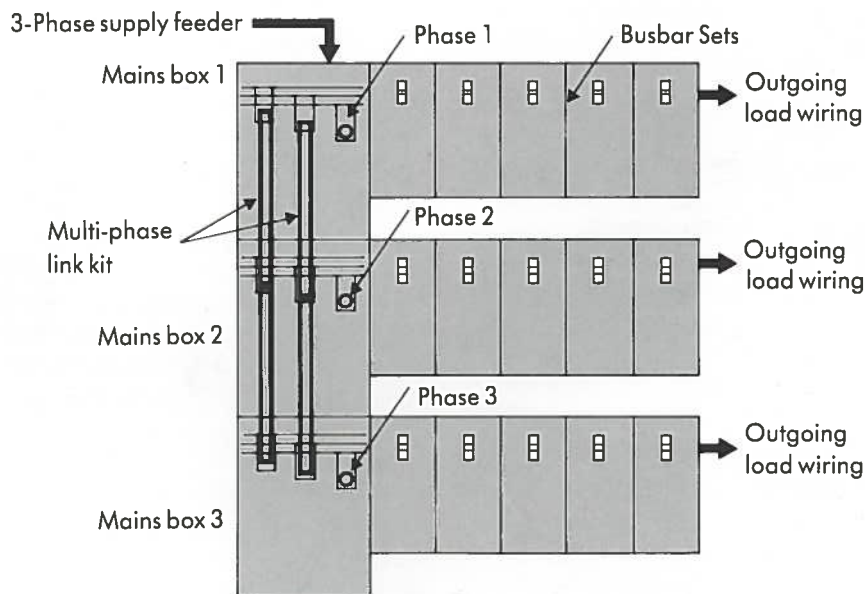
Three-phase installations require three mains connection boxes, arranged as shown below. Dimensions: 270mm(W) × 365mm(H) × 210mm(D)



Multi-phase link kit Cat. No. 09 873 01

For three-phase installations, three mains boxes are mounted in a vertical column, and a different phase is connected to each box. The main neutral and earth cables should be connected at the most convenient mains connection box, with connection of earth and neutral to adjacent mains boxes made using linking kits. Each kit comprises two bars of appropriate length.

Note: For a three-phase installation as shown, two kits are required.



Strand Lighting

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