

Tempus

Packaged Lighting Control

Tempus is a comprehensive range of lighting control desks and dimmer packs which combine to produce versatile and economic lighting control systems for up to 36 control channels.

Sophisticated electronic circuits are employed to provide advanced operational facilities and to meet the highest standards of reliability, safety and electrical performance. Purpose designed aluminium extrusions ensure rugged strength for the desks and dimmers, making Tempus suitable for touring as well as fixed installations.

Two variants of Tempus desk are available, offering either two preset, or two preset 4 group facilities to control 12, 18, 24 or 36 channels. A 6-lever control box, with master fader, is also available for the smaller dimmer installations.

Tempus dimmer packs house either six 10 Amp thyristor dimmers, each with twin output sockets, or three 20 Amp dimmers. Single and three phase versions are available of both 10 Amp and 20 Amp dimmers.

Tempus control desks and dimmer packs not only make an ideal combination for smaller lighting installations, but also they may be used separately to enhance more extensive systems. As Tempus is electrically compatible with all other current and recent Strand control equipment, the control desks may be used with ACT 6, Permus and PIP dimmers, and Tempus dimmers are ideal to expand any dimmer installation controlled by one of Strand's range of memory controls.

Tempus systems can be extended at any time - it is not essential to have the full complement of dimmer packs initially. More packs can be added, and the original desk may even be extended.



Strand Lighting

Tempus Dimmer Pack 10A/C 04 116 00

Tempus 10A/15 Dimmer Pack 04 115 05



Tempus 2G/18 04 418 05

Tempus 12 04 312 08

Specification

Tempus Dimmers

Dimmer Ratings:

10A max at 220/240V, 40W min (6 x 10A versions) 20A max at 240V, 40W min 25A max at 220V, 40W min (Neozed fused)

Output Voltage:

Continuously variable between zero and 5V below line voltage.

Line frequency:

45 - 65Hz.

Efficiency:

Greater than 98%.

RFI Suppression:

To BS800 Part 3, VDE 0875/7.71 grade N for supply terminals and grade G for load terminals.

Dimmer Law:

Linear power law - developed to embody the best features of S law and square law.

Alignment:

Top set only to determine maximum output voltage. Automatic bottom set.

Thyristor firing:

Hard-fired 5kVr.m.s insulation, transformer isolation.

Power Terminations:

Pressure pad terminals, accepting power cable up to 10mm² single phase. Access to the terminals is provided by removing a side plate which is fitted with a 32mm diameter cable gland.

Ventilation:

Natural air-flow ventilation. Dimmers are continuously rated to operate within 0° to 35°C, and packs may be stacked up to two units high.

Close Excess Current Protection:

Single Reyrolle 440V rated pullcap fuses with shrouded contacts for single phase packs or Neozed DO2 for three phase packs.

Control Input:

Full = 10V via 10Kohm resistor and silicon diode.
Off = 0V maximum control current is 1mA.

Tempus Desks

Power Supply:

15V DC @ 1A max.

Output Control Voltage:

OV (off) to -10V (full on) through a series 10K resistor and silicon diode.

Maximum Output Current:

1mA per channel.

Output Cable:

2 metres long, one cable per 6 control channels.

Connector Type:

Belling and Lee 'Bleecon' 8 pin latching plug

Pin 1: Channel 1 (red)

Pin 2: Channel 2 (blue)

Pin 3: Channel 3 (green)

Pin 4: Channel 4 (yellow)

Pin 5: Channel 5 (white)

Pin 6: Channel 6 (black)

Pin 7: 15V DC power supply input (brown)

Pin 8: OV common (violet)

Expansion Socket:

Tempus desks use 5 pin 270° DIN socket.

Pin 1: OV

Pin 2: -ve

Pin 3: Upper Preset Master

Pin 4: Lower Preset Master

Pin 5: Not Used.

Tempus 2G desks use 7 pin 270° DIN socket

Pin 1: Upper Preset Group A

Pin 2: Upper Preset Group B

Pin 3: Lower Preset Group A

Pin 4: Lower Preset Group B

Pin 5: Flash Enable

Pin 6: -ve

Pin 7: OV

Tempus Packaged Lighting Control

Tempus 24
04 324 06



Tempus 12
04 312 08

Tempus 2 Preset Control Desks 12, 18, 24 and 36 channels

Tempus desks provide two faders for each channel mounted one above the other on the control panel, and interconnected in a 2-preset network. Each preset has a master control fader, a blackout switch and an LED indicator which lights if the preset is active. The two master faders are situated beside each other, and are arranged so that if the fader knobs are moved together, a smooth crossfade from one preset to the other will result. A patented crossfade circuit has been developed to ensure that during the fade from one preset to the other, any channels which are set at the same level in both presets remain unaltered, whereas all other channels will fade linearly. Thus, the 'dip' in lighting levels experienced with less sophisticated controls has been eliminated in the Tempus control desks.

An automatic crossfade time facility is also available on the control panel, to introduce smooth, subtle lighting changes into the performance. A rotary control allows the crossfade to be automatically timed for between 5 seconds to 5 minutes duration. In addition to dipless crossfades, fades may be profiled by advancing one preset before the other, or presets may be added together, with the highest intensity level of each channel in the two presets taking precedence, simply by moving the two master faders separately.

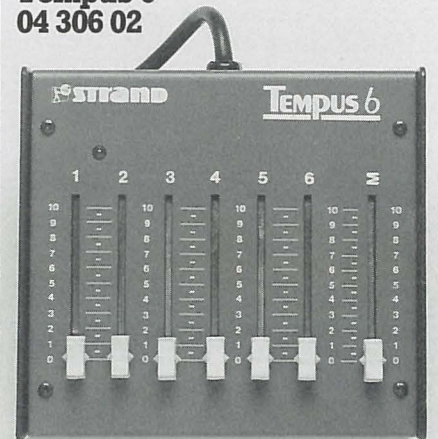
The individual fader levers are connected to carbon-track potentiometers with integral slot covers, with a working scale length of

58mm. Each group of 6 control channels connects to the dimmers via a 2 metre flexible cable which is terminated by a robust, metalclad, 8 pole plug with a mechanical latch. This connector plugs directly into the front panel of a Tempus dimmer pack (or via a standard extension cable) and in addition to the individual control signals, the interconnection system also supplies extra low voltage power from each dimmer pack to the desk. Thus, the Tempus desk is isolated from the mains supply, and is therefore completely safe.

An added feature with the Tempus 2-preset desk is its capability for expansion. Each desk is provided with a 5 pin 270° DIN socket and when a pin-to-pin connection is made to a second desk with its master faders set to zero, the master controls of the first desk will control all channel faders on both desks.

The desk construction uses full length aluminium extrusions which provide a recessed operational area and a carrying handle below the front edge.

Tempus 6
04 306 02



Tempus Dimmer Packs 6 x 10 Amp 240/220V

The compact case of the Tempus dimmer pack is constructed from aluminium extrusion with a formed front socket panel to provide a lightweight yet rugged enclosure for the dimmers. Comfortable recessed carrying handles are included at each end of the dimmer pack, and the plastic feet on the base of each pack are positioned such that two dimmer packs may be stacked on top of each other. Generous ventilation grilles are included along the length of each pack to ensure that the dimmer modules may operate at full power indefinitely in ambient temperatures up to 35°C.

The output of each dimmer is connected to two sockets wired in parallel, and situated as a pair on the front panel. Single phase packs are available with round pin 15A or 5A sockets, or alternatively 16A CEE17 sockets. Three phase racks are equipped with continental Schuko sockets. The single phase, 5A socket version of Tempus also incorporates separate 5 Amp subfusing for each socket on the front panel.

The professional quality dimmers incorporate three temperature-stable trigger cards with hard-firing for each pair of thyristors, and to ensure reliability, each circuit card serves no more than two dimmer channels. The thyristor power devices, which are mounted on generously sized heatsinks, are surge and continuously rated for their maximum load. The

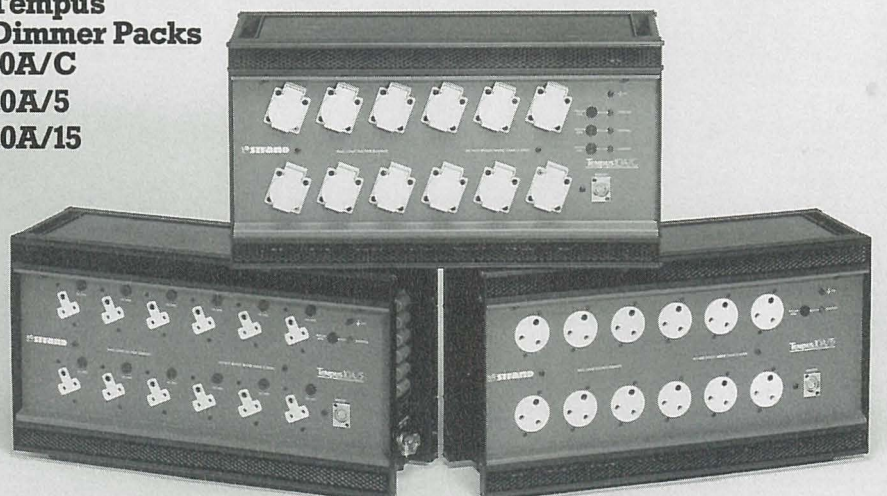
advanced hard-firing circuits ensure stable, flicker-free operation on loads as low as 40W and on transformer-fed loads. In addition to substantial inductive filters, to professional theatre standard, each dimmer output and the incoming supply are fitted with Radio Frequency Interference filter networks which meet British and European standards.

In the presence of high impedance mains supplies or if control signals (such as for

streetlighting) are superimposed upon the mains supply, thyristor dimmers can become unstable. Tempus may be fitted with optional Ripple Rejection cards to filter out ripple control frequencies above 300Hz and voltages up to 20V RMS.

The main supply cable is connected to pressure-pad terminals behind the fuse panel terminal cover plate at the end of the dimmer pack. A 32mm gland is provided and it is suggested that a flexible three core

Tempus Dimmer Packs
10A/C
10A/5
10A/15



Tempus 2G/24
04 424 00



Tempus 2G/12
04 412 02

Tempus 2G 2 Preset, 4 Group Control Desks 12, 18, 24, 36 channels

In addition to the 2-preset, dipless, timed, crossfade facilities of the standard Tempus desks, Tempus 2G provides the means to group channels together for separate control within each preset. Two group master faders, and associated blackout switches, are included for each preset. A grouping switch is provided for each channel fader to assign it to one of the two groups within the appropriate preset. Four independently controlled groups may therefore be formed, giving a potential for sophisticated multipart lighting changes normally only possible by using larger and more complex control systems.

Another powerful feature of the Tempus 2G series is the momentary flash-to-full button for each channel. These overriding control buttons are recessed to prevent accidental operation, and they may be made

ineffective when not required by means of the disable switch located beneath the master faders.

In common with standard Tempus desks, two 2G desks may be connected together to expand the channel capacity. A 7 pin 270° DIN expansion socket is fitted to each desk, and with two desks connected together, and the master faders of one desk set to zero, the crossfaders and group faders of the other desk will control all channels. A standard Tempus desk can also be connected to a 2G desk, and by selecting one of the two master signals from the 2G, the standard Tempus faders will respond to the commands of the relevant group master fader.

Tempus 2G desks are ideal as the optional auxiliary preset desk for the Tempus M24 Memory Control. The interface to the M24 is a plug-in connection to one or more of the 24 channel F and D Multiplex Interface Units. When connected to the memory system in this way, Tempus 2G can be used

to manually set the channel levels for the M24 to record and reproduce during the performance. If the M24 and Tempus 2G combination is controlling a group of dimmers which do not include Tempus or ACT 6 portable packs, the Tempus control desk power supply will be required.

Tempus Control Desk Power Supply

All Tempus control desks have been designed to obtain power from the Tempus or ACT 6 portable dimmer packs to which they are connected. If a system is planned which includes a Tempus desk controlling another type of dimmer, or even a mixture of Tempus dimmers and others where a 24 or 36 way desk is used with only one Tempus (or ACT 6) pack, a separate desk power supply is required. This unit (08 650 05) is available as a chassis-mounting kit for installation within any Permuss or PIP dimmer rack, or another suitable enclosure.

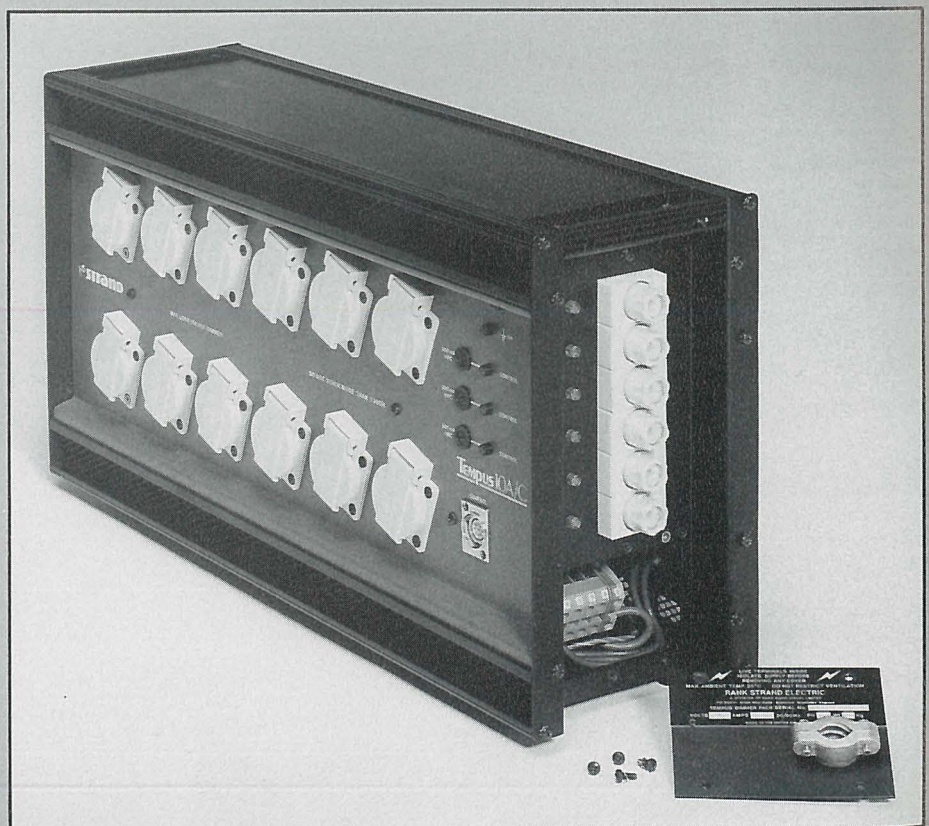
10mm² cable is installed for 240V single phase racks or flexible five core 6mm² cable for three phase packs. Neon indicators are fitted to the front panel to display the presence of phase voltage (one red neon for single phase - three for 3 phase) and to ensure that a protective earth has been properly connected, Tempus includes a green 'earth OK' neon also on the front panel.

As Tempus dimmers include professional standard RFI filtering networks, which are connected to earth, care should be taken when installing the dimmers using a supply protected by a Residual Current Device. High impedance mains, over-sensitive RCDs, or out of balance double pole circuit breakers can cause nuisance tripping of the RCD. Strand's dealers and service agents will advise on suitable methods of connection for RCD protected installations on request.

The main phase power supply to each dimmer is separately fused with an HRC cartridge fuse link, and an amber neon, situated alongside each fuse carrier, shows the status of the fuse link.

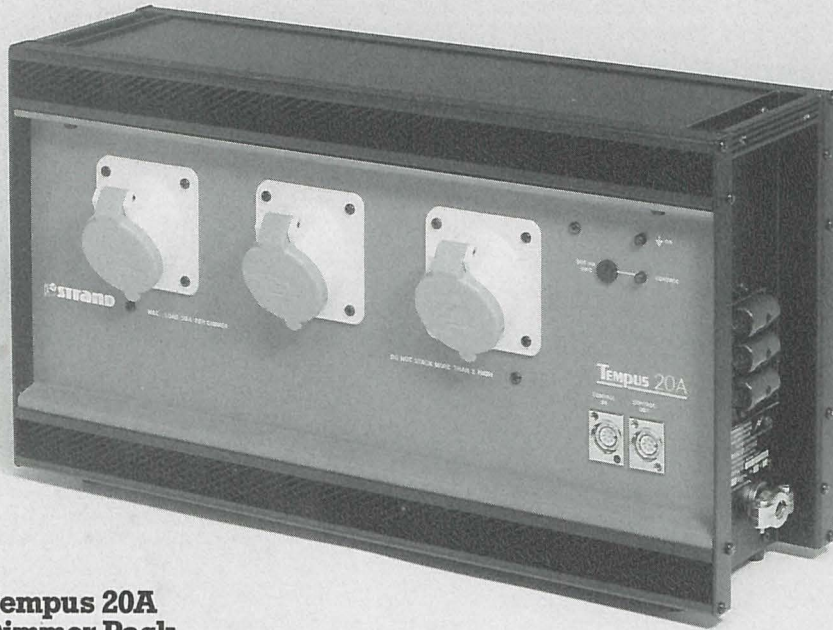
The connection to the remote control desk is made by an 8 pin locking socket on the front panel of the desk. As Tempus uses the standard Strand control signal, either a Tempus desk or any of Strand's current range of memory controls may be used to control the dimmers.

Fuse panel, and power cable connections.



Tempus

Packaged Lighting Control



**Tempus 20A
Dimmer Pack
04 215 0T**

Tempus Dimmer Packs 3 x 20/25 Amp 240/220V

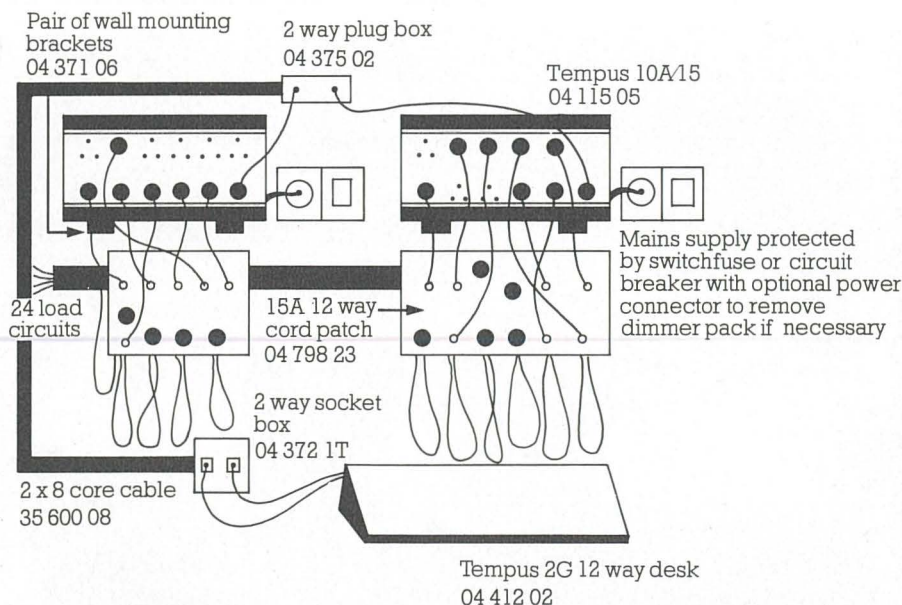
These high power dimmer packs provide either 3 x 20A (240V) or 3 x 25A (220V) in the same size enclosure as the 10A versions. All packs are equipped with 32 Amp 2 pole + E CEE17 sockets and are wired for 240V single phase, neutral plus earth supply or 220/380V three phase neutral plus earth supply.

Each dimmer comprises a separate module with the same high standard hard-fired triggering circuit for the thyristors as the 10A version.

The 6 channel control cable from the desk plugs into a mating socket on the front panel and three of the channels are wired to the enclosed dimmers. The remaining control signals pass to a second panel mounting socket which, via a linking cable supplied with each pack, controls three more dimmers in a second dimmer pack.

Example of typical Tempus installation

This example is based on a 12 way single phase system, with twenty four load circuits and a control desk in a remote position.



Accessories

Tempus Dimmer Pack Accessories

Pair of wall mounting brackets for any Tempus dimmer pack 04 371 06
 One way (6 channel) control plug box containing one 1m cable terminating in an 8-pin plug, wired to terminals within the box. 04 375 01
 Two way (12 channel) control plug box, otherwise as above. 04 375 02
 Three way (18 channel) control plug box, otherwise as above 04 375 03

Tempus Dimmer Rack Accessories

Pair of wall mounting brackets for any Tempus dimmer pack 04 371 06
 One way (6 channel) control plug box containing one 1m cable terminating in an 8-pin plug, wired to terminals within the box. 04 375 01
 Two way (12 channel) control plug box, otherwise as above. 04 375 02
 Three way (18 channel) control plug box, otherwise as above 04 375 03

Tempus Desk Accessories

Pair of Wall Mounting Brackets (for all desks except 6 way) 04 374 02
 Power Supply Unit for Permuss or PIP dimmers. 08 650 05
 5m, 6-channel, Control Extension Cable. 04 350 06
 19m, 6-channel, Control Extension Cable. 04 351 01
 Twin 8 pin Control Socket Box (12 channel) 04 372 1T
 Quad 8 pin Control Socket Box (24 channel) 04 373 15

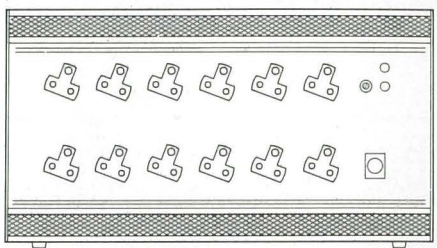
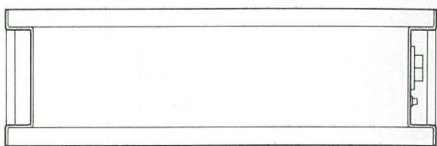
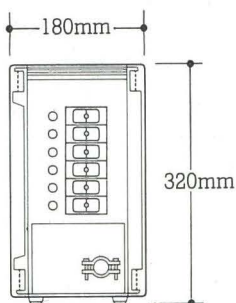
Tempus Cord Patch Units

This wall mounted unit is situated beneath an installed Tempus dimmer pack to provide a simple, safe and tidy method of connecting flexible cables with plugtops to installed load wiring. The Cord Patch Unit is supplied complete with twelve flexible cables with plugtops. These pass through bushed holes in an angled front panel, which is designed to give each plugtop a permanent, recognisable 'home' position for quick identification.

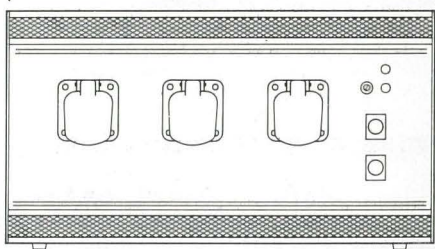
The flexible cables are connected to the installed load wiring at terminal blocks provided in the steel enclosure of the cord patch.

Cord patch to connect installed load wiring to 12 flexible cables, each cable combed through an angled panel and fitted with a 15 Amp 3 pin plugtop. 04 798 23
 Cord patch as above, but each cable fitted with a 5 Amp 3 pin plugtop. 04 798 31

Dimensions Scale 1:10



Tempus 10A/15 6 x 10A
 Tempus 10A/5 6 x 10A
 Tempus 10A/C 6 x 10A



Tempus 20A 3 x 20A
 Tempus 25A/C 3 x 20A

Tempus Dimmer Packs

Packed Size (m³) **Packed Weight**
 0.054m³ 20kg.

Carton size:
 710 x 305 x 435mm

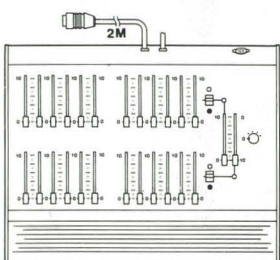
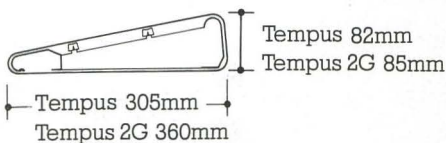
Tempus 6 x 10A Dimmer Packs:

Tempus 10A 220/240V single phase,
 neutral plus earth supply and twin
 16A CEE17 sockets 04 117 00
 Tempus 10A/15 220/240V single
 phase, neutral plus earth supply
 and twin 15A sockets. 04 115 05
 Tempus 10A/5 220/240V single phase,
 neutral plus earth supply and twin
 5A sockets 04 105 08
 Tempus 10A/C220/380V three phase,
 neutral plus earth supply and twin
 Schuko sockets 04 116 00

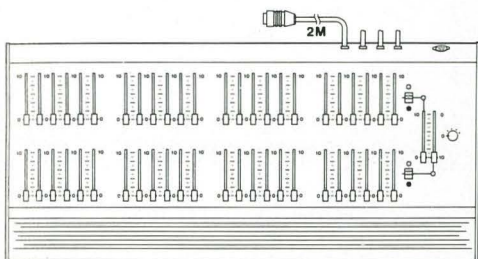
Tempus 3 x 20A Dimmer Packs:

Tempus 20A 220/240V single phase,
 neutral and earth supply with
 32A CEE17 socket for each
 dimmer output 04 215 0T
 Tempus 25A 220/240V three phase,
 neutral and earth supply with 32A
 CEE17 socket for each
 dimmer output. 04 225 07

Dimensions Scale:1:10



Tempus 12 380mm
Tempus 18 520mm
Tempus 2G 12 400mm
Tempus 2G 18 540mm



Tempus 24 655mm
Tempus 36 950mm
Tempus 2G 24 680mm
Tempus 2G 36 960mm

Tempus 2 preset control desks:

	Item Number	Packed Size (m ³)	Packed Weight (Kg)
12 Channel	04 312 08	0.033	4.0
18 Channel	04 318 00	0.043	5.5
24 Channel	04 324 06	0.064	7.5
36 Channel	04 336 04	0.073	9.0

Tempus 2 preset 4 group control desks

	Item Number	Packed Size (m ³)	Packed Weight (Kg)
12 Channel 2G	04 412 02	0.039	5.1
18 Channel 2G	04 418 05	0.041	5.5
24 Channel 2G	04 424 00	0.060	8.0
36 Channel 2G	04 436 09	0.067	9.7