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### Panel Control Units - SLIC Range

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### Panel Control Units - Standard Range

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201	1	2	Lamps - MES MBC LES	Filament LED7 LED4 LEDM1(F)
201	2	2	Neons, SC SBC LED Lamps	NB2(R) NG2(R) NW2(R), Optoled
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203	1&2	2	Multi-Lamp Test Indicators (AC)	MTMU
204	1&2	2	Multi-Lamp Test Indicators (DC)	DTMU
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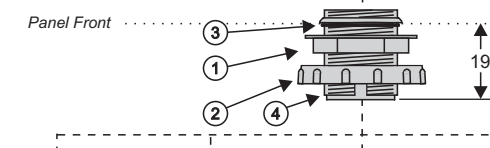
# Index

# Transformers

## Housings/lenses for Tranilamp SLIC Indicator Lamp Body Units.

Select the panel hole size, then the lens/bezel from the appropriate table. Units can either be ordered as **Complete Assemblies** or separate parts using the **Codes** given.

### 19mm Panel Hole fixing

Lens Dia mm	30	30	22.3	17.5	17
<b>Lens + Bezel</b> (if welded)	<b>BKY</b> (Colour) 	<b>BY</b> (Colour) 	<b>BJ</b> (Colour) 	<b>MA</b> (Colour) 	<b>MC</b> (Colour) 
<b>Bezel</b> (if separate)				<b>BM</b> 	<b>BM</b> 
<b>Housing</b> ① Panel locking nut ② Indicator locking ring ③ O Ring 17 x 1 ④ MP Body Only					
<b>Complete Assembly</b>	<b>MKY</b> Lens Colour Code	<b>MY</b> Lens Colour Code	<b>MJ</b> Lens Colour Code	<b>MXA</b> Lens Colour Code	<b>MXC</b> Lens Colour Code
<b>Standards</b>					
<b>Protection</b>	IP65	IP64	IP64	IP65	IP65
<b>Lens Material</b>	Polycarbonate	Polycarbonate	Polycarbonate	Polystyrene	Polystyrene
<b>Bezel Material</b>	Black plastic	Chromed brass	Chromed brass	Chromed brass	Chromed brass
<b>Housing</b>	Black moulded glass reinforced nylon				
<b>Options</b>					
<b>Protection to IP65</b>	Standard	<b>IP65 SEALING WASHER</b> behind lens	Not available	Standard	Standard
<b>DIN Keyway</b>	Available for all assemblies with <b>M KEYWAY WASHER</b> . (Specify " <b>DIN Keyed</b> ")				
<b>Legend Plates</b>	Blank or engraved as required. Anodised aluminium, self-adhesive (Data Sheet 214)				
	<b>BYLP</b>	<b>BYLP</b>	<b>BJLP</b>	<b>BJLP</b>	<b>BJLP</b>

### Lens Colour Codes

**A** = Amber  
**B** = Blue  
**G** = Green  
**R** = Red  
**T** = Clear (Transparent)  
**W** = White (Opal)

**BKY**

**BY**

**BJ**







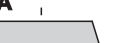



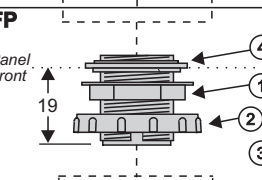
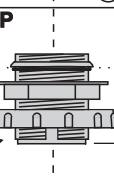
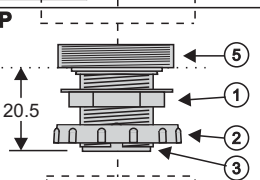
**MA + BM**

**MC + BM**

**FA + BFA**

**FB + BFB**


### 22.5mm Panel Hole fixing

Lens Dia mm		30	30	22.3	21.5	23.5
Product Code Make-up	Lens + Bezel (if welded)	BKY(Colour) 	BY(Colour) 	BJ(Colour) 	FA(Colour) 	FB(Colour) 
	Bezel (if separate)			ADMF 	BFA 	BFB 
	① O Ring 19x2.5				① 	
	Housing	FP 		MP 	FXP 	
	① Panel locking nut ② Indicator locking ring ③ MP Body Only ④ FP Body Only ⑤ BF Adaptor					
Complete Assembly		FKY Lens Colour Code	FY Lens Colour Code	FJ Lens Colour Code	FXA Lens Colour Code	FXB Lens Colour Code
Standards	Protection	IP65	IP64	IP64	IP64	IP64
	Lens Material	Polycarbonate	Polycarbonate	Polycarbonate	Polystyrene	Polystyrene
	Bezel Material	Black plastic	Chromed brass	Chromed brass	Chromed brass	Chromed brass
	Housing	Black moulded glass reinforced nylon				+ chromed brass adaptor
Options	Protection to IP65	Standard	IP65 SEALING WASHER behind lens	Not available	O RING 19x2.5 housing -panel	
	DIN Keyway	Available for all assemblies with F KEYWAY WASHER. (Specify "DIN Keyed")				O RING 19x2.5 behind lens
	Legend Plates	Blank or engraved as required. Anodised aluminium, self-adhesive (Data Sheet 214)				
		BYLP	BYLP	BYLP	FHLP	FHLP



Transformer lamps are generally used for running indicator lamps on Control Panel at safe voltages.

## Using Tranilamp SLIC TU's

### ● *increases life expectancy of lamps*

Running the lamp at below rated voltage increases the typical running life of a filament lamp from 4000 hours to beyond 16,000 hours. Tranilamp LED clusters have a life typically in excess of 100,000 hours.

### ● *increases safety*

Lamp voltages are run at very low and safe voltage levels

### ● *increases flexibility*

Can use with Tranilamp's extensive range of:

Standard filament lamps.

LEDM1, 4 or 7 diode cluster lamps in amber, red, green, blue or white.

Panel housings to suit 19 or 22.5mm panel holes.

Lenses/Bezels from the JY, F and M ranges in 6 colours.

### ● *reduces panel assembly time*

Lamp body is easy to fit and clips directly onto the housing.

## Standard Specification

### Types

**TU** -Standard Transformer Indicator Lamp Body.

**TEU** -As TU plus transformer secondary with earth terminal.

### Input Voltages

24, 110, 240V standard.

### Operating Frequency

50/60 Hz as standard

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamps

6V, 1.8W tubular filament lamp supplied as standard.

### Lamp Caps

BA9s Miniature Bayonet - MBC

### Mounting

Mount to panel using JY Series housings and lenses or adaptations (see Data Sheet 100). TU's clip onto the MP or FP housings and can be locked by tightening a locking ring.

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20.



TU Indicator Body and Lamp  
(Standard without lens/housing)

### Construction

Transformers are assembled in mouldings. (ABS/Polycarbonate black, flame retardant to UL94V0 non-drip)

### Tests

Transformer Lamps conform to BS EN 60947-5-1

All units are CE labelled in conformance with the L.V. Directive.

### Weight (Body Only)

TU - 94 g, TEU - 95 g.

## Optional Extras

**Operating Frequency** - 400 Hz.

**Input Voltages** - 50, 440, 550V and others available on request.

**Lamps** - 12, 24, 28V tubular filament lamp.

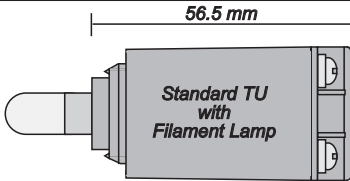
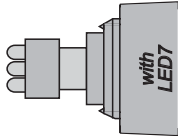
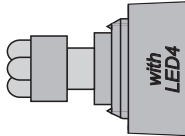
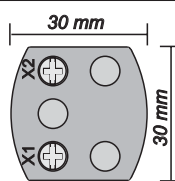
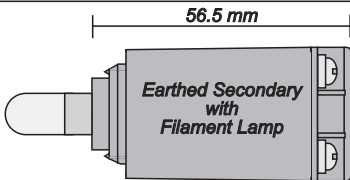
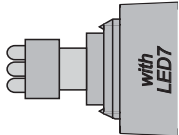
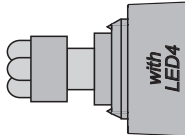
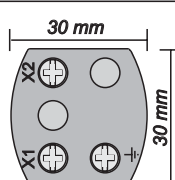
- LED4, 4 X LED cluster lamp in Amber, Green, Red, Blue or White.

- LED7, 7 X LED cluster lamp in Amber, Green, Red, Blue or White.

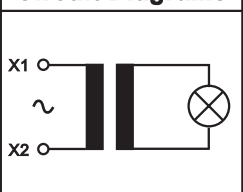
- LEDM1 or LEDM1F (Flashing) single leds in Amber, Green, Red, Blue or White

**Lamp Remover (LR1)** - suitable for all lamps

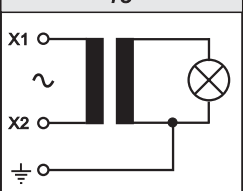
## Transformer Lamp Body Arrangements

															
TU/VOLTAGE				TU/VOLTAGE/LED7...				TU/VOLTAGE/LED4...				CONNECTIONS			
															
TEU/VOLTAGE				TEU/VOLTAGE/LED7...				TEU/VOLTAGE/LED4...				CONNECTIONS			

## Circuit Diagrams



TU



TEU



## How to derive the correct Product Code

### Indicator Body Lamp Product Code

<b>Lens Housing</b> (see Product Data Sheet 100)	<b>Lens Colour</b> (if applicable)
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<b>Body / Input / Lamp Type Volts</b>
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<b>BODY TYPE</b>	Standard Transformer Lamp Body	TU
	Standard Transformer Lamp Body with Earthed Secondary	TEU

<b>INPUT VOLTAGES</b>	Standard Voltages available	24 V	24
		110 V	110
		240 V	240
	Optional Voltages (Others on application)	50 V	50
		440 V	440
		550 V	550

<b>LAMPS (STANDARD VOLTAGES)</b>	Standard Filament Lamp 6 V 1.8W		BLANK
	LED 7 Cluster 4.5 V AC [RED, AMBER, GREEN, BLUE & WHITE]	RED	LED7R 4.5AC MBC
		AMBER	LED7A 4.5AC MBC
		GREEN	LED7G 4.5AC MBC
		BLUE	LED4B 4.5AC MBC
		WHITE	LED4W 4.5AC MBC
	LED4 Cluster 4.5 V AC [RED, AMBER, GREEN, BLUE & WHITE]	RED	LED4R 4.5AC MBC
		AMBER	LED4A 4.5AC MBC
		GREEN	LED4G 4.5AC MBC
		BLUE	LED4B 4.5AC MBC
		WHITE	LED4W 4.5AC MBC
	LEDM1 4.5 V AC single led lamp	RED	LEDM1R 4.5AC MBC
		AMBER	LEDM1A 4.5AC MBC
		GREEN	LEDM1G 4.5AC MBC
		BLUE	LEDM1B 4.5AC MBC
		WHITE	LEDM1W 4.5AC MBC
	LEDM1F 4.5V AC and DC single flashing led lamp	RED	LEDM1FR 4.5 MBC
		AMBER	LEDM1FA 4.5 MBC
		GREEN	LEDM1FG 4.5 MBC
		BLUE	LEDM1FB 4.5 MBC
		WHITE	LEDM1FW 4.5 MBC

<b>OTHER OPTIONS</b>	Non-standard lamp Voltages (Other Voltages can be considered on request)	12V	Use lamp code of Filament or LED to be used (DS 201)
		24V	
		28V	
	400 Hz Operation		Specify <b>400Hz</b> after Code

<b>ACCESSORIES</b>	<b>Lamp Remover</b> Suitable for removing all types of lamps from <b>SLIC</b> bodies	LR1 (packs of 10)
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**Example 1**  
Product Code:- TU/24

Standard TU lamp body with  
a 6V filament bulb.

**Example 2**  
Product Code:- TU/240/LED7R 4.5AC  
MBC

Standard TU lamp body with 4.5V, MBC,  
a standard red LED 7 lamp cluster

**Example 3**  
Product Code:- FYB-TEU/110

Transformer Indicator lamp with earthed  
secondary and a standard 6V filament  
bulb mounted on an FP housing with a  
blue BY lens and suitable for a 22.5mm

Multi-Lamp Test Indicators enable groups of transformer indicator lamps to be tested from a single pushbutton switch without interrupting normal operation.

### Tranilamp SLIC MTU's

- **increases life expectancy of lamps**

Running the lamp at below rated voltage increases the typical running life of a filament lamp from 4000 hours to beyond 16,000 hours. The life of Tranilamp LED clusters is in excess of 100,000 hours.

- **increases safety**

Isolates the Operating Line when in Test Mode. Lamp voltages are run at very low safe values.

- **increases flexibility**

Can use with Tranilamp's extensive range of:  
 Filament Lamps  
 LED M1, 4 or 7 diode cluster in amber, green, red, blue or white  
 JY Series panel housings to suit 19 or 22.5mm panel holes  
 Pushbutton switches

- **reduces panel assembly time**

Lamp body is easy to fit and clips directly onto the housing



MTU Indicator Body and Lamp  
(Standard without lens/housing)

102

### Standard Specification

#### Type

MTU -Standard SLIC Multi-Test Transformer Indicator Body.

#### Input Voltages

24, 110, 240V. AC supply only.

#### Operating Frequency

50/60 Hz as standard.

#### Ratings

Nominal current rating of standard MTU's in Test Mode:

Input Voltage	24 V	110 V	240 V
Current Rating	160 mA	40 mA	30 mA

#### Surrounding Air Temperature

Maximum 50 deg C when operating.

#### Lamps

6V, 1.8W tubular filament lamp supplied as standard.

#### Lamp Caps

BA9s Miniature Bayonet - MBC

#### Mounting

Mount to panel using JY Series housings or adaptations (see Data Sheet 100). MTU's clip onto housings and can be locked by tightening the locking ring.

#### Terminations

M3.5 cable clamps with fixed terminal covers to IP20

#### Construction

Transformers are assembled in moulded casings.  
(ABS/Polycarbonate black, flame retardant to UL94V0 non-drip)

#### Tests

MTU's conform to BS EN 60947-5-1.

All units are CE labeled in accordance with the L.V. Directive.

### Optional Extras

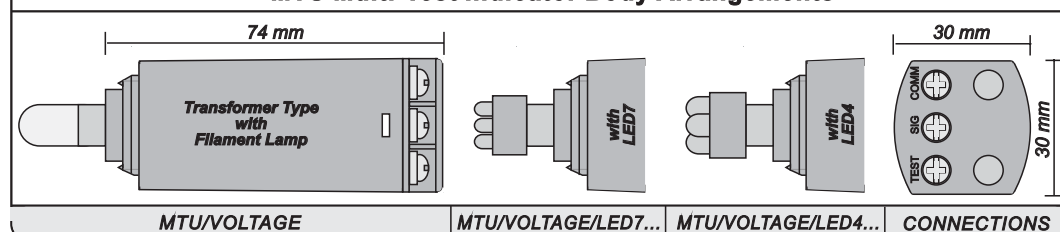
**Input Voltages** - Optional Voltages considered on application.

**Lamps** - 24, 28V tubular filament lamps. (Others available).

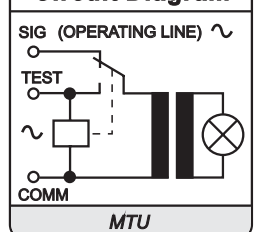
- LED4, 4 X LED cluster lamp in Amber, Green, Red, Blue or White.
- LED7, 7 X LED cluster lamp in Amber, Green, Red, Blue or White.
- LEDM1 or LEDM1F (Flashing) lamp in Amber, Green, Red, Blue or White.

**Lamp Remover (LR1)** - suitable for all lamps

### MTU Multi-Test Indicator Body Arrangements



### Circuit Diagram

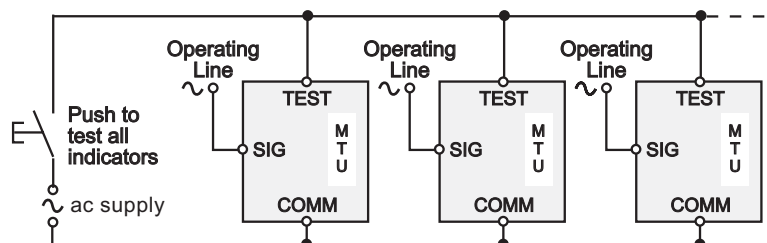


### MTU Multi-Test Circuit Connection

MTU's incorporate a single pole changeover relay to enable many units to be tested from one Test Pushbutton without interrupting normal operation. The Control Circuit is entirely isolated from the Indicator when the Test Pushbutton is pressed, thus eliminating any feedback.

The Control Circuit must be 50/60 Hz AC.

**NOTE:** If a 3 phase supply is used, the Test Circuit must be on the **same phase** as the Control Circuit.



**SLIC  
MTU**

# Multi-Lamp Test Indicator Lamps



**Product Data Sheet 102/2 Issue 1**

## How to derive the correct Product Code

### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 100)		Lens Colour (if applicable)	- Body Type / Input Volts / Lamp		
BODY TYPE		Standard <b>SLIC</b> Transformer Multi-Test Indicator Lamp Body	MTU		
INPUT VOLTAGES		Standard Voltages available		24 V	24
				110 V	110
				240 V	240
LAMPS (STANDARD VOLTAGES)		Standard Filament Lamp 6 V 1.8W		BLANK	
		LED 7 Cluster 4.5 V AC [RED, AMBER, GREEN, BLUE & WHITE]	RED	LED7R 4.5AC MBC	
			AMBER	LED7A 4.5AC MBC	
			GREEN	LED7G 4.5AC MBC	
			BLUE	LED7B 4.5AC MBC	
			WHITE	LED7W 4.5AC MBC	
		LED4 Cluster 4.5 V AC [RED, AMBER, GREEN, BLUE & WHITE]	RED	LED4R 4.5AC MBC	
			AMBER	LED4A 4.5AC MBC	
			GREEN	LED4G 4.5AC MBC	
			BLUE	LED4B 4.5AC MBC	
			WHITE	LED4W 4.5AC MBC	
		LEDM1 4.5V AC single led lamp	RED	LEDM1R 4.5AC MBC	
			AMBER	LEDM1A 4.5AC MBC	
			GREEN	LEDM1G 4.5AC MBC	
			BLUE	LEDM1B 4.5AC MBC	
			WHITE	LEDM1W 4.5AC MBC	
		LEDM1F 4.5V AC and DC single led flashing lamp	RED	LEDM1FR 4.5 MBC	
			AMBER	LEDM1FA 4.5 MBC	
			GREEN	LEDM1FG 4.5 MBC	
			BLUE	LEDM1FB 4.5 MBC	
			WHITE	LEDM1FW 4.5 MBC	

OTHER OPTIONS	Non-standard lamp Voltages (Other Voltages can be considered on request)	12V	Use lamp code of Filament or LED to be used (DS 201)
		24V	
		28V	

ACCESSORIES	Lamp Remover Suitable for removing all types of lamps from <b>SLIC</b> bodies	LR1 (packs of 10)
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**Example 1**  
Product Code:- MTU/240/LED7R 4.5AC MBC

is a **SLIC** MTU Multi-Test Indicator Lamp body,  
4.5V MBC red LED 7 lamp cluster.  
Input: 240V, 50/60 Hz.

**Example 2**  
Product Code:- MTU/110

is a **SLIC** MTU Multi-Test Indicator  
Lamp body only with a standard  
6V, MBC filament lamp.  
Input: 110V, 50/60 Hz.

**Example 3**  
Product Code:- MYB-MTU/110/24

is a **SLIC** Multi-Test Transformer Indicator  
lamp with 24V MBC capped filament bulb  
mounted on an MP housing, suitable for a  
19mm panel hole, with a blue BY lens with  
chrome bezel.  
Input: 110V at 50/60 Hz.



Multi-Lamp Test Indicators enable groups of indicator lamps to be tested from a single pushbutton switch without interrupting normal operation.

### Tranlamp SLIC DTU's

- offer an economic solution

Use of a simple diode blocking technique makes this multi-test indicator particularly suitable for dc control circuits at low cost.

- increase flexibility

Can use with Tranlamp's extensive range of:

Filament Lamps

LED4 or 7 cluster lamps in amber, green, red, blue or white

JY Series panel housings or adaptations to suit 19 or 22.5mm panel holes.

- reduces panel assembly time

Lamp body easy to fit clipping directly onto housing.

### Standard Specification

#### Type

DTU - Standard SLIC Multi-Test Low Voltage Indicator Lamp Body.

#### Input Voltages

6, 12, 24, 28, 50 or 60 V DC supplies.

AC voltages may be used with filament lamps, but with reduced lamp brightness.

#### Test Mode Current Ratings

As Operating Mode i.e. Lamp rating.

#### Surrounding Air Temperature

Maximum 50 deg C when operating.

#### Lamps

Supplied as Optional Extras. For LED's, use only DC.

Lamp voltage must always be the same as input volts.

#### Lamp Caps

BA9s Miniature Bayonet only - MBC

#### Mounting

Mount to panel using JY Series housings or adaptations (see Data Sheet 100). DTU's clip onto housings and can be locked by tightening the locking ring.

#### Terminations

M3.5 cable clamps with fixed terminal covers to IP20

#### Construction

ABS/Polycarbonate black, flame retardant to UL94V0 non-drip.

#### Tests

DTU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

#### Weight (Body Only)

16 g

### Optional Extras

#### Lamps

Filament Lamps up to 60 V

LED4 - 4 x LED cluster lamp in Amber, Green, Red, Blue or White. **Must use DC up to 24 V**

LED7 - 7 x LED cluster lamp in Amber, Green, Red, Blue or White. **Must use DC up to 24 V**

See Data Sheet 201 for a full list of lamps available.

LEDM1 single led lamp in Amber, Green, Red, Blue or White.

**Must use DC up to 24V**

LEDM1F single led flashing lamp in Amber, Green, Red, Blue or White. **Must use DC up to 24V**

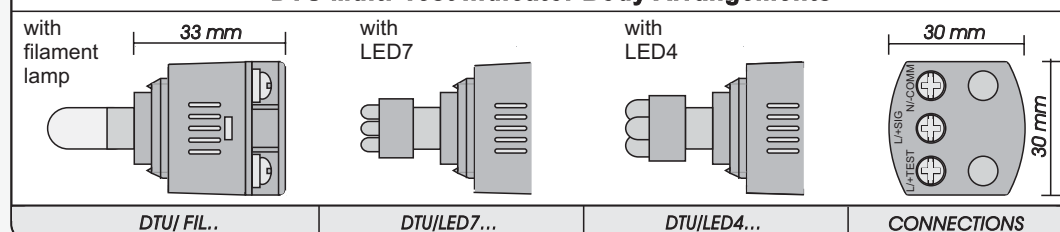
**Lamp Remover (LR1)** - suitable for all lamps.



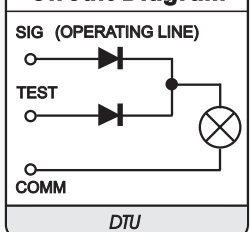
DTU Indicator Body  
(Lens/Housings/Lamps are Optional)

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### DTU Multi-Test Indicator Body Arrangements



### Circuit Diagram



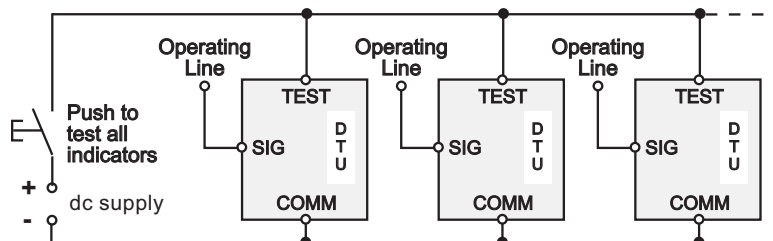
### DTU Multi-Test Circuit Connection

DTU's incorporate blocking diodes to enable a group of units to be tested from one Test Pushbutton without interrupting normal operation.

The Control Circuit will usually be DC, but AC can be used with filament lamps only, which will operate at reduced brightness.

Please advise us if battery backup services are fitted to the supply.

LED cluster lamps can **only** be used with DC supplies.



# SLIC DTU

## Multi-Lamp Test Indicator Lamps



Product Data Sheet 103/2 Issue 1

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 100)	Lens Colour (if applicable)	-	Body / Type	Lamp Product Code Type Colour Supply Cap
--	--------------------------------	---	----------------	---

<b>BODY TYPE</b>	Standard <b>SLIC</b> Low Voltage Multi-Test Indicator Lamp Body	<b>DTU</b>
------------------	---	------------

**LAMPS are supplied for the DTU only as an optional extra.**  
The lamp voltage is always the same as the input voltage.  
When ordering the lamps fitted to the DTU body, then the full lamp product code should be used, including the voltage, ac or dc and MBC. (See Data Sheet 201)  
Voltages, other than those listed can be considered on request.

No Lamp fitted	Lamp Product Code BLANK
----------------	-------------------------

<b>FILAMENT LAMPS</b>  (Voltage identical to supply voltage) DC supply preferred. If AC supply used, the lamp operates at reduced brightness.	Filament Lamp	<b>FIL</b>
	Lamp Voltage (Also supply voltage)	6V 12V 24V 28V 50V 60V
	Lamp Cap - must be Miniature Bayonet	<b>MBC</b>

<b>LED CLUSTERS</b>	LED Cluster - 7 diodes	<b>LED7</b>	
	LED Cluster - 4 diodes	<b>LED4</b>	
	LED Single diode lamp	<b>LEDM1</b>	
	LED Single diode flashing lamp at 2 Hz	<b>LEDM1F</b>	
	Colours	Red Amber Green Blue White	R A G B W
	Lamp Voltage (must be supply voltage) * Blue and White are not available at 4.5Vdc	4.5V DC* 24V DC	4.5DC 24DC
	Lamp Cap - must be Miniature Bayonet		<b>MBC</b>

<b>ACCESSORIES</b>	Lamp Remover suitable for removing all types of lamps from <b>SLIC</b> bodies	<b>LR1</b> (packs of 10)
--------------------	---	-----------------------------

**Example 1**  
Product Code:- **DTU/LED7A 24DC MBC**

is a Standard **SLIC** DTU Multi-Test Indicator Lamp body, amber LED 7 lamp cluster with MBC cap and standard screw terminals.  
Input: 24V DC.

**Example 2**  
Product Code:- **FKYB-DTU**

is a Standard **SLIC** DTU Multi-Test Indicator lamp with no lamp supplied mounted on an FP housing with a blue BKY lens with black bezel.  
Input: Unspecified.

Direct Voltage indicators enable filament, led or neon lamps to be connected directly to the Supply Voltage over a limited voltage range.

### Using **Tranilamp SLIC LU's**

- **offer an economic solution**

The low cost way to accommodate many control circuit supplies, both AC and DC (not neons), if isolation is not required.

- **increase flexibility**

Can use with Tranilamp's extensive range of:  
 Filament Lamps  
 LED4 or 7 cluster lamps in amber, green, red, blue or white  
 JY Series panel housings or adaptations to suit 19 or 22.5mm panel holes.

- **reduces panel assembly time**

Lamp body easy to fit clipping directly onto housing.

### Standard Specification

#### Type

LU - Standard **SLIC** Direct Voltage Indicator Lamp Body.

#### Input Voltages

Same as and determined by the supply voltage.  
 Suitable for AC and DC supplies.  
 Maximum Voltage: 240V

#### Surrounding Air Temperature

Maximum 50 deg C when operating.

#### Lamps

**Supplied only as Optional Extras.**

Select fro the Optional Extra Lamp List opposite and obtain the codes from the Prodoct Code selector overleaf or from the list on Data Sheet 201.

#### Lamp Caps

BA9s Miniature Bayonet only accommodated on this unit - MBC

#### Mounting

Mount to panel using JY Series housings or adaptations (see Data Sheet 100). DTU's clip onto housings and can be locked by tightening the locking ring. Suitable for 19mm or 22.5mm panel holes

#### Terminations

M3.5 cable clamps with fixed terminal covers to IP20



LU Indicator Body  
(Lens/Housings/Lamps are Optional)

#### Construction

ABS/Polycarbonate black, flame retardant to UL94V0 non-drip.

#### Tests

LU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

#### Weight (Body Only)

13 g

### Optional Extras

#### Lamps

Filament Lamps up to 60 V

LED4 - 4 x LED cluster lamp in Amber, Green, Red, Blue or White.

LED7 - 7 x LED cluster lamp in Amber, Green, Red, Blue or White.

LEDM1 - single led lamp in Amber, Green, Red, Blue or White.

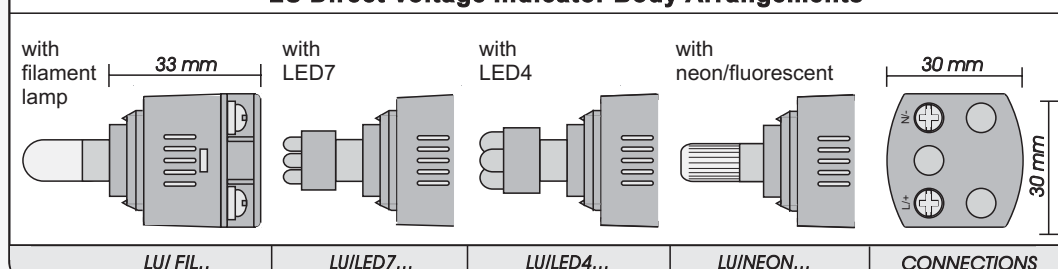
LEDM1F - single led flashing lamp in Amber, Green, Blue or White.

See Data Sheet 201 for a full list of lamps available.

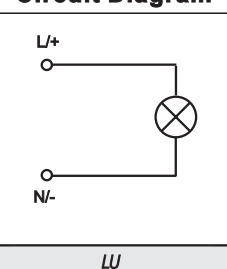
**Lamp Remover (LR1)** - suitable for all lamps.

**To find the correct Product Code for ordering, please turn to the reverse side.**

### LU Direct Voltage Indicator Body Arrangements



### Circuit Diagram



# SLIC LU

## Direct Voltage Indicator Lamps



Product Data Sheet 104/2 Issue 1

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 100)	Lens Colour (if applicable)	-	Body / Type	Lamp Product Code Type Colour Supply Cap
--	--------------------------------	---	----------------	---

<b>BODY TYPE</b>	Standard <b>SLIC</b> Low Voltage Multi-Test Indicator Lamp Body	<b>LU</b>
<b>LAMPS for LUs are extra.</b> (Supply volts = lamp volts) The full lamp product code should be used, when required.		

No Lamp fitted	Lamp Product Code	BLANK
----------------	-------------------	-------

<b>FILAMENT LAMPS</b> (AC or DC)	Filament Lamp	<b>FIL</b>
	Lamp Voltage (Also supply voltage)	6V 12V 24V 28V 50V 60V 130V
	Must use polycarbonate lens	
	Lamp Cap - must be Miniature Bayonet	<b>MBC</b>

<b>LED CLUSTERS</b>	LED Cluster - 7 diodes	<b>LED7</b>
	LED Cluster - 4 diodes	<b>LED4</b>
	Single LED Lamp	<b>LEDM1</b>
	Single LED Flashing lamp	<b>LEDM1F</b>
	Colours	Red Amber Green Blue White
		<b>R</b> <b>A</b> <b>G</b> <b>B</b> <b>W</b>
	Lamp Voltage (as supply voltage) * 4.5Vdc not available in blue or white	4.5V AC 24V AC 110V AC 4.5V DC* 24V DC
		<b>4.5AC</b> <b>24AC</b> <b>110AC</b> <b>4.5DC</b> <b>24DC</b>
	Lamp Cap - must be Miniature Bayonet	<b>MBC</b>

<b>NEONS/FLUORESCENTS</b>	Neon - natural (orange)	<b>NB2R</b>
	Fluorescent - green	<b>NG2R</b>
	Fluorescent - blue	<b>NW2R</b>
	Lamp Voltage (must be supply voltage) (AC only)	110V AC 240V AC
		<b>110V</b> <b>240V</b>
	Lamp Cap - must be Miniature Bayonet	<b>MBC</b>

<b>ACCESSORIES</b>	Lamp Remover suitable for removing all types of lamps from <b>SLIC</b> bodies	<b>LR1</b> (packs of 10)
--------------------	---	-----------------------------

**Example 1**  
Product Code:- **LU/LED7B 110AC MES**

is a Standard **SLIC** LU Direct Voltage Indicator Lamp body, blue LED 7 lamp cluster with MES cap and standard screw terminals. Input: 110V AC.

**Example 2**  
Product Code:- **FKYR-LU**

is a Standard **SLIC** LU Direct Voltage Indicator lamp with no lamp supplied mounted on an FP housing with a red BKY lens with black bezel. Input: Unspecified.

NU indicators are body units complete with neon/fluorescent lamps designed for connecting to standard ac supply voltages.

## Using Tranlamp SLIC NU's

- **enables low loading**

Where the total allowable lamp load current is low, the NU lamp could be the solution. Each lamp will typically take less than 5mA.

- **means no half light pick-up**

In-built blocking resistors eliminate pick-up.

- **increases flexibility**

A choice of JY Series panel housings or adaptations to suit 19 or 22.5 mm panel holes.

- **reduces panel assembly time**

Lamp body easy to fit clipping directly onto housing.

## Standard Specification

### Type

NU - Standard SLIC Indicator Lamp Body can carry:

NB2 neon lamp (orange)

NG2 fluorescent lamp (green)

NW2 fluorescent lamp (blue)

### Input Voltages

110, 240, 440V AC as standard

### Operating Frequency

50/60 Hz

### Load Rating

Typically 1.8mA (not greater than 5mA)

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamp Caps

BA9s Miniature Bayonet only accommodated on this unit - MBC

### Mounting

Mount to panel using JY Series housings or adaptations (see Data Sheet 100). DTU's clip onto housings and can be locked by tightening the locking ring. Suitable for 19mm or 22.5mm panel holes

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20



NU Indicator Body and Neon Lamp

### Construction

ABS/Polycarbonate black, flame retardant to UL94V0 non-drip.

### Tests

LU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

### Weights

14 g (body only)

16 g (including lamp)

## Optional Extras

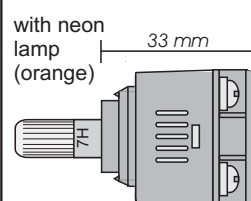
### Input Voltages

Voltages other than the standards listed will be considered above 110V AC.

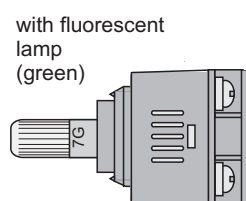
**Lamp Remover (LR1)** - suitable for all lamps.

**To find the correct Product Code for ordering, please turn to the reverse side.**

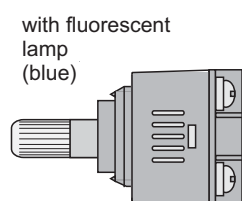
## NU Neon/Fluorescent Indicator Body Arrangements



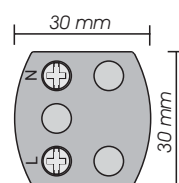
NU/ VOLTAGE/ NB2



NU/ VOLTAGE/ NG2

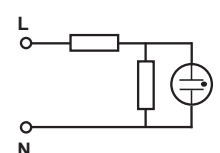


NU/ VOLTAGE/ NW2



CONNECTIONS

## Circuit Diagram



NU



**SLIC  
NU**

## Neon/Fluorescent Indicator Lamps



**Product Data Sheet 105/2 Issue 1**

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 100)	Lens Colour (if applicable)	-	Body / Input / Type Volts	Lamp Product Code Type & Colour	Cap
--	--------------------------------	---	------------------------------	------------------------------------	-----

<b>BODY TYPE</b>	Standard <b>SLIC</b> Indicator Lamp Body suitable for neon and fluorescent lamps with MBC caps. Lamps are always included with these unit. The Bodies have in-built blocking resistors; the lamps do not.	<b>NU</b>
------------------	---	-----------

<b>INPUT VOLTAGES</b>	AC Voltages only	100-120V AC	110
		220-240V AC	240
		400-440V AC	440

LAMPS	Select by colour	Neon - natural (orange)	NB2	
		Fluorescent - green	NG2	
		Fluorescent - blue	NW2	
	Lamp Cap - must be Miniature Bayonet		MBC	

<b>ACCESSORIES</b>	Lamp Remover suitable for removing all types of lamps from <b>SLIC</b> bodies	<b>LR1</b> (packs of 10)
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#### Example 1

**Product Code:- NU/240/NW2 MBC**

is a Standard **SLIC** NU Indicator Lamp body complete with a blue fluorescent lamp.  
Input: 240V AC.

#### Example 2

**Product Code:- FYA-NU/110/NB2 MBC**

is a Standard **SLIC** NU Indicator lamp body complete with a neon lamp. The body is mounted on an FY housing with amber lens and chromed bezel suitable a 22.5mm panel hole.  
Input: 110V AC.

**Other Neon/fluorescent products can be located on Data Sheets 206 & 210/2**

Indicator lamp body units for DC Supplies only.

### Using Tranlamp SLIC IRU's

- **provides a safe solution**

DC voltages can be directly connected to the unit. A resistor steps down the voltage to enable standard low voltage lamps to be fitted safely. The resistor has a maximum of 2W heat dissipation.

- **enables choice of lamps**

Can use with a selection of Tranlamp's range of:  
Filament Lamps  
LED4, LED7 or LEDM1 cluster lamps in  
amber, green, red, blue or white

- **gives a wide selection of housings/lenses**

A choice of JY Series panel housings or adaptations to suit 19 or 22.5 mm panel holes..

- **reduces panel assembly time**

Lamp body easy to fit, clipping directly onto housing.

### Standard Specification

#### Type

IRU - Standard **SLIC** DC Supply Indicator Lamp Body with internal resistor (2W or less).

#### Input Voltages

24, 50, 110, 130V DC. Other voltages can be considered with maximum internal heat dissipation 2W

#### Surrounding Air Temperature

Maximum 50 deg C when operating.

#### Lamps

Selected from 106/2 to minimise heat dissipation. Lamp fitted is printed on Part Label.

#### Lamp Caps

BA9s Miniature Bayonet only - MBC

#### Mounting

Mount to panel using JY Series housings or adaptations (see Data Sheet 100). IRU's clip onto housings and can be locked by tightening the locking ring.

#### Terminations

M3.5 cable clamps with fixed terminal covers to IP20

#### Construction

ABS/Polycarbonate black, flame retardant to UL94V0 non-drip.

#### Tests

IRU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

#### Weight (Body Only)

15 g

### Optional Extras

**Lamp Remover (LR1)** - suitable for all lamps.

IRU Indicator Body with Filament Lamp



IRU Indicator Body with 7 LED Cluster

IRU Indicator Body with 4 LED Cluster

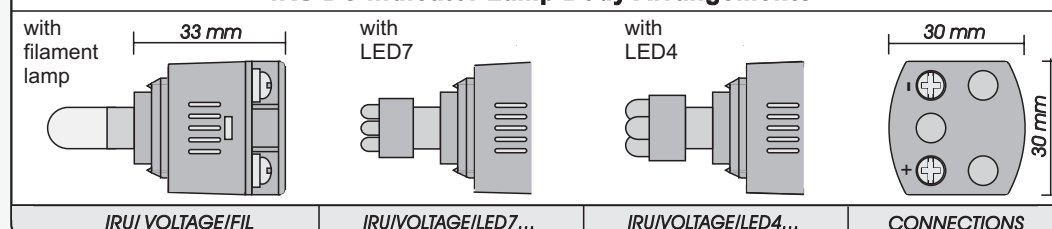


(For Lenses/Housings see Data Sheet 100)

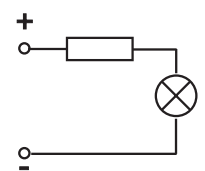
106

To find the correct Product Code for ordering, please turn to the reverse side.

### IRU DC Indicator Lamp Body Arrangements



### Circuit Diagram



IRU

**SLIC  
IRU**

## Indicator Lamps for DC Supplies



Product Data Sheet 106/2 Issue 1

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing	Lens Colour
(see Product Data Sheet 100)	(if applicable)

Body / Type	Lamp Type	LED Colour	DC Supply
----------------	--------------	---------------	--------------

<b>BODY TYPE</b>	<b>SLIC DC Supply Indicator Lamp Body with built-in resistor.</b>	<b>IRU</b>
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Many combinations of input and lamp voltages exist for this product. Listed below are some of those most commonly in demand. The main limitation is the heat dissipated from the in-built resistor (Maximum - 2W).

Please contact our Technical Sales Dept for any other requirement.

From the tables below, first select the type of lamp needed, then the dc supply (input) voltage. If LEDs are required, a colour will also have to be selected.

LAMP TYPE		DC Supply			
FILAMENT	50V	BLANK	BLANK		50
	110V				110
7 LED CLUSTER	12V*	LED7			12
	24V*			24	
	30V			30	
	50V			50	
	110V			110	
4 LED CLUSTER	12V*	LED4			12
	24V*			24	
	30V			30	
	50V			50	
	110V			110	
SINGLE LED LAMP	12V*	LEDM1			12
	24V*			24	
	30V			30	
	50V			50	
	110V			110	

LED CLUSTER COLOURS	* Blue and White LEDs are <b>not</b> available with 12V DC and 24V DC	Red	R
		Amber	A
		Green	G
		Blue	B
		White	W

<b>ACCESSORIES</b>	Lamp Remover suitable for removing all types of lamps from <b>SLIC</b> bodies	<b>LR1</b> (packs of 10)
--------------------	--	-----------------------------

**Example 1**  
Product Code:- **IRU/LED7A/24**

is a Standard **SLIC** IRU DC Indicator Lamp body, amber  
LED 7 lamp cluster with MBC cap and standard screw  
terminals.  
Input: 24V DC.

**Example 2**  
Product Code:- **FKYB-IRU/110**

is a Standard **SLIC** IRU DC Indicator lamp body with filament  
lamp supplied mounted on an FP housing with a blue BKY lens  
with black bezel.  
Input: 110V DC

Modular switch blocks which clip onto Y Series Pushbutton assemblies (actuator housings). Up to 4 contacts can be utilised in any combination of N/O and/or N/C. These units are only supplied as a Pushbutton Assembly plus Switch Block Assembly (P01-P05). Additional Switch Blocks (P06-P10) and/or End Caps (EC) may be supplied separately, if required.

### Features

- pushbutton style matches **SLIC** indicator lenses and rotary switch handles
- flush or projecting pushbuttons available
- chrome or black bezels available
- housings suitable for 19 or 22.5mm panel holes
- switch blocks carry 1 or 2 contacts
- each unit can use 1 or 2 blocks

### Standard Specification

#### Pushbuttons

Flush or projecting polycarbonate buttons with chromed brass or black polycarbonate bezels.

#### Panel holes

19mm or 22.5mm diameter

#### Function

Momentary only

#### Switch blocks

Current rating: 12A, 380Vac

16A, 250Vac

25mA, 5Vac

Contacts: material - silver

gap - 1.5mm.

initial resistance - 10 mohms max  
at 1A, 4Vdc

Insulation resistance: 50 Mohm min

Dielectric strength: 2kV between open contacts  
4kV live to accessible

Electrical life: 50,000 cycles min.

Insulation: Class 2

Terminals: M3 screws - wire 2 x 0.75 mm<sup>2</sup>

Minimum mechanical life: 1M cycles

Operating temperature: -20°C to +85°C

Operating humidity: up to 95% RH

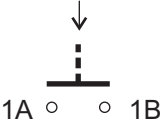
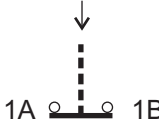
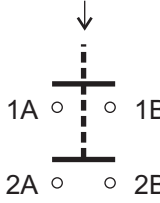
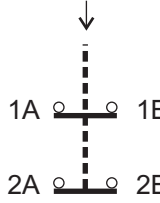
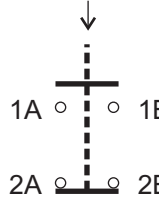
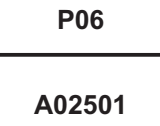
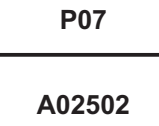
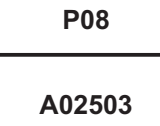
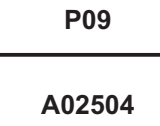
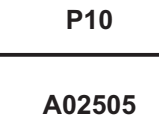
Approvals: VDE, RU, CSA, BEAB.

All units are CE marked

### Optional Extras

- End Cap to cover switch block terminals (EC)

### Switching Arrangements

<b>1st Switch Block</b> <b>Product Code</b> (switch block + pushbutton adaptor + block operator)	P01	P02	P03	P04	P05
					
+					
(if required)					
<b>2nd Switch Block</b> <b>Product Code</b> (switch block only)	P06	P07	P08	P09	P10
					
<b>Contact</b> <b>Arrangement No.</b>	A02501	A02502	A02503	A02504	A02505



1. 2 x N/O contacts c/w  
flush pushbutton/chromed  
bezel for 22.5mm panel hole  
**Product Code: PFY/Colour-P03**



2. As 1 with additional  
2 N/O contact switch  
block (Total: 4 X N/O)  
**Product Code:**  
PFY/Colour-P03/PO8



# SLIC P Series

## Pushbutton Switches 19mm and 22.5mm



Product Data Sheet 120/2 Issue 1

### Finding the correct Product Code

Construct the product code by inserting the code parts as shown. Where options are not required leave blank.

Product Code: **PUSHBUTTON/ COLOUR – SWITCH BLOCK 1/ SWITCH BLOCK 2/ END CAP**  
**ASSEMBLY ASSEMBLY (if required) (if required)**

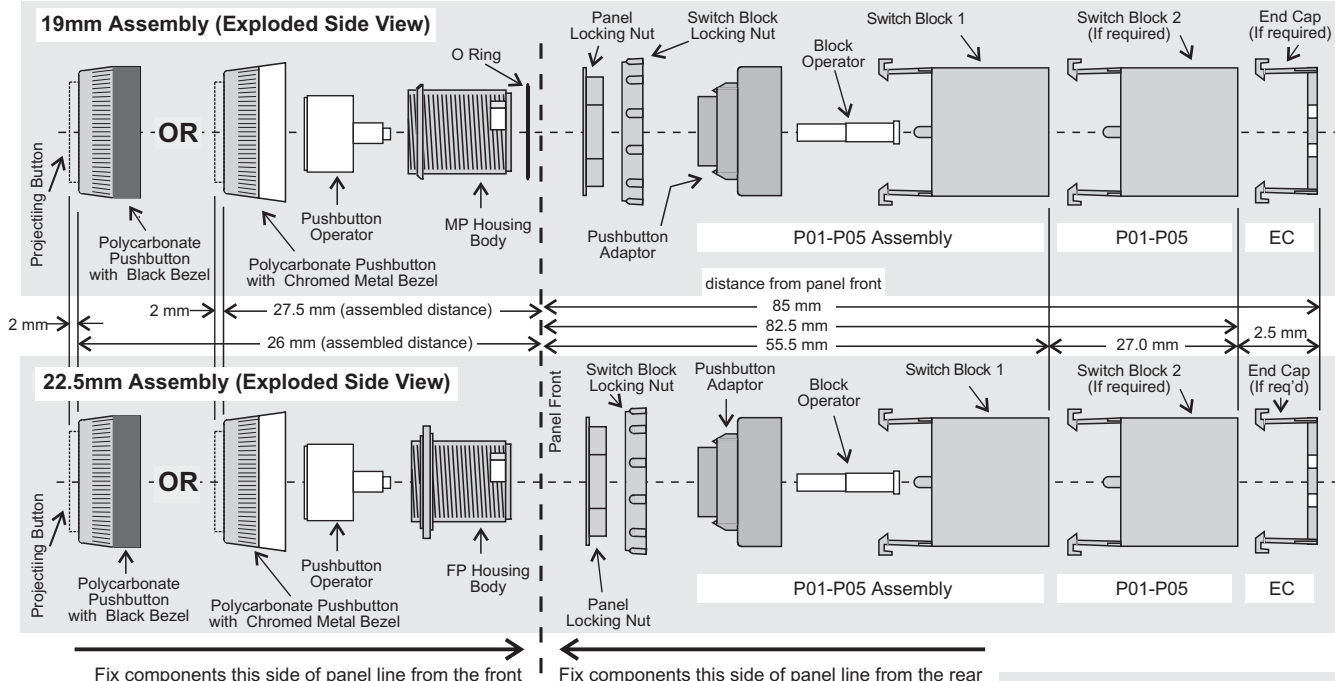
PUSHBUTTON ASSEMBLY	Panel Hole diam. mm	Pushbutton Definition			PMKY	Colour	
		Bezel Colour	Pushbutton Position	Housing Body			
	19	Black	Flush	MP	PMKY	Amber	A
	19	Chrome	Flush	MP	PMY	Blue	B
	19	Black	Projecting	MP	PMKYP	Green	G
	19	Chrome	Projecting	MP	PMYP	Black	K
	22.5	Black	Flush	FP	PFKY	Red	R
	22.5	Chrome	Flush	FP	PFY	Clear	T
	22.5	Black	Projecting	FP	PFKYP	White	W
	22.5	Chrome	Projecting	FP	PFYP		

SWITCH BLOCK ASSEMBLY	Options	Contacts		End Cap (Terminal Cover)
		Switch block 1	Switch block 2	
		1 N/O	1 N/O	P01
		1 N/C	1 N/C	P02
		2 N/O	2 N/O	P03
		2 N/C	2 N/C	P04
		1 N/O, 1N/C	1 N/O, 1N/C	P05
		1 N/O	1 N/O	P06
		1 N/C	1 N/C	P07
		2 N/O	2 N/O	P08
		2 N/C	2 N/C	P09
		1 N/O, 1N/C	1 N/O, 1N/C	P10
		End Cap (Terminal Cover)		EC

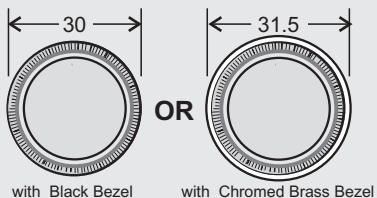
**Example: Product Code: PFY/K-P04/P08/EC**

Pushbutton switch with 2 N/O, 2 N/C switch blocks and end cap. Panel hole Size: 22.5mm. The pushbutton is flush with black button & chromed bezel.

### Dimensions, Weights and Assembly Details



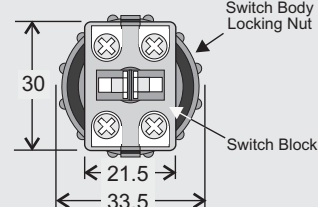
#### Polycarbonate Pushbuttons (front view)



#### Total Weights gms (pb assy (any colour) + block)

	PMKY PFKY	PMY PFY	PMKYP PFKYP	PMYP PFYP	Switch Block Product Code
	32	36	33	37	P01, P02
	38	42	39	43	P03, P04, P05
Options	+16	+16	+16	+16	P06, P07
	+22	+22	+22	+22	P08, P09, P10
	+2	+2	+2	+2	EC

#### Switch Block (Rear View)





Modular switch block which clip onto Emergency Stop mushroom headed pushbutton operators. Up to 2 N/C contacts can be utilised.

These units are only supplied as a Pushbutton Assembly (ES1) plus Switch Block Assembly (switch blocks P11 or P12) with an End Cap (EC), if required.

## Features

- 40mm diameter red mushroom-headed pushbutton operator conforming to UL1054/EN60947.
- Press pushbutton for maintained contact operation.
- Twist pushbutton clockwise to release and reset to ON.
- Switches are highly reliable positive break type.
- Switch blocks carry 1 or 2 N/C contacts.
- Panel hole 22 mm diameter.
- Operator and switch block must be supplied together.

## Standard Specification

### Pushbuttons

Red Emergency Stop mushroom-headed pushbutton operator assembly.

### Panel holes

22.0 - 22.5mm diameter

### Function

Momentary only

Push for Emergency Stop

Twist in clockwise direction to reset and return to ON

### Switch blocks

Current rating: 12A, 380Vac, IEC  
12A, 250Vac RU  
AC15 inductive load - 2.5A  
25mA minimum, 5Vac

Contacts: material - silver  
gap - 1.5mm.  
Initial resistance - 10 mohms max  
at 1A, 4Vdc

Insulation resistance: 50 Mohm min

Dielectric strength: 2kV between open contacts  
4kV live to accessible

Electrical life: 50,000 cycles min.

Insulation: Class 2

Terminals: M3 screws - wire 2 x 0.75 mm<sup>2</sup>

Minimum mechanical life: 1M cycles

Operating temperature: -20°C to +85°C

Operating humidity: up to 95% RH

Approvals: VDE, RU, CRU,.

All units are CE marked

## Optional Extras

- End Cap to cover switch block terminals (EC)
- Emergency Stop self-adhesive label (ESL)  
- 90mm diameter  
- black "Emergency Stop" text on yellow background

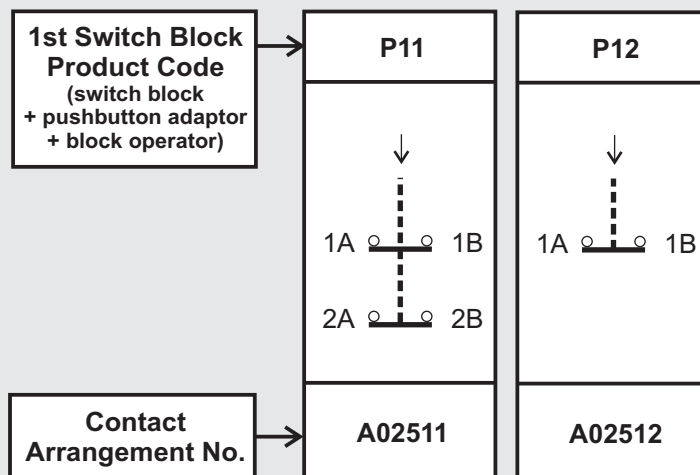


### Emergency Stop Pushbutton Assembly consisting:

- 1- Emergency Stop operator
- 1- Switch block
- 1- End cap

**Product Code: ES1-P11/EC**

## Switching Arrangements



### Finding the correct Product Code

Construct the product code by inserting the code parts as shown. Where options are not required leave blank.

Product Code

OPERATOR ASSEMBLY

SWITCH BLOCK 1 ASSEMBLY

END CAP (if required)

EM STOP LABEL (if required)

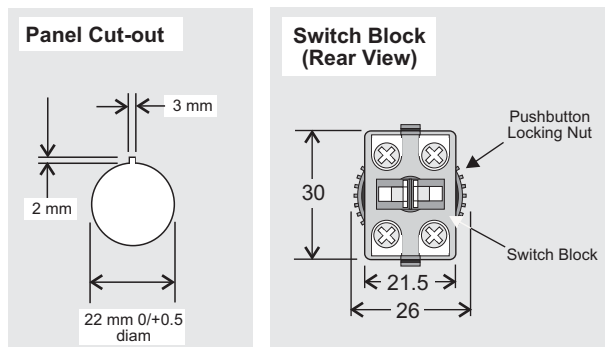
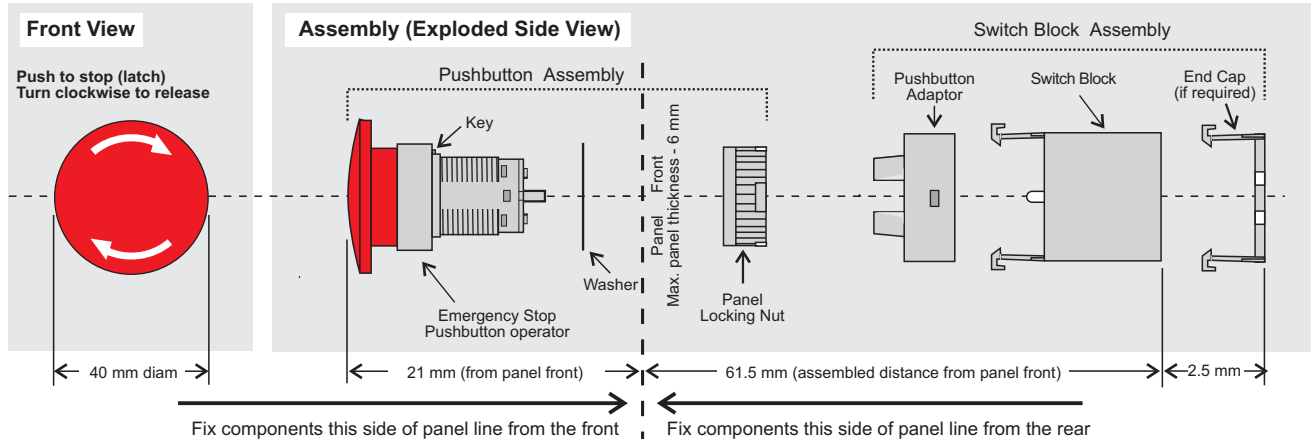
OPERATOR ASSEMBLY			
Panel Hole diameter	Pushbutton		
	Colour	Diameter	
22.0 - 22.5mm	Red Mushroom actuator	40mm	ES1

SWITCH BLOCK ASSEMBLY			
Contacts	1 N/C	P11	
	2 N/C	P12	
Option 1	End Cap (Terminal Cover)	EC	
	End Cap not required		
Option 2	90mm Emergency Stop Label	ESL	
	Emergency Stop Label not required		

**Example 1 Product Code: ES1-P11**  
Emergency Stop switch with 1 N/C contacts.  
Panel hole size: 22.5mm.

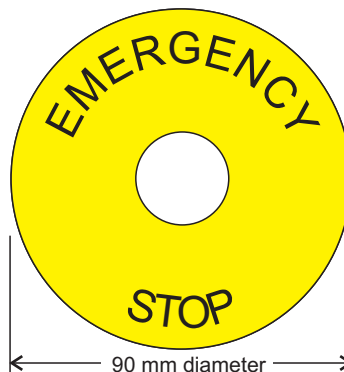
**Example 2 Product Code: ES1-P12/EC/ESL**  
Emergency Stop switch with 2 N/C contacts, terminal end cap and 90mm diameter self-adhesive EMERGENCY STOP label.

### Dimensions, Weights and Assembly Details



#### Option

Emergency Stop self-adhesive label (ESL)



#### Weights

Product Code	gms
ES1	21
P11	26
P12	21
EC	2

The general dimensions shown on this sheet have tolerances of +/- 0.3 mm. Dimensions, specifications and data shown are subject to change without notice.

A range of 10A rotary switches with housings and handles. Basic On-Off and Changeover units are stocked. Other multi-position and multi-pole switch arrangements can be made up to order. They can be used in applications for main and auxiliary circuits; as motor switches; for control circuits, electrical heating and illuminating circuits or as ammeter/voltmeter changeover switches.

## Standard Specification

All switches are manufactured and tested in accordance with IEC947, EN60947, VDE0660 specifications and are CE labelled

Switch ratings	IEC EN	UL CSA
<b>Voltages</b>		
Operational Voltage	440V	300V
Isolating Voltage	250V	250V
Resistance to surge voltage	4kV	4kV
Insulation Voltage	690V	-
<b>Currents</b>		
Uninterrupted Current	10A	10A
Operational Current		
AC-21A Switching resistive loads	10A	-
AC-1 Resistive loads	10A	-
AC-15 Control of electromagnetic loads	2.5A	-
220-240V	1.5A	-
380-440V	-	10A
300V	-	-
Heavy Duty	-	-
<b>Operational Power at 50/60Hz</b>		
AC-23A Switching of motor/inductive loads		
3 phase, 3 pole	220-240V 1.8kW	-
	380-440V 3kW	-
1 phase, 2 pole	110V 0.37kW	-
	220-240V 0.75kW	-
	380-440V 1.1kW	-
AC-3 Start/Stop Squirrel Cage motors		
3 phase, 3 pole	220-240V 1.5kW	-
	380-440V 2.2kW	-
1 phase, 2 pole	110V 0.3kW	-
	220-240V 0.55kW	-
	380-440V 0.75kW	-
DOL Start Squirrel Cage motor		
3 phase, 3 pole	120V -	1HP
	240V -	1HP
1 phase, 2 pole	120V -	0.33HP
	240V -	0.75HP



A 2 position, 2 pole switch with black handle and black bezel

**Product Code: RMKY/K-RB10/2/2**

## Features

- supplied as switch/handle/housing assemblies only
- gold plated contacts
- open terminals accessible from mounting direction
- captive terminal screws
- housings suitable for 19 or 22.5mm panel holes
- 30mm handle assembly with chrome or plastic bezel

## Optional Extras

In addition to the standard units described in this data sheet we can also supply special switch combinations:

- up to 12 switching positions
- multi pole assemblies for virtually any switching arrangement
- engraved legend plates to order
- control switches with spring return
- 30/60 degree or 45/90 degree switching angles

**Mechanical life:** greater than 1 million operations

**Ambient temperature (open):** +50/-25 deg C

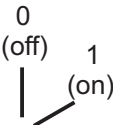


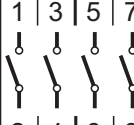

**Ambient temperature (enclosed):** +40/-25 deg C

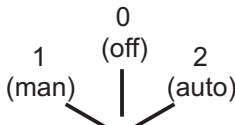



**Rated frequency range:** 50/60 Hz

**Maximum fuse size (gL):** 10A

**Rated fused short circuit current:** 3kA

## Switching Diagrams

ON-OFF SWITCHES	Switch Code	RB10/2/1	RB10/2/2	RB10/2/3	RB10/2/4	RB10/2/6
	No of Poles	1	2	3	4	6
	Terminal No	1   	1   3 	1   3   5 	1   3   5   7 	1   3   5   7   9   11 
	Terminal No	2	2   4	2   4   6	2   4   6   8	2   4   6   8   10   12
	0 (off)					
1 (on)	X	X	X	X	X	

CHANGEOVER SWITCHES	Switch Code	RB10/3/1	RB10/3/2	RB10/3/3	RB10/3/4
	No of Poles	1	2	3	4
	Terminal No	1   	1   5 	1   5   9 	1   5   9   13 
	Terminal No	2   4	2   4   6   8	2   4   6   8   10   12	2   4   6   8   10   12   14   16
	1 (man)	X	X	X	X
0 (off)					
2 (auto)	X	X	X	X	

# SLIC RB10

## Rotary Switches 10A 19mm and 22.5mm



Product Data Sheet 130/2 Issue 1

### Finding the correct Product Code

Choose the panel hole diameter and then the handle and bezel types. Handles are clear or solid black polycarbonate. Bezels are black polycarbonate or chrome plated brass. Enter the handle assembly product code and switch body number. **Handles and switch bodies can only be ordered together.**

#### Product Code Arrangement

**HANDLE ASSEMBLY — SWITCH BODY ASSEMBLY**

HANDLE ASSEMBLY	Panel Hole diameter mm	Handle Definition				
		Handle Colour	Bezel Colour	Keyway Washer	Housing Body	
	19	Black	Black	M	MP	RMKY/K
	19	Black	Chrome	M	MP	RMY/K
	22.5	Black	Black	F	FP	RFKY/K
	22.5	Black	Chrome	F	FP	RFY/K

#### Example

**Product Code: RFY/K-RB10/3/3**

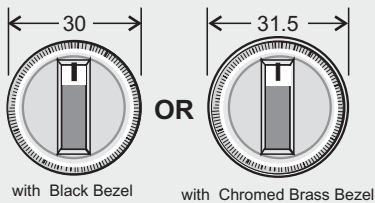
A 3way, 3pole 10 Amp rotary changeover switch and handle assembly suitable for 22.5mm diameter panel hole. The handle is black polycarbonate and the bezel chromed brass. An F Keyway Washer, which prevents the switch rotating in the panel, is supplied as part of the Handle Assembly.

**The Switch Body and Handle Assembly are not supplied assembled**

SWITCH BODY ASSEMBLY		Positions	Poles	
On - Off	2	1		RB10/2/1
		2		RB10/2/2
		3		RB10/2/3
		4		RB10/2/4
Changeover	3	6		RB10/2/6
		1		RB10/3/1
		2		RB10/3/2
		3		RB10/3/3
Specials		4		RB10/3/4
		Many combinations of multi-way, multi-pole & spring return switches are available to order. <b>Contact Technical Sales for details and Product Codes.</b>		

### Dimensions, Weights and Assembly Details

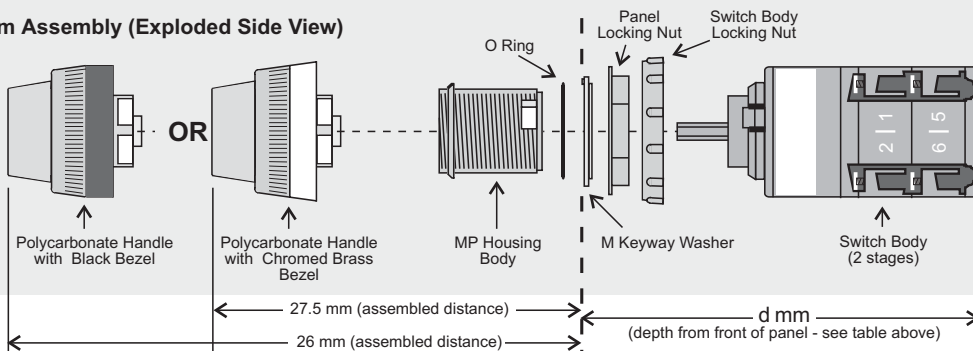
#### Polycarbonate Handles (front view)



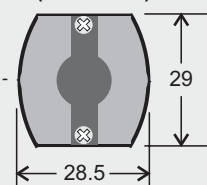
#### Weights & Dimension d

No of Stages	d mm	Total Weights gms (handle assy + switch body)				Switch Body Product Code
		RMKY/K	RMY/K	RFKY/K	RFY/K	
1	55	39	43	40	44	RB10/2/1, RB10/2/2, RB10/3/1
2	67	50	54	51	55	RB10/2/3, RB10/2/4, RB10/3/2
3	79	61	65	62	66	RB10/2/6, RB10/3/3
4	91	72	76	73	77	RB10/3/4

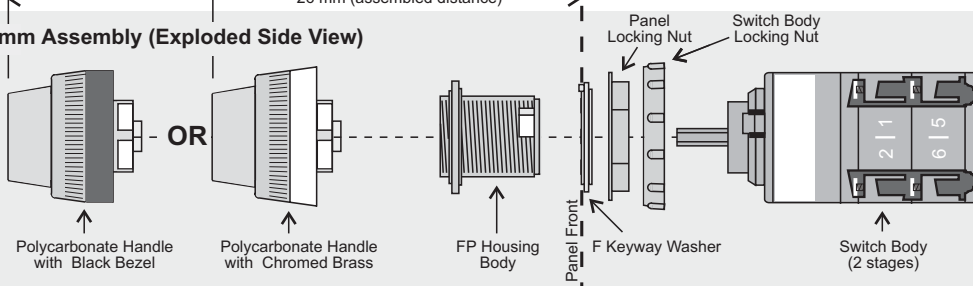
#### 19mm Assembly (Exploded Side View)



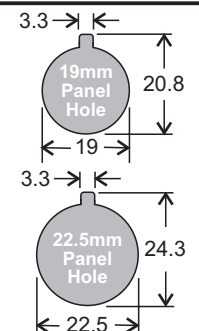
#### Switch Assembly (Rear View)



#### 22.5mm Assembly (Exploded Side View)



#### Panel Hole Dimensions mm



Fix components this side of panel line from the front      Fix components this side of panel line from the rear












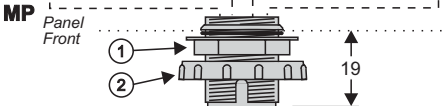
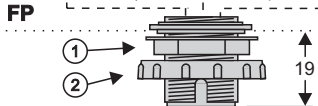
## Interchangeable housings/lenses for Tranilamp Indicator Lamp Body Units.

Choose the Series, panel hole diameter and lens type you require; then use the tables overleaf to compare with the required Indicator Lamp Body, and lamp type to check for compatibility and correct housing length.

### JY Series

#### Standard Features:

**Housings:** - Black moulded glass reinforced nylon.  
**Lens:** - Polycarbonate welded to bezels.  
**Bezels:** - BJ & BY - Chromed brass; BKY - Black plastic  
**Protection:** - with BJ & BY - IP64; with BKY - IP65

Hole Dia mm		19			22.5			30.5	
Lens Dia mm		22.3	30	30	22.3	30	30	30	
Product Code Make-up	Lens A = Amber B = Blue G = Green R = Red T = Clear W = White	BJ(Colour) 	BY(Colour) 	BKY(Colour) 	BJ(Colour) 	BY(Colour) 	BKY(Colour) 	BY(Colour) 	
	Panel Hole Adaptor				ADMF 			ADFD 	
	Housing	MP 				FP 			
	Complete Assembly	MJ Lens Colour	MY Lens Colour	MKY Lens Colour	FJ Lens Colour	FY Lens Colour	FKY Lens Colour	DY Lens Colour	
Options	Protection to IP65	Not available	IP65 SEALING WASHER behind lens	IP65 standard	Not available	IP65 SEALING WASHER around housing flange	IP65 standard	Not available	
	Legend Plates	Available for all assemblies, blank or engraved as required. (Data Sheet 214)							
	DIN Keyway	M KEYWAY WASHER (Specify "DIN Keyed")				F KEYWAY WASHER (Specify "DIN Keyed")			Not available













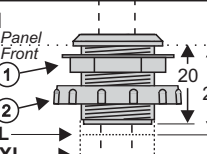
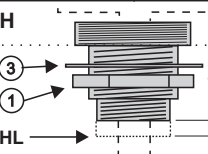
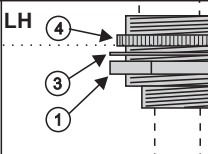
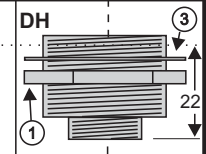


Product Code Example: -"FY Blue" or "FYB" = FP Housing + BY Blue Lens (Indicator Lamp Data Sheets give Full Assembly Codes)

### H Series

#### Standard Features:

**Housings & Bezels:** - Chrome plated brass.  
**Lens:** - Polystyrene (lamps more than 2W use polycarbonate).  
**Protection:** - IP64.

Hole Dia mm		19		22.5		26.5		30.5
Lens Dia mm		17.5	17	21.5	23.5	23.5	23.5	26
Product Code Make-up	Lens A = Amber B = Blue G = Green R = Red T = Clear W = White	MA(Colour) 	MC(Colour)  polycarb 2 6	FA(Colour) 	FB(Colour)  Note: FB=LB	LA(Colour) 	LB(Colour)  Note: FB=LB	DA(Colour) 
	Bezel ① O RING 19X2.5 Note: BFB=BLB			BFA 	BFB 	BLA 	BLB 	BDA 
	Housing ① Panel locking nut ② Indicator locking ring ③ Fibre washer ④ Panel locking ring  Check overleaf for correct length of housing to use with lamp and indicator body.	MH  Panel Front ① 20 23 29 MHL MHXL	FH  ③ ① 16 22 FHL	LH  ④ ③ ① 18	DH  ③ ① 22			
	Complete Assembly	MHA Lens Colour MHLA	MHC Lens Colour MHLC MHXC	FHA Lens Colour FHLA	FHB Lens Colour FHLB	LHA Lens Colour	LHB Lens Colour	DHA Lens Colour
	Options	Protection to IP65	O RING 19x2.5 locking nut-panel	O RING 19x2.5 locking nut-panel Lens-polycarbonate	O RING 19x2.5 housing shoulder-panel	O RING 22x1.5 lens-housing	WASHER RUBBER LH metal ring-panel LH PTT WHITE INSERT inside housing O RING 22x1.5 lens to white insert	
Lens Material	Polycarbonate available for MA, MC, FB, LA & LB (Specify "Polycarbonate Lens")							
Black Bezels	Black Epoxy Coating. Note:- MH, MHL, MHXL, the complete hosing body is black. (Specify "Black Bezel")							
Legend Plates	Available for all housings either blank or engraved, as required. (Data Sheet 214)							
DIN Keyway	Available on all housings. (Specify "DIN Keyed")							

Product Code Example: -"MHL Red" or "MHLR" = MHL Housing + MC Red Lens (Indicator Lamp Data Sheets give Full Assembly Codes)



# JY H Series

## Housing and Lens Assemblies



Product Data Sheet 200/2 Issue 2

### Indicator Body/Housing/Lamp Compatibility (and Fitting Dimensions)

1. Compare the Housing/Lens Assembly and Indicator Body chosen, noting the symbol where the respective row and column intersect.
2. Find the symbol in the Lamp Compatibility Table to verify the lamp and lamp cap are compatible
3. If not compatible, try a longer housing, when available.

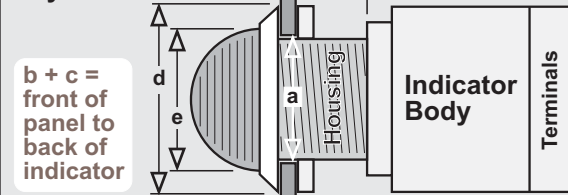
Indicator Body Type			Product Data Sheet No	C - Body Depth mm	JY Series Housing and Lens Assemblies							H Series Housing and Lens Assemblies										
												DHA	LHB	LHA	FHLB	FHB	FHLA	FHA	MHXL	MHLC	MHC	MHLA
a - Panel Hole Dia. mm					30.5	22.5	22.5	22.5	19	19	19	30.5	26.5	26.5	22.5	22.5	22.5	19	19	19	19	19
Indicator Lamps																						
TMU	202	59		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
TEMU	202	60		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
NBMU	206	42		△	△	△	△	△	△	△	△	☆	☆	☆	☆	△	☆	△	△	△	×	
NGMU	206	42		△	△	△	△	△	△	△	△	☆	☆	☆	☆	△	☆	△	△	△	×	
NWMU	206	42		△	△	△	△	△	△	△	△	☆	☆	☆	☆	△	☆	△	△	△	×	
RMU	207	42		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	□	□	
IRMU	207	75		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	□	□	
LMU/4	205	42		○	○	○	○	○	○	○	○	●	●	●	●	○	●	○	□	□	□	
LMU/2	212	25		●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●	
PFTMU	210	67		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
Test Indicators																						
MTMU	203	67		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
DTMU	204	50		○	○	○	○	○	○	○	○	△	△	△	△		△	○	□	○	□	
Flashing Indicators																						
FACTMU	208	65		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
FSACTMU	208	67		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
FACLMU	208	42		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
FDCLMU	208	42		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
FSACLMU	208	50		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
FSDCLMU	208	50		○	○	○	○	○	○	○	○	△	△	△	△	○	△	○	□	○	□	
Other dimensions and weights																						
b - Housing Depth mm				11	13	13	11	13	13	13		16	12	12	15	11	15	11	22	15	13	15
d - Bezel Diameter mm				33.5	30	31.5	26	30	31.5	24		35	30.5	32	28.5	28.5	28.5	28.5	22.5	22.5	22.5	22.5
e - Lens Diameter mm				30	30	30	22.3	30	30	22.3		26	23.5	23.5	23.5	23.5	21.5	21.5	17	17	17	17.5
	Weight g			32	10	21	15	10	21	11		46	39	45	47	42	49	44	23	19	19	19

#### Lamp Compatibility Table

(See Product Data Sheet No 201 for Lamp details)

Symbol	●	○	△	△	□	☆	×
Filament	✓	✓	✓	×	✓	×	×
LED4, LEDM4 & LED7	✓	✓	✓	×	×	×	×
Neon & Fluorescent	✓	×	×	✓	×	✓	×
MES cap (miniature screw)	✓	✓	✓	✓	✓	✓	×
MBC cap (miniature bayonet)	✓	×	✓	×	×	✓	×

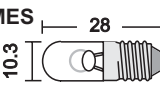
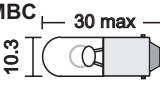
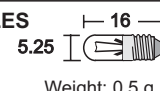
#### Dimension Key



**A comprehensive range of lamps designed for use with Tranlamp illuminated products.**  
Selection depends on required voltage, power limitations, lamp life, brightness, cost, cap size and indicator colour.






### Filament

The standard for indicator switch products unless otherwise specified. Use with any lens colour.  
\*Transformer indicators with 6V lamps are run at reduced voltage, giving up to 400% extra life.

Volts AC or DC	Watts	mA	Product Code ☆			Typical Life (hours) † - AC volts (DC-reduce to 60% of AC)	Typical Brightness (Lumens)	Dimensions mm
			MES	MBC	LES			
● Standard for transformer indicator	6	0.36	60	-	-	6V0.36 LES	10,000	 MES 28 10.3 Weight: 2 g
	6	0.9 Flash	50	6V0.9 Flash	-	-	-	
	6	1.8	300	6V1.8	6V1.8 MBC	-	4,000 *	 MBC 30 max 10.3 Weight: 2 g
	6.5	2.0	300	-	6.5V2.0 MBC	-	4,000	
	12	1.2	100	12V1.2	12V1.2 MBC	-	5,000	 LES 16 5.25 Weight: 0.5 g
	24	1.2	50	24V1.2	24V1.2 MBC	-	5,000	
	24	2.8	120	24V2.8	24V2.8 MBC	-	3,000	
	28	1.1	40	-	-	28V1.1 LES	4,000	
	28	1.0	40	28V1.0	28V1.0 MBC	-	3,000	
	50	2.5	50	50V2.5	50V2.5 MBC	-	5,000	
	60	1.2	20	60V1.2	60V1.2 MBC	-	3,000	
	60	3.0	50	60V3.0	60V3.0 MBC	-	3,000	
	130	2.6	20	130V2.6	130V2.6 MBC	-	3,000	

### LED Clusters

Long life, bright lamps at lower currents. The leds are configured as standard in parallel circuits. This means that the functionality of the lamp is maintained in the event of a diode failure although there is obviously some reduction in light emission. Where the lowest possible current is required a series circuit is used. The 5 colours are usually used with the matching colour lenses, but amber and green can be used with clear and white lenses respectively for colour variation.

Type	Supply		Current mA			Product Code Make-up ☆					Dimensions mm		Typical Brightness																	
	AC/DC	Volts	AGR	B	W	Type	Colour	Supply V	Current	Cap																				
All these LED lamps are covered by Patent No 2098714	LED7  Wide light spread for indicator lamps	AC	4.5	60	80	80	LED7	A G R B W	4.5AC	Enter mA from Current table	MES  MBC	LED7		MES	Led clusters are designed to give a brightness similar to filament bulbs. We manufacture 7 or 4 led clusters. The more leds in the cluster, then the better the light spread through lenses.															
			24	40	40	40			24AC																					
			24	20	-	-			24AC																					
			110	14	-	8			110AC																					
		DC	4.5*	80	-	-			4.5DC																					
			12	40	-	60			12DC																					
			24	20	20	20			24DC																					
			24	40	40	40			24DC																					
		LED4  for indicator lamps	AC	4.5	40	40			40							LED4	A G R B W	4.5AC	Enter mA from Current table	MES  MBC	LED4		MES	Normal configurations of multi-led clusters use parallel connected circuits of leds. If one led fails the lamp operates at reduced brightness through the healthy circuit/s.						
				24	40	40			40									24AC												
				24	20	-			-									24AC												
				110	15	-			15									110AC												
	DC		4.5*	40	40	-	4.5DC																							
			12	20	-	-	12DC																							
	LEDM4  for illuminated actuating assemblies	AC	4.5	40		40	LEDM4	A G R B W	4.5AC	Enter mA from Current table	MES  MBC	LEDM4		MES	Continuity of operation and visibility of a failure is a considerable aid to maintenance.															
			24	40	40	40			24AC																					
			110	8	8	8			110AC																					
			24	40		40			24DC																					
DC		24	40		40	24DC																								
		24	20			24DC																								
LEDM1  for indicator lamps		AC	4.5	30	30	30			LEDM1							A G R B W	4.5AC	X	MES  MBC	LEDM1 and LEDM1F		MES	LEDM1 is a range of single led lamps chosen for their brightness and 120° wide field of vision.							
			24	30	30	30											24AC													
			110														110AC													
			24	30	30	30											24DC													
	DC																													
LEDM1F  for indicator lamps flashing at a nominal 2Hz	AC & DC	4.5	30	30	30	LEDM1F	A G R B W	4.5		X	MES  MBC	LEDM1 and LEDM1F		MES	A flashing version, the LEDM1F is available and suitable for both ac and dc voltages. Flashing rating nominally - 2Hz.															

\* Blue and White clusters are not available at 4.5Vdc.

Other AC/DC voltages for any of the above can be considered on application.

Colour Key:- A=Amber, G=Green, R=Red, B=Blue, W=White

\* Blue and White clusters are not available at 4.5Vdc.

Other AC/DC voltages for any of the above can be considered on application.  
Colour Key:- A=Amber, G=Green, R=Red, B=Blue, W=White

Example 1: LED7A 4.5AC 60mA MES = Amber 7 LED cluster with Miniature Edison Screw cap supplied from 4.5VAC.

Example 2: LED4R 24DC 20mA MBC = Red 4 LED cluster (20mA option) with Miniature Bayonet Cap supplied from 24VDC.

### Lamp Cap Types:

MES = Miniature Edison Screw (E10). Supplied as standard unless otherwise specified.  
MBC = Miniature Bayonet Cap (BA9s). Available for most lamp types. Specify if required.  
LES = Lilliput Edison Screw (E5). Available only for 6V and 28V Filament.

☆ Use product codes given here to order lamps independently from indicator assemblies

# Lamps



## Neons/Fluorescent Optoled7



Product Data Sheet 201/2 Issue 2

### Neon, Fluorescent

A very low current alternative, if low brightness is acceptable. Neon's can be used with opal, clear, red and amber lenses; fluorescents only their own colour lenses.

Current Rating All 1.8mA		Product Code ☆						Dimensions mm		
		For Tranilamp "N" type indicators bodies <b>only</b> . Data sheet 206.		For direct connection to Supply Voltage (internal resistor fitted). Use with Direct Voltage Indicator Body Type LMU. Data Sheet 205						<b>MES</b>  <b>MBC</b>  Weight: 3 g
Supply 110V (AC only)				Supply 240V (AC or DC)						
Colour	Type									
Orange	Neon			NB2 MES	NB2 MBC	NB2R 110 MES	NB2R 110 MBC	NB2R 240 MES	NB2R 240 MBC	
Green	Fluor'	NG2 MES	NG2 MBC	NG2R 110 MES	NG2R 110 MBC	NG2R 240 MES	NG2R 240 MBC			
Blue	Fluor'	NW2 MES	NW2 MBC	NW2R 110 MES	NW2R 110 MBC	NW2R 240 MES	NW2R 240 MBC			
Typical Life		10,000 hours on AC Supply - 6,000 hours on DC Supply				Typical Brightness		All 0.27 lumens		

Weight: 3 g

### Lamp Cap Types:

MES = Miniature Edison Screw (E10). Supplied as standard unless otherwise specified.  
MBC = Miniature Bayonet Cap (BA9s). Available for most lamp types. Specify if required.  
LES = Lilliput Edison Screw (E5). Available only for 6V and 28V Filament.

★ Use product codes given here to order lamps independently from indicator assemblies

## Optoled7

Design Registration No 2051734

This Cluster lamp has been designed as a replacement for control panel pigmy lamps and on control panels where very high brightness, low power consumption and long life are desirable.

### Standard features:

#### ● Long Life

More than 100,000 hours, even in environments of high shock, high vibration and large temperature variations. This leads to considerably reduced maintenance costs.

#### ● Very bright

By using 7 ultra-bright LED's the total brightness is typically 2,000 mcd (25 lumens). The arrangement of LED's ensures the optimum diffusion of light through a lens, minimising light concentrations.

### Product Code Make-up

Type	Colour	Supply V	Cap
OPTOLED7	A	24AC	BC
	G	24DC	SBC
	R	110AC	
	B	110DC	
	W	230AC	
	A = Amber G = Green R = Red B = Blue W = White	Above voltages are available for all colours. Frequency: 50/60Hz	BC = Bayonet Cap(B22d) SBC = Small Bayonet Cap (B15d)

### Examples

1. OPTOLED7A /110AC/BC 2. OPTOLED7W/24DC/SBC

#### ● Supply Voltages

Available in standard supply volts of 24V, 110V, 230V ac at 50/60 Hz and 24V, 110V dc. Other voltages can be considered, if requested. Overvoltage tolerance of +20% is standard.

#### ● Low Current

Less than 25mA per lamp (total for 7 LED's)

#### ● Flame Resistant

The plastic body is to flame retardant standard UL94V0.

#### ● Low Operating Temperature

Body temperature operates much lower than filament.

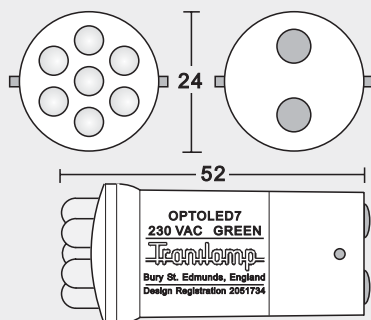
#### ● Colour Options

LED colours available are amber, green, red, blue & white.



### Dimensions mm

#### BC

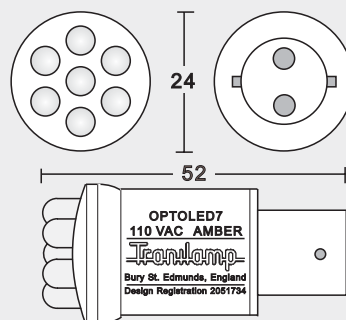


### Weights

BC - 11g  
SBC - 16g

Bayonet Cap (B22d)

#### SBC



Small Bayonet Cap (B15d)

## Tranilamp TMU's

### ● *increase life expectancy of lamps*

Running the lamp at below rated voltage increases the typical running life of a filament lamp from 4000 hours to beyond 16,000 hours. Tranilamp LED clusters have a life typically in excess of 100,000 hours.

### ● *increase safety*

Lamp voltages are isolated and at low safe levels

### ● *increase flexibility*

Use with Tranilamp's extensive range of:  
Panel housings and lenses  
LED cluster lamps  
Filament lamps

## Standard Specification

### Types

**TMU** -Standard Transformer Indicator Lamp Body.

**TEMU** -As TMU plus transformer secondary with earth terminal.

### Input Voltages

24, 50, 110, 240V std. 440, 550V and other voltages optional.

### Operating Frequency

50/60 Hz as standard

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamps

6V, 1.8W tubular filament lamp supplied as standard.

### Lamp Caps

E10 Miniature Edison Screw - MES

### Mounting

Mount to panel using JY or H Series housings and lenses (see Data Sheet 200). TMU's screw onto the housings.

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20.

### Construction

Transformers are encapsulated in mouldings.

(ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip)



TMU Indicator Body and Lamp  
(Standard without lens/housing)

### Tests

Transformer lamps conform to BS EN 60947-5-1. All unit are CE labelled in conformance with the L.V.Directive.

### Weight (Body Only)

TMU - 114g, TEMU - 115g.

## Optional Extras

### Operating Frequency

400 Hz.

### Input Voltages

440, 550V and others available on request.

### Lamps

12, 24, 28V tubular filament lamp.

LED4, 4 X LED cluster lamp

- Amber, Green, Red, Blue or White.

LED7, 7 X LED cluster lamp

- Amber, Green, Red, Blue or White.

LEDM1or LEDM1F (Flashing) lamp

- Amber, Green, Red, Blue or White

### Lamp Caps

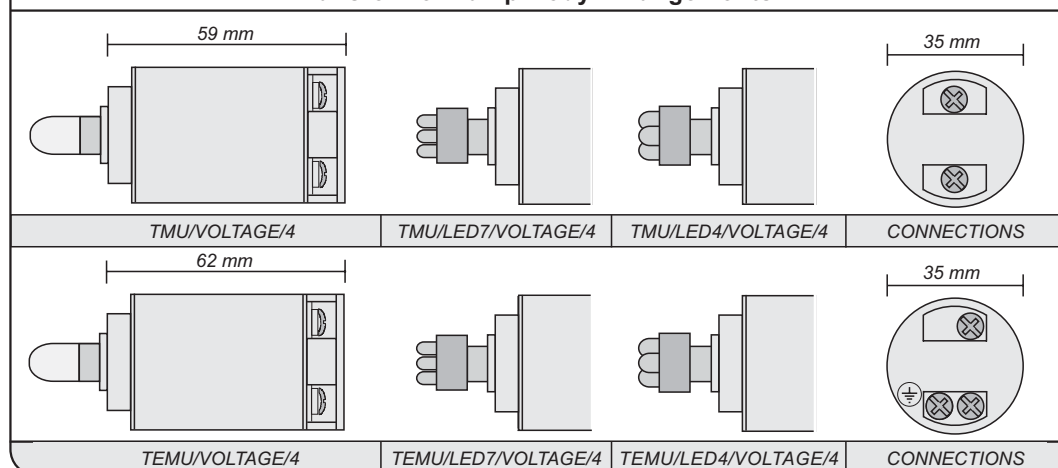
BA9s Miniature Bayonet Cap - MBC

### Environmental Protection to IP65

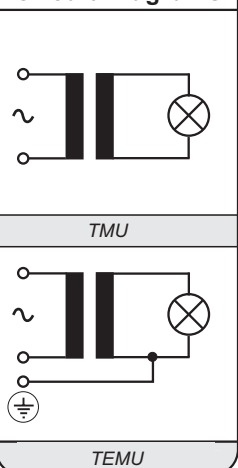
Funnel or Turret Shrouds for terminals (see Data Sheet 214).

Additional seals may be necessary for housings and lenses (see Data Sheet 200).

## Transformer Lamp Body Arrangements



## Circuit Diagrams





## How to derive the correct Product Code

### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 200)	/	Body / Lamp / Input / Lamp / Cap / 4 Type Volts Volts Type	Lens Colour (if applicable)
--	---	---	--------------------------------

<b>B O D Y</b>	Standard Transformer Lamp Body	TMU
	Standard Transformer Lamp Body with Earthed Secondary	TEMU

L A M P	Standard Filament Lamp 6 V 1.8W (See LAMP VOLTAGES for options)		BLANK
	LED 7 Cluster 4.5 V AC	RED	LED7R
		AMBER	LED7A
		GREEN	LED7G
		BLUE	LED7B
		WHITE	LED7W
	LED4 Cluster 4.5 V AC	RED	LED4R
		AMBER	LED4A
		GREEN	LED4G
		BLUE	LED4B
		WHITE	LED4W
	LEDM1 4.5 V AC single led lamp	RED	LEDM1R
		AMBER	LEDM1A
		GREEN	LEDM1G
		BLUE	LEDM1B
		WHITE	LEDM1W
	LEDM1F 4.5 V AC single led flashing lamp	RED	LEDM1FR
		AMBER	LEDM1FA
		GREEN	LEDM1FG
		BLUE	LEDM1FB
WHITE		LEDM1FW	

<b>INPUT VOLTAGES</b>	Standard Voltages available	24 V	24
		50 V	50
		110 V	110
		240 V	240
	Optional Voltages (Others on application)	440 V	440
		550 V	550

<b>LAMP VOLTAGES</b>	Standard	6 V	BLANK
	Non-Standard (See Lamp Data Sheet 201 for further non-standard voltages available).	12 V	12
		24 V	24
		28 V	28

<b>LAMP CAPS</b>	Standard Mini-Screw - MES	BLANK
	Optional Mini-Bayonet - MBC	MBC

<b>TERMINATIONS</b>	Standard 3.5mm captive cable clamp with cover (No Alternatives)	4
---------------------	--	---

<b>OTHER OPTIONS</b>	400 Hz Operation	Specify after Code
	IP65 Protection - Funnel or Turret Shrouds protect Body Terminals	Specify after Code (see Data Sheet 211)

#### Example 1 Product Code:- TMU/LED7R/240/MBC/4

A Standard TMU lamp body,  
4.5v MBC red LED 7 lamp  
cluster and standard screw  
terminals.  
Input: 240Vac, 50/60 Hz.

#### Example 2 Product Code:- FHA/TEMU/110/24/4 Blue

A Transformer Indicator  
lamp with earthed  
secondary, 24V MES  
capped filament bulb  
and standard screw  
terminals mounted on  
an FH housing with a blue  
FA lens.  
Input: 110Vac, 50/60 Hz.



Multi-Lamp Test Indicators enable groups of indicator lamps to be tested from a single pushbutton switch without interrupting normal operation.

## Tranilamp MTMU's

- **increase life expectancy of lamps**

Running the lamp at below rated voltage increases the typical running life of a filament lamp from 4000 hours to beyond 16,000 hours. The life of Tranilamp LED clusters is in excess of 100,000 hours.

- **increase safety**

Isolates the Operating Line when in Test Mode. Lamp voltages are run at very low safe values.

- **increase flexibility**

Can use with Tranilamp's extensive range of:  
 Filament Lamps  
 LED cluster lamps  
 Panel housings and lenses  
 Pushbutton switches

## Standard Specification

### Type

**MTMU** -Standard Multi-Test Transformer Indicator Body.

### Input Voltages

24, 110, 240V. AC supply only.

### Operating Frequency

50/60 Hz as standard.

### Ratings

Nominal current rating of standard MTMU's in Test Mode:

Input Voltage	24 V	110 V	240 V
Current Rating	160 mA	40 mA	30 mA

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamps

6V, 1.8W tubular filament lamp supplied as standard.

### Lamp Caps

E10 Miniature Edison Screw - MES

### Mounting

Mount to panel using JY or H Series housings and lenses (see Data Sheet 200). MTMU's screw onto housings.

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20.

### Construction

Transformers are encapsulated in mouldings. (ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip)

### Tests

MTMU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

### Weight (Body Only)

141 g

## Optional Extras

**Input Voltages** - Optional Voltages considered on application.

**Lamps** - 24, 28V tubular filament lamps. (Others available).

- LED4, 4 X LED cluster lamp in Amber, Green, Red, Blue, White.

- LED7, 7 X LED cluster lamp in Amber, Green, Red, Blue, White.

- LEDM1 or LEDM1F (Flashing) single led lamp in Amber, Green, Red, Blue or White.

**Lamp Caps** - BA9s Miniature Bayonet Cap - MBC

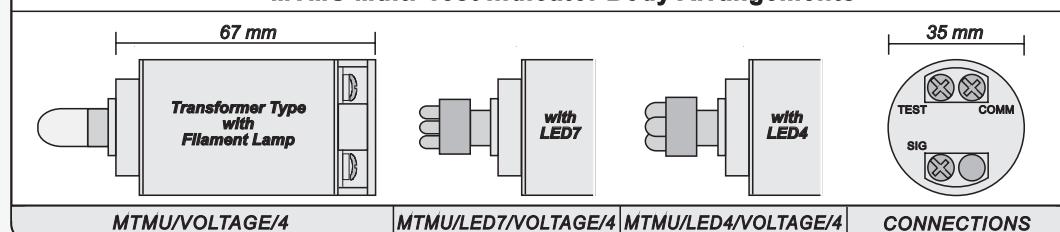
**Environmental Protection to IP65** - Funnel or Turret Shrouds for terminals (see Data Sheet 214).



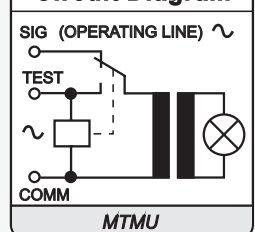
MTMU Indicator Body and Lamp  
(Standard without lens/housing)

203

## MTMU Multi-Test Indicator Body Arrangements



## Circuit Diagram

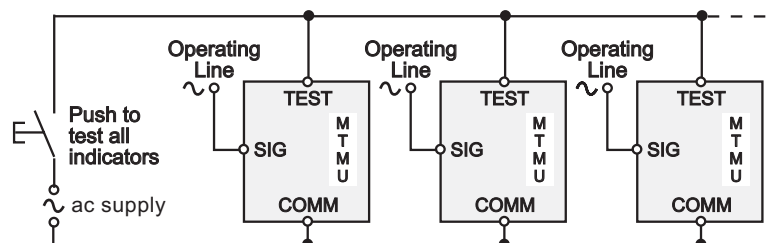


## MTMU Multi-Test Circuit Connection

MTMU's incorporate a single pole changeover relay to enable many units to be tested from one Test Pushbutton without interrupting normal operation. The Control Circuit is entirely isolated from the Indicator when the Test Pushbutton is pressed, thus eliminating any feedback.

The Control Circuit must be 50/60 Hz AC.

**NOTE:** If a 3 phase supply is used, the Test Circuit must be on the **same phase** as the Control Circuit.



# MTMU

## Multi-Lamp Test Indicator Lamps



Product Data Sheet 203/2 Issue 2

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing (see Product Data Sheet 200)	/	Body / Lamp / Input / Lamp / Cap / 4 Type Volts Volts Type	Lens Colour (if applicable)
--	---	---	--------------------------------

<b>B O D Y</b>	Standard Transformer Multi-Test Indicator Lamp Body	MTMU
----------------------------	---	------

<b>L A M P</b>	Standard Filament Lamp 6 V 1.8W (See LAMP VOLTAGES for options)		BLANK
	LED 7 Cluster 4.5 V AC	RED	LED7R
		AMBER	LED7A
		GREEN	LED7G
		BLUE	LED7B
		WHITE	LED7W
	LED4 Cluster 4.5 V AC	RED	LED4R
		AMBER	LED4A
		GREEN	LED4G
		BLUE	LED4B
		WHITE	LED4W
	LEDM1 4.5 V AC single led lamp	RED	LEDM1R
		AMBER	LEDM1A
		GREEN	LEDM1G
		BLUE	LEDM1B
		WHITE	LEDM1W
	LEDM1F 4.5 V AC single led flashing lamp	RED	LEDM1FR
		AMBER	LEDM1FA
		GREEN	LEDM1FG
		BLUE	LEDM1FB
		WHITE	LEDM1FW

INPUT VOLTAGES	Standard Voltages available (Others on Application)	24 V	24
		110 V	110
		240 V	240

LAMP VOLTAGES	Standard	6 V	BLANK
	Non-Standard (See Data Sheet 201 for further non-standard voltages available)	24 V	24
		28 V	28

LAMP CAPS	Standard Mini-Screw - MES	BLANK
	Optional Mini-Bayonet - MBC	MBC

TERMINATIONS	Standard 3.5mm captive cable clamp with cover (No Alternatives)	4
--------------	--	---

OTHER OPTIONS	IP65 Protection - Funnel or Turret Shrouds protect Body Terminals	Specify after Code (see Data Sheet 214)
------------------	--	--

**Example 1**  
**Product Code:-**  
**MTMU/LED7R/240/MBC/4**  
A Standard MTMU Multi-Test Indicator Lamp body, 4.5V MBC red LED 7 lamp cluster and standard screw terminals.  
Input: 240V, 50/60 Hz.

**Example 2**  
**Product Code:-**  
**MHA/MTMU/110/24/4 Blue**

A Multi-Test Transformer Indicator lamp with 24V MES capped filament bulb and standard screw terminals mounted on an MH housing with a blue MA lens.  
Input: 110V, 50/60 Hz.

Tranilamp manufacture an extensive range of Panel Products including:  
a Diode Low Voltage Multi-Test Indicator Lamp to operate on DC. Ask for Product Data Sheet 204

Multi-Lamp Test Indicators enable groups of indicator lamps to be tested from a single pushbutton switch without interrupting normal operation.

## Tranlamp DTMU's

- **offer an economic solution**

Use of a simple diode blocking technique makes this multi-test indicator particularly suitable for dc

- **increase flexibility**

Can use with Tranlamp's extensive range of:  
Filament Lamps  
LED cluster lamps  
Panel housings and lenses  
Pushbutton switches

## Standard Specification

### Type

DTMU - Standard Multi-Test Low Voltage Indicator Lamp Body.

### Input Voltages

6, 12, 24, 28, 50 or 60 V DC supplies.

AC voltages may be used but with reduced lamp brightness.

### Test Mode Current Ratings

As Operating Mode i.e. Lamp rating.

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamps

**Only supplied as Options. For LED's only DC applicable.**

### Lamp Caps

E10 Miniature Edison Screw - MES

### Mounting

Mount to panel using JY or H Series housings and lenses (see Data Sheet 200). DTMU's screw onto housings.

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20

### Construction

ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip.

### Tests

DTMU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

### Weight (Body Only)

29 g



DTMU Indicator Body and Lamp  
(Lens/Housings/Lamps are Optional)

## Optional Extras

### Lamps

Filament Lamps up to 60 V

LED4 - 4 x LED cluster lamp in Amber, Green, Red, Blue or White. **Must use DC** - no 4.5V for Blue or White

LED7 - 7 x LED cluster lamp in Amber, Green, Red, Blue or White. **Must use DC** - no 4.5V for Blue or White.

LEDM1 or LEDM1F (Flashing lamp) single led in Amber, Green, Red, Blue or White.

See Data Sheet 201 for a full list of lamps available.

### Lamp Caps

BA9s Miniature Bayonet Cap - MBC

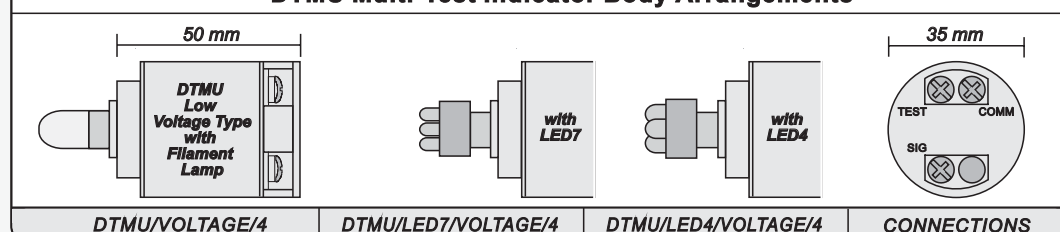
### Terminal Protection

Turret or Funnel Shrouds are available to protect terminals to IP65 (see Data Sheet 214).

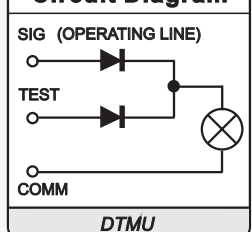
Additional seals may be necessary for housings and lenses (see Data Sheet 200).

**To find the correct Product Code for ordering, please turn to the reverse side.**

## DTMU Multi-Test Indicator Body Arrangements



## Circuit Diagram



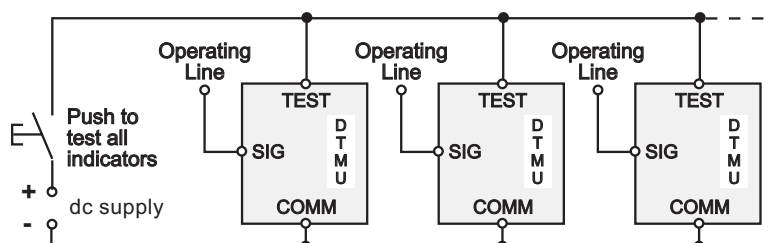
## DTMU Multi-Test Circuit Connection

DTMU's incorporate blocking diodes to enable a group of units to be tested from one Test Pushbutton without interrupting normal operation.

The Control Circuit will usually be DC, but AC can be used with reduced brightness.

Please advise us if battery backup services are fitted to the supply.

**LED cluster lamps must always be DC type.**



# DTMU

## Multi-Lamp Test Indicator Lamps



Product Data Sheet 204/2 Issue 2

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

##### Lens Housing

(see Product Data Sheet 200)

Body / Lamp / Input / Cap / 4  
Type Type Volts Type

##### Lens Colour

(if applicable)

BODY	Standard Low Voltage Multi-Test Indicator Lamp Body	DTMU
------	---	------

**Lamps are supplied for this product only as an optional extra.**  
If required Lamp Voltage is specified as Input Voltage.  
See data sheet 201 for full spec of lamps.

Filament Lamp  
Voltage options: 6,12, 24, 28, 50, 60 V

BLANK

L A M P	LED 7 Cluster 4.5VDC or 24 V DC  NOTE: BLUE and WHITE not available at 4.5VDC	RED	LED7R
		AMBER	LED7A
		GREEN	LED7G
		BLUE	LED7B
		WHITE	LED7W
	LED4 Cluster 4.5VDC or 24 V DC  NOTE: BLUE and WHITE not available at 4.5VDC	RED	LED4R
		AMBER	LED4A
		GREEN	LED4G
		BLUE	LED4B
		WHITE	LED4W
	LEDM1 4.5 V AC single led lamp	RED	LEDM1R
		AMBER	LEDM1A
		GREEN	LEDM1G
		BLUE	LEDM1B
		WHITE	LEDM1W
	LEDM1F 4.5 V AC single led flashing lamp	RED	LEDM1FR
		AMBER	LEDM1FA
		GREEN	LEDM1FG
		BLUE	LEDM1FB
		WHITE	LEDM1FW

**Example 1**  
Product Code:-  
DTMU/LED7A/24/MBC/4

is a Standard DTMU Multi-Test Indicator Lamp body, amber LED 7 lamp cluster with MBC cap and standard screw terminals.  
Input: 24V DC.

**Example 2**  
Product Code:-  
FHA/DTMU/MES/4 Red

is a Standard DTMU Multi-Test Indicator lamp with no lamp supplied, but fitted with MES lamp holder and

INPUT VOLTAGES (Identical to Lamp Voltage)	No Lamp fitted		BLANK
	Filament Lamp suitable Voltages (DC Supply preferred. If AC Supply used lamp operates at reduced brightness)	6 V	6
		12 V	12
		24 V	24
		28 V	28
		50 V	50
		60 V	60
	LED7 or LED4 Clusters (DC) Not 4.5VDC for blue and white	4.5 V DC	4.5
		24 V DC	24

LAMP CAPS	Standard Mini-Screw - MES (with lamp fitted)	BLANK
	Standard Mini-Screw - MES (no lamp fitted)	MES
	Optional Mini-Bayonet - MBC	MBC

TERMINATIONS	Standard 3.5mm captive cable clamp with cover. (No Alternatives)	4
--------------	--	---

OTHER OPTIONS	IP65 Protection - Funnel or Turret Shrouds protect Body Terminals	Specify after Code (see Data Sheet 214)
---------------	---	---

Direct Voltage Indicators enable indicator lamps to be connected directly to the Supply Voltage.

## Tranilamp LMU's

- **offer an economic solution**

The low cost way to accommodate most control circuit supplies, both AC and DC.

- **increase flexibility**

Can use with Tranilamp's extensive range of:  
Filament Lamps  
LED cluster lamps  
Neon lamps  
Panel housings and lenses

## Standard Specification

### Type

LMU - Standard Direct Indicator Lamp Body.

### Input Voltages

Same as and determined by the lamp used.  
Suitable for AC or DC supplies.

Maximum Voltage: 240 Vac - (neons only)

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Lamps

**Only supplied as Optional Extra.**

Select from the Optional Extra list opposite or from the Lamp List Product Data Sheet 201.

**Note: Lamps must not exceed 2W when used with polystyrene lenses.**

### Lamp Caps

E10 Miniature Edison Screw - MES

### Mounting

Mount to panel using JY or H Series housings and lenses (see Data Sheet 200). LMU's screw onto housings.

### Terminations

M3.5 cable clamps with fixed terminal covers to IP20.

Solder tag terminals are available using Tranilamp's Low Voltage LMU/MES/2 described in Product Data Sheet 209.

### Construction

Body constructed of ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip.

### Tests

LMU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

### Weight (Body Only)

LMU - 26 g.



LMU Indicator Body and Lamp  
(Lens/Housings/Lamps are Optional)

## Optional Extras

### Lamps

Filament Lamps 6, 12, 24, 50, 60 or 130 V AC or DC.

LED4 - 4 x LED cluster lamp in Amber, Green, Red, Blue or White.

LED7 - 7 x LED cluster lamp in Amber, Green, Red, Blue or White.

LEDM1 or LEDM1F (Flashing) lamp in Amber, Green, Red, Blue or White.

(LED's available at 4.5V AC, 24 V AC, 4.5V DC (except Blue and White), 24V DC and 110 V AC).

Neon's and Fluorescent's in orange, green and blue at 110V AC and 240V AC.

See Product Data Sheet 201 for a full list of lamps available.

### Lamp Caps

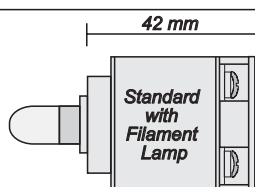
BA9s Miniature Bayonet Cap - MBC

### Terminal Protection

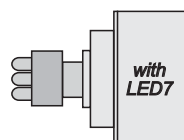
Turret or Funnel Shrouds are available to protect terminals to IP65 (see Data Sheet 214).

**To find the correct Product Code for ordering, please turn to the reverse side.**

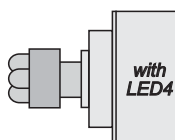
## LMU Direct Voltage Lamp Body Arrangements



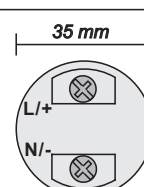
LMU/VOLTAGE/4



LMU/LED7/VOLTAGE/4

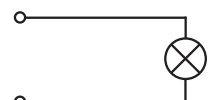


LMU/LED4/VOLTAGE/4



CONNECTIONS

## Circuit Diagrams



LMU



## How to derive the correct Product Code

### Indicator Body Lamp Product Code

**Lens Housing**  
(see Product Data Sheet 200)

**Body Type / Lamp Type / Input Volts / Cap Type / 4**

**Lens Colour**  
(if applicable)

BODY	Standard Direct Voltage Indicator Lamp Body	LMU
------	---	-----

LAMP	<b>Lamps are supplied for this product only as an optional extra.</b> If lamp required, Voltage is specified as Input Voltage. AC or DC may be used.	
	Filament 6, 12, 24, 28, 50, 60, 130 V	BLANK
	LED 7 Cluster 4.5, 24 V AC or DC or 110 V AC <b>No BLUE or WHITE at 4.5V DC</b>	RED LED7R AMBER LED7A GREEN LED7G BLUE LED7B WHITE LED7W
	LED 4 Cluster 4.5, 24 V AC or DC or 110 V AC <b>No BLUE or WHITE at 4.5V DC</b>	RED LED4R AMBER LED4A GREEN LED4G BLUE LED4B WHITE LED4W
	LEDM1 single led lamp 4.5V AC, 24V AC or DC, 110V AC	RED LEDM1R AMBER LEDM1A GREEN LEDM1G BLUE LEDM1B WHITE LEDM1W
	LEDM1F single led flashing lamp 4.5 V AC only	RED LEDM1FR AMBER LEDM1FA GREEN LEDM1FG BLUE LEDM1FB WHITE LEDM1FW
	Neon 110 V AC, 240 V AC or DC	NEON NB2R
	Fluorescent Lamp 110 V AC, 240 V AC or DC	GREEN NG2R BLUE NW2R

INPUT VOLTAGES (identical to lamp voltage)	No Lamp fitted	BLANK
	Filament Lamp suitable AC or DC	6 V 6
		12 V 12
		24 V 24
		28 V 28
		50 V 50
		60 V 60
		130 V 130
	LED7 or LED4 Clusters <b>Note: BLUE &amp; WHITE not available at 4.5V DC</b>	4.5 V AC 4.5AC
		24 V AC 24AC
		110 V AC 110
		4.5 V DC 4.5DC
	Neon and Fluorescent Lamps suitable for AC or DC	24 V DC 24DC
		110 110
		240 240

LAMP CAPS	Standard Mini-Screw - MES (with lamp fitted)	BLANK
	Standard Mini-Screw - MES (no lamp fitted)	MES
	Optional Mini-Bayonet - MBC	MBC

TERMINATIONS	Standard 3.5mm captive cable clamp with cover. (Solder tag terminals available on Low Voltage Body only See Product Data Sheet 209)	4
--------------	---	---

OTHER OPTIONS	IP65 Protection - Funnel or Turret Shrouds protect Body Terminals	Specify after Code (see Data Sheet 214)
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For a full list and description of lamps available see Product Data Sheet 201

#### Example 1 Product Code:- LMU/LED4A/24AC/MBC/4

is a Standard LMU Direct Voltage Indicator Lamp body, amber LED 4 lamp cluster with MBC cap and standard screw terminals. Input: 24V AC.

#### Example 2 Product Code:- MHA/LMU/MES/4 White

is a Standard Direct Voltage LMU Indicator lamp body with no lamp supplied, but fitted with MES lamp holder and standard screw terminals mounted on an MH housing with a white MA lens. Input: Unspecified.

'N' Type indicators are bodies with neon/fluorescent lamps covering a range of ac voltages.

## Tranilamp 'N' Types

### ● low loading

Where the total allowable lamp load current is low, the N Type may be the solution.

### ● no half light pickup

In-built blocking resistors eliminate pickup.

## Standard Specification

### Type

**NBMU** - Standard Indicator body with neon lamp (orange).

**NGMU** - Standard Indicator body with fluorescent lamp (green).

**NWMU** - Standard Indicator body with fluorescent lamp (blue).

### Input Voltages

110, 240, 440V AC and other voltages optional

### Operating Frequency

50/60 Hz

### Rating

All current ratings 1.8mA

### Surrounding Air Temperature

Maximum 50 deg C when operating.

### Weights

NBMU, NGMU, NWMU - 28g

### Lamps

NBMU fitted with NB2 neon lamp (orange)

NGMU fitted with NG2 fluorescent lamp (green)

NWMU fitted with NW2 fluorescent lamp (blue)

(see Data Sheet 201 for spare lamp data)

### Lamp Caps

E10 Miniature Edison Screw - MES

### Mounting

Mount to panel using JY or H Series housings and lenses (See Housing Data Sheet 200). 'N' Types screw onto housings.



NBMU/-4 Indicator Body and Neon Lamp (Lens/Housings are optional)

### Terminations

M3.5 cable clamp with fixed terminal covers to IP20.

(Solder tag terminals or flying leads are available using Tranilamp's assembled units (see Data Sheet 210/2)).

### Construction

Body constructed of ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip.

### Tests

All units conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

## Optional Extras

### Lamp Caps

BA9s Miniature Bayonet Cap - MBC

### Terminal Protection

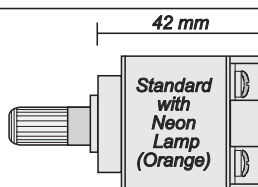
Turret or Funnel Shrouds are available to protect terminals to IP65 (see Data Sheet 214).

Additional seals may be necessary for housings and lenses.

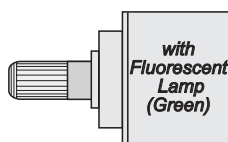
(See Data Sheet 200).

To find the correct Product Code for ordering, please turn to the reverse side.

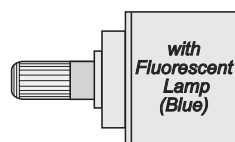
### Neon/Fluorescent Lamp Body Arrangements



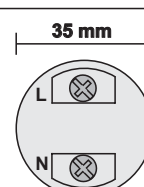
NBMU/VOLTAGE/4



NGMU/VOLTAGE/4

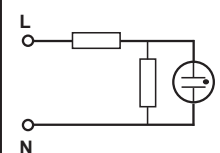


NWMU/VOLTAGE/4



CONNECTIONS

### Circuit Diagrams



NBMU NGMU NWMU

# 'N' Type

## Neon and Fluorescent Indicator Lamps



Product Data Sheet 206/2 Issue 2

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

<b>Lens Housing</b> (see Product Data Sheet 200)		/	<b>Body / Input / Cap / 4</b> <b>Type Volts Type</b>				<b>Lens Colour</b> (If applicable) NBMU Use white, clear, red or amber lens only NGMU Use green lens only NWMU Use blue lens only
B O D Y	Standard Indicator Body with NB2 neon lamp (orange)		NBMU				
	Standard Indicator Body with NG2 fluorescent lamp (green)		NGMU				
	Standard Indicator Body with NW2 fluorescent lamp (blue)		NWMU				
INPUT VOLTAGES		AC Voltage only (Other voltages on application)	100/120 V	110			
			220/240 V	240			
		Optional Voltage	400/440 V	440			
LAMP CAPS		Standard Mini-Screw - MES			BLANK		
		Optional Mini-Bayonet - MBC			MBC		
TERMINATIONS		Standard 3.5mm captive cable clamp with cover. (Solder tag terminals or flying leads are available for 19mm panel holes only as MH housing single assembly units. See Product Data Sheet 210)				4	
OTHER OPTIONS		IP65 Protection - Funnel or Turret Shrouds protect Body Terminals			Specify after Code (see Data Sheet 214)		

#### Example 1

**Product Code:- NWMU/240/MBC/4**

is a Standard Indicator body and fluorescent lamp with an MBC lamp cap and standard screw terminals.

Input: 240V AC.

#### Example 2

**Product Code:- FHA/NBMU/110/4 White**

is a Standard Indicator body and neon lamp with an MES lamp holder and standard screw terminals. The body is mounted on a 22.5mm FH housing with an FA white lens.

Input: 110V AC.

Indicator lamp body units for use with DC Supplies only

### Tranilamp IRMU's & RMU's

- *provide a safe solution*

DC Voltages can be directly connected to the unit. A resistor steps down the voltage to enable standard low voltage lamps to be fitted safely.

- *enable a choice of lamps*

Can use with a selection of Tranilamp's range of:  
Filament lamps  
LED cluster lamps

- *give a wide choice of housings/lenses*

Compatible with Tranilamp's extensive range of housings and lenses.

### Standard Specification

#### Type

IRMU - Standard DC Supply Indicator Lamp Body with internal resistor (2W or less).

RMU - Standard DC Supply Indicator Lamp Body with external resistor (greater than 2W).

Type used is determined by Supply Voltage and Lamp Voltage selected.

#### Input Voltages

24,50,110,130 V DC. Other voltages considered.

Maximum Voltage: 440 V DC

#### Surrounding Air Temperature

Maximum 50 deg C when operating.

#### Lamps

Select from Lamp list on page 2.

Lamp fitted is printed on Part label.

#### Lamp Caps

E10 Miniature Edison Screw - MES

#### Mounting

Mount to panel using JY or H Series housings and lenses (see Data Sheet 200). IRMU's and RMU's screw onto housings.

#### Terminations

M3.5 cable clamps with fixed terminal covers to IP20 on IRMU's.

RMU terminals are uncovered.



IRMU Indicator Body and Lamp



RMU with external resistor

#### Construction

Body constructed of ABS/Polycarbonate grey, flame retardant to UL94V0 non-drip.

#### Tests

IRMU's and RMU's conform to BS EN 60947-5-1.

All units are CE labelled in accordance with the L.V. Directive.

#### Weight (Body Only)

IRMU - 33g

RMU - 37g

### Optional Extras

#### Lamp Caps

BA9s Miniature Bayonet Cap - MBC

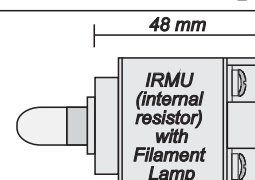
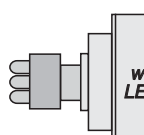
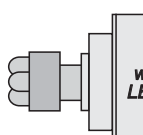
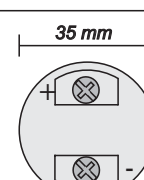
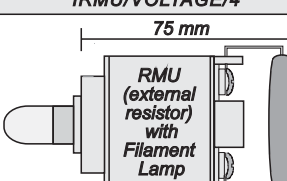
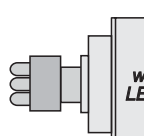
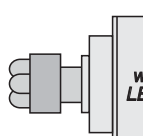
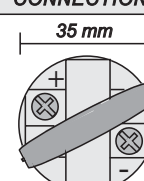
#### Terminal Protection

Turret or Funnel Shrouds are available for IRMU's to protect terminals to IP65 (see Data Sheet 214). Shrouds cannot be fitted to RMU's.

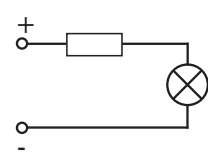
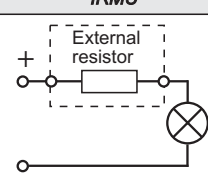
Additional seals may be necessary for housings and lenses. (See Data Sheet 200).

**To find the correct Product Code for ordering, please turn to the reverse side.**

### DC Indicator Lamp Body Arrangements

 <p>48 mm</p> <p>IRMU (internal resistor) with Filament Lamp</p>	 <p>with LED7</p>	 <p>with LED4</p>	 <p>35 mm</p> <p>CONNECTIONS</p>
 <p>75 mm</p> <p>RMU (external resistor) with Filament Lamp</p>	 <p>with LED7</p>	 <p>with LED4</p>	 <p>35 mm</p> <p>CONNECTIONS</p>

### Circuit Diagrams

 <p>IRMU</p>	 <p>RMU</p>
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# IRMU RMU

## Indicator Lamps for DC Supplies



Product Data Sheet 207/2 Issue 2

### How to derive the correct Product Code

#### Indicator Body Lamp Product Code

Lens Housing  
(see Product Data Sheet 200)

Body / Lamp LED / DC / Cap / 4  
Type Type Colour Supply Type

Lens  
Colour  
(if applicable)

BODY TYPE	DC Supply Indicator Lamp Body with built-in resistor. (See note below)	IRMU
	DC Supply Indicator Lamp Body with external resistor. (See note below)	RMU

Many combinations of input and lamp voltages exist for this product. Listed adjacently are some of those most commonly in demand. The IRMU with the internal resistor is limited to a maximum heat dissipation of 2W. Above that the RMU has to be used. **Where possible, the IRMU will always be supplied in preference.**

From the tables, first select the type of lamp needed, then the dc supply (input) voltage. If LEDs are required, a colour will also have to be selected. Please contact our Technical Sales Dept for further help.

LAMP TYPE	DC Supply		
FILAMENT	50V	BLANK	BLANK
	110V		
7 LED CLUSTER	12V	LED7	50
	24V		110
	30V		12
	50V		24
	110V		30
4 LED CLUSTER	12V	LED4	50
	24V		110
	30V		12
	50V		24
	110V		30

LED CLUSTER COLOURS		
Red	R	
Amber	A	
Green	G	
Blue	B	
White	W	

LAMP CAPS	Standard: Miniature Edison Screw (E10) - MES	BLANK
	Optional: Miniature Bayonet (BA9s) - MBC	MBC

TERMINATIONS	IRMU	Standard 3.5mm captive cable clamps with cover.	4
	RMU	Standard 3.5mm captive cable clamps with no cover.	

OTHER OPTIONS	IRMU Only	IP65 Protection - Funnel of Turret Shrouds protect Body Terminals	Specify after Code (See Product Data Sheet 214)
---------------	-----------	---	---

#### Example 1

**Product Code:- IRMU/LED4A/110/MBC/4**  
is a Standard IRMU Indicator Lamp body, amber LED 4 lamp cluster with MBC cap and standard screw terminals.  
Supply: 110VDC.

#### Example 2

**Product Code:- FHA/RMU/50/4 White**  
is a Standard RMU Indicator lamp body with an MES capped filament lamp and standard screw terminals mounted on an FH housing with a white FA lens.  
Supply: 50V DC.



## FLASHING INDICATORS

All lamp body units 35mm diameter.

Flash rate 1 Hz.

Other frequencies on application.

Housings:- see Data Sheet 200.

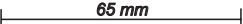
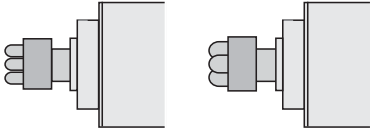
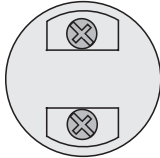

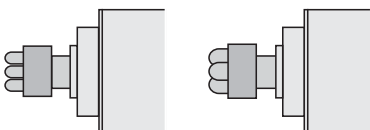
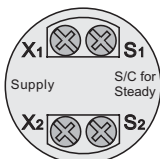
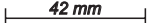
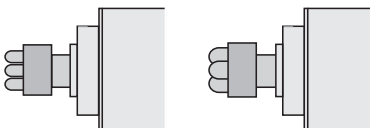
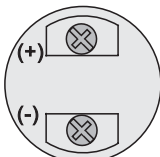

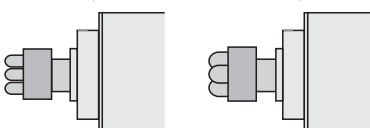
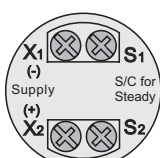
Lamps & LED's:- see Data Sheet 201.

**NOTE: ALL LEDs MUST BE DC**



FACLMU Indicator Body and Lamp  
(Lens/Housings are Optional)

208

					<b>LED CLUSTERS MUST BE DC</b>    	<b>STANDARD INPUT VOLTAGES:</b> 24, 50, 110, 240, 440 V 50 / 60 Hz - <b>FIL. LAMP 6 V 1.8 W</b> - <b>LED 4 or 7</b> <b>RED, GREEN, AMBER</b> <b>USE 4.5V DC</b> <b>BLUE, WHITE</b> <b>USE 12V DC</b>
TRANSFORMER FLASHING	FACTMU/VOLTAGE/4	FACTMU/LED7/VOLTAGE/4	FACTMU/LED4/VOLTAGE/4	BASE CONNECTIONS		
					<b>LED CLUSTERS MUST BE DC</b>    	<b>STANDARD INPUT VOLTAGES:</b> DETAILS AS ABOVE - <b>FOR STEADY LIGHT</b> <b>SHORT OUT</b> <b>MARKED</b> <b>TERMINATIONS</b>
TRANSFORMER FLASH/STEADY	FSACTMU/VOLTAGE/4	FSACTMU/LED7/VOLTAGE/4	FSACTMU/LED4/VOLTAGE/4	BASE CONNECTIONS		
					<b>LED CLUSTERS MUST BE DC</b>    	<b>STANDARD INPUT VOLTAGE 24V</b> - <b>LAMP 24 V 1.2 W</b> - <b>LED 4 or 7 CLUSTER</b> <b>24 VDC</b> <b>RED, GREEN, AMBER, BLUE &amp; WHITE</b> <b>FOR EITHER AC or DC FLASHING INDICATOR</b> - <b>OTHER VOLTAGES ON APPLICATION</b>
LOW VOLTAGE FLASHING 24 V AC or DC	FACLMU/24/4 (AC) FDCLMU/24/4 (DC)	FACLMU/LED7/24/4 FDCLMU/LED7/24/4	FACLMU/LED4/24/4 FDCLMU/LED4/24/4	BASE CONNECTIONS		
					<b>LED CLUSTERS MUST BE DC</b>    	<b>STANDARD INPUT VOLTAGES:</b> DETAILS AS ABOVE - <b>FOR STEADY LIGHT</b> <b>SHORT OUT</b> <b>MARKED</b> <b>TERMINATIONS</b>
LOW VOLTAGE FLASH/STEADY 24 V AC or DC	FSACLMU/24/4 (AC) FSDCLMU/24/4 (DC)	FSACLMU/LED7/24/4 FSDCLMU/LED7/24/4	FSACLMU/LED4/24/4 FSDCLMU/LED4/24/4	BASE CONNECTIONS		

# AK FR Series

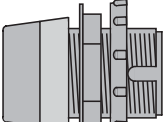
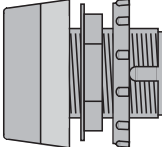

## Audible Alarms Flashing Relays



Product Data Sheet 208/2 Issue 1

### AUDIBLE ALARMS

Typical sound output 88 dB @ 10 cm. Other types with higher output on application.

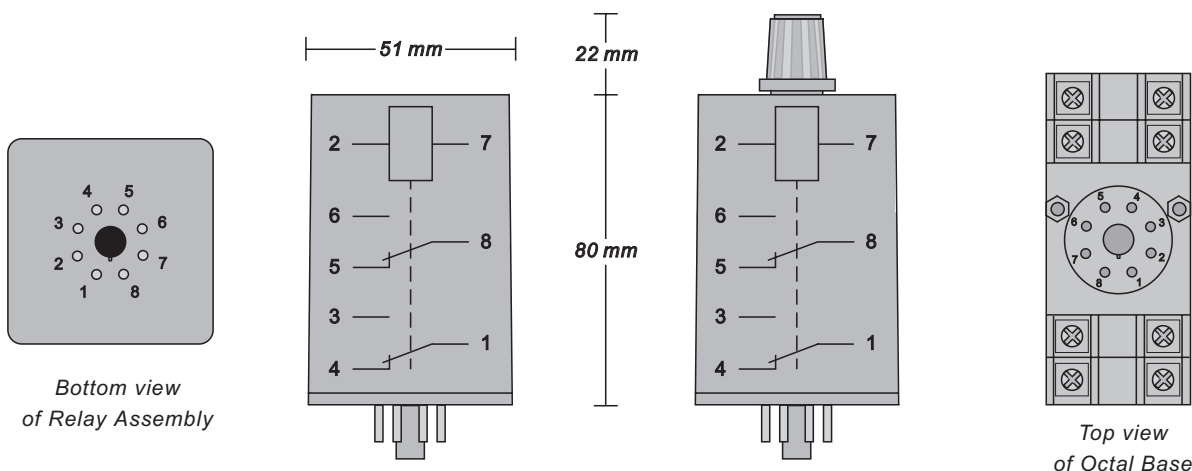
STANDARD COLOUR GREY BLACK OPTIONAL			HOUSING WITH ALARM	PANEL HOLE DIAMETER	6 V AC/DC UNIT FOR USE WITH TRANSFORMER LAMP HOLDER TO 440 VAC or INTERNAL RESISTOR HOLDER TO 110 VDC e.g. AKMJ/TMU240/4 AKFY/IRMU24/4  - MAY BE USED WITH TRANSFORMER FLASHING LAMP HOLDER TO PROVIDE 1 Hz ON / OFF PULSE e.g. AKFJ/FACTMU/110/4 AKDY/FACTMU/24/4
			AKMJ	19 mm	
			AKMY	19 mm	
AKMJ	AKMY	AK	AKFJ	22.5 mm	
			AKFY	22.5 mm	
Voltages up to 110 VDC or 440 VAC			AKDY	30.5 mm	

### FLASHING RELAY / OCTAL BASE

STANDARD INPUT VOLTAGES:- 24, 50, 110, 240 VAC and 24, 50, 110 VDC  
OTHER VOLTAGES ON APPLICATION

CONTACT RATING:- UP TO 5 A at 30 VDC or 240 VAC RESISTIVE

MECHANICAL LIFE:- TYPICAL GREATER THAN 10,000,000 OPERATIONS



Bottom view  
of Relay Assembly

Top view  
of Octal Base

FLASHING RELAY	FR/INPUT VOLTAGE  FLASH RATE 1Hz STANDARD	FRA/INPUT VOLTAGE  FLASH RATE ADJUSTABLE 0.2 TO 1Hz	OCTAL BASE HOLDER PRODUCT CODES Screw terminals:- OBH/4 Solder tags:- OBH/7
-------------------	--	--	---

## POWER FAILURE INDICATOR or ALARM

THIS INDICATOR, WHICH INCORPORATES A RELAY, PROVIDES A WARNING WHEN THE NORMAL CONTROL CIRCUIT POWER SUPPLY FAILS. THE UNIT REQUIRES A PERMANENT LIVE SIGNAL, IF THE CIRCUIT SUPPLY FAILS THE INDICATOR THEN ILLUMINATES OR SOUNDS THE ALARM. THE CONTROL CIRCUIT AT ALL TIMES REMAINS ISOLATED FROM THE PERMANENT LIVE SUPPLY.

209



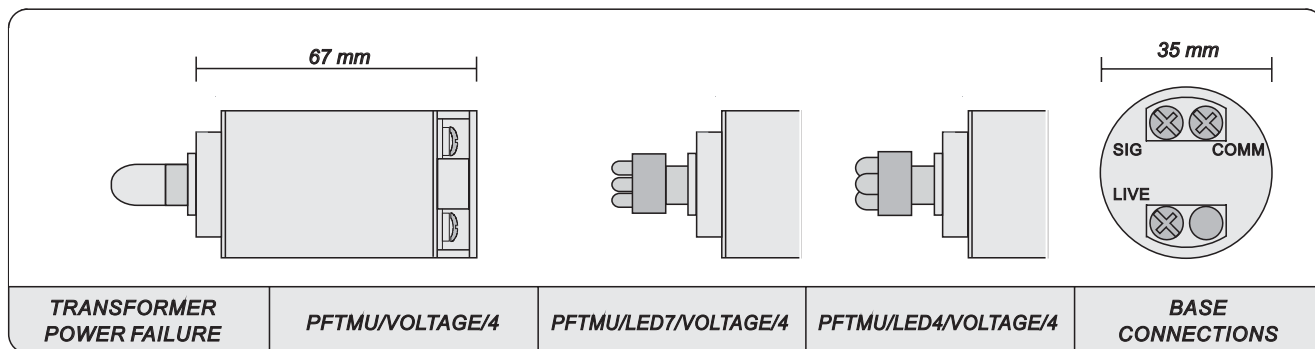
PFTMU Indicator Body and Lamp  
(Standard without lens/housing)

**STANDARD INPUT  
VOLTAGES:**  
24, 110, 240 V  
50 / 60 Hz

-  
**FILAMENT LAMPS 6 V 1.8 W**

-  
**LED 4, LED7 or LEDM1**  
4.5 VAC  
**RED, GREEN, AMBER**  
**BLUE or WHITE**

**AUDIBLE ALARM**  
**SEE DATA SHEET 208**



LMU/MES/2  
LMU/MBC/2

## Direct Low Voltage Indicators



Product Data Sheet 209/2 Issue 2

A low direct voltage, low cost range of lamp holders with changeable lenses and lamps.

### Standard Specification

**Panel Hole Diameters:** 19mm only

**Housings:** Chromed brass or black moulded glass reinforced nylon.

**Bezels:** Chromed or black

**Lamps:** Filament, LEDs, neons and fluorescent can be fitted.  
Lamps are changed from the front.

**Lens:** Screw on, domed or flat

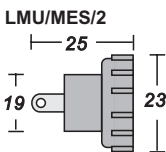
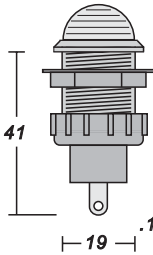
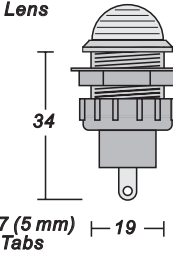


### Product Code Make-up Body/Lamp/Terminals/Colour

Examples:-

1. MHCMA/LMU/LED7R 24AC MES/2/R
2. LMU/MES/2
3. MHA/LMU/24V 1.2W MBC/2/W



MHA/LMU/MES/2

				Body	Lamp	Terminals	Colour				
Panel Hole Diameter - 19mm											
Body	Domed MA Lens	Chrome Plated Brass		MHA/LMU							
		Black Moulded		MHMA/LMU							
		Moulded with Chrome Bezel		MHCMA/LMU							
	Flat MC Lens	Chrome Plated Brass		MHC/LMU							
		Black Moulded		MHMC/LMU							
		Moulded with Chrome Bezel		MHCMC/LMU							
	Body Only		LMU								
Lamp	Lamps only supplied as extras. Select any type from Data Sheet 201/1 and enter its Product Code Maximum Volts - 150V AC or DC.				Insert the Product Code of the lamp exactly as given on Data sheet 201/1						
	If no lamp required specify Cap type.		MES		MES						
	Optional	MBC		MBC							
Terminals	Solder Tabs .187 (5mm)					2					
Lens Colour Use any colour lens with filament lamps.  LED's, neon's, and fluorescent lamps have limited choice of lenses. Check Data Sheet 201/1.		Amber					A				
		Green					G				
		Red					R				
		White					W				
		Clear					C				
		Blue					B				
Options		Dimensions mm									
		Weights		g							
		MHA/LMU/MES/2		21							
		MHMA/LMU/MES/2		10							
		MHCMA/LMU/MES/2		11							
		MHC/LMU/MES/2		21							
MHMC/LMU/MES/2		10									
MHCMC/LMU/MES/2		11									
LMU/MES/2		4									
MBC versions same											
											
						LMU/MES/2 with MHC, MHMC or MHCMC Housing/Lenses		As LMU/MES/2 with MHA MHMA or MHCMA resp., but with MC lens instead of MA			
								MC Lens			





# 6-19mm Lamps

## Miscellaneous Single Unit Indicator Lamps



Product Data Sheet 210/2 Issue 2

A choice of assembled single lamp neon, fluorescent, filament and LED indicators in various styles.



NSMS6



NSMS10



NSHS



MHA/NBMU



MHC/NBMU

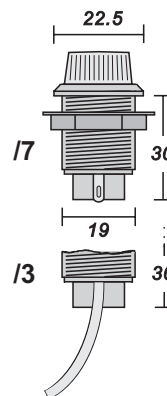
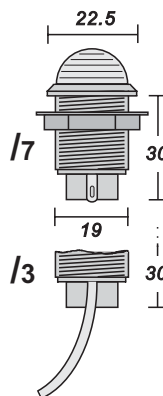
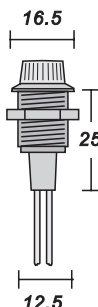
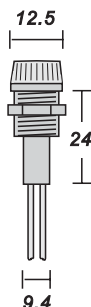
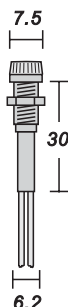
Product Code Make-up <div>Body / Voltage / Terminals / Colour</div>			6.4 ( 0.25" )				10			12.7 ( 0.5" )		19 ( 0.75" )					Panel Hole Diameter mm			
		Body Code ➔	NSMS6	NGSMS6	LSMS6	LEDSMS6	NSMS10	NGSMS10	LSMS10	NSHS	NGSHS	MHA/NBMU	MHA/NGMU	MHA/NWMU	MHC/NBMU	MHC/NGMU	MHC/NWMU	Voltage, Terminals & Colour Codes ⬇	General Comments	
Lamp Type	High Brightness Neon	✓				✓			✓		✓			✓						All units are internally fitted with resistor/s to match standard voltages.
	Green Fluorescent		✓				✓			✓		✓			✓			Lamps in these units cannot be changed.		
	Blue Fluorescent												✓			✓		Blue and green fluorescent lamps must use same colour lenses.		
	Filament			✓				✓									✓			
	LED				✓															
Supply Volts	28V AC or DC			✓				✓										28	Lead Colours:	
	110V AC Only	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		110	Brown = 28V, Blue = 110V	
	240V AC or DC	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		240	Brown/Blue = 240V	
	440V AC or DC								✓	✓	✓	✓	✓	✓	✓	✓		440	Brown/Red = 440V	
	up to 24V DC				✓													*	* 6, 12, 24Vdc standard Product Code: 6,12 or 24	
Terminals	Flying Leads		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		3	Approx. 220mm long	
	Solder Tabs										✓	✓	✓	✓	✓	✓		7	2.8mm (0.110") male tabs	
Lens Colour	Amber	✓		✓	✓	✓		✓	✓		✓			✓				A	All bezels chrome plated brass.	
	Green		✓	✓	✓		✓	✓		✓		✓			✓			G		
	Red	✓		✓	✓	✓		✓	✓		✓			✓				R		
	White	✓		✓		✓		✓	✓		✓			✓				W	Check table to make sure colour you require is available.	
	Clear	✓		✓		✓		✓	✓		✓			✓				C		
	Blue			✓				✓					✓			✓		B		
Lens style	Round Flat	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓		Product Code Examples	1. NSMS10/110/3/C	
	Round Domed										✓	✓	✓						2. MHA/NWMU/110/7	
	Change Lens ?	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y		Note: Colour of lens must be blue	
Body Material	Chromed Brass	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓			3. LEDSMS6/24/3/A	
	Plastic								✓	✓										

### Dimensions mm

#### Weights

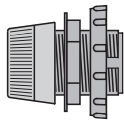
g

--MS6/-/3	4
--MS10/-/3	10
--HS/-/3	5
MHA/N-MU/-/7	21
MHA/N-MU/-/3	23
MHC/N-MU/-/7	21
MHC/N-MU/-/3	23

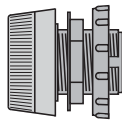


## HOUSING ASSEMBLIES WITH FLAT CLEAR LENS

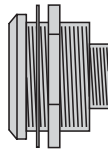
Interchangeable housings for LED lamp body units shown below. Housings meet IP64 as standard  
IP65 with sealing washers available for MJD, FJD, MYD, FYD, DYD, LHBD & FHLD  
All bezels chrome plated, black epoxy coating optional



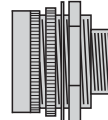
MJD 19 mm  
FJD 22.5 mm



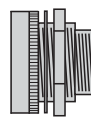
MYD 19 mm  
FYD 22.5 mm  
DYD 30.5 mm



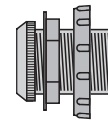
DHD 30.5 mm



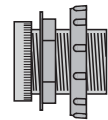
LHBD 26.5 mm



FHLD 22.5 mm



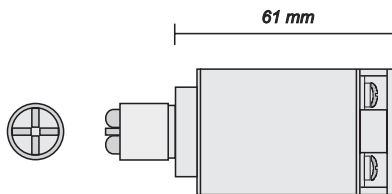
MHAD 19 mm



MHBD 19 mm

## LED MIMIC INDICATORS

All lamp body units 35 mm diameter  
Terminations M3.5 cable clamps with shroud  
All LED's are in the body unit and not removable



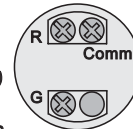
This unit has been designed to give visual open or closed indication of valves or gates and can be used as a separate bicolour unit on mimic panels.

Colours: Red/Green standard.

Any combination of Red, Yellow or Green is optional.

Two T/440/24/4 transformers (See Data Sheet 214/2) can be used with a 24 VAC unit for 440 VAC supplies.

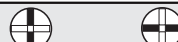
SEMAPHORE UNITS ARE FITTED BY POWER GENERATORS ON MANY MAJOR INSTALLATIONS.



STANDARD INPUT VOLTAGES:  
24, 110, 240 VAC  
24, 110 VDC  
(110 VDC EXTERNAL RESISTORS)  
-  
RED/GREEN STD. COMBINATIONS OF RED, YELLOW, GREEN OPTIONAL  
-  
2 BUILT IN SUPPLIES  
-  
OTHER VOLTAGES ON APPLICATION

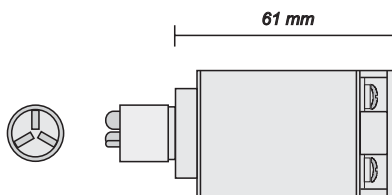
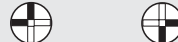
SEMAPHORE  
LED INDICATOR

SEMMU/ AC or DC VOLTAGE/4



BASE  
CONNECTIONS

SEMPMU/ AC or DC VOLTAGE/4



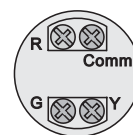
This unit has separate inputs to each LED to allow one, two or three colours to be on at once.

Colours: Red/Yellow/Green standard.

Any combination of Red, Yellow or Green is optional.

For supplies above 24 VAC a 24 VAC LED indicator can be operated using three external T/voltage/24/4 transformer units (see Data Sheet 214/2).

Other voltages on application.



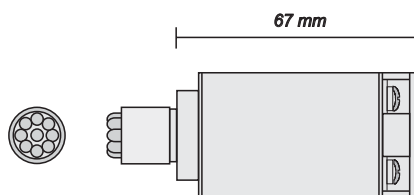
STANDARD INPUT VOLTAGES:  
24 VAC  
24 VDC  
-  
STANDARD RED/YELLOW/GREEN  
-  
ANY COMBINATION RED, YELLOW, GREEN OPTIONAL  
-  
3 BUILT IN SUPPLIES  
-  
OTHER VOLTAGES ON APPLICATION

THREE COLOUR  
LED INDICATOR

LMURGY/ AC or DC VOLTAGE/4



BASE  
CONNECTIONS

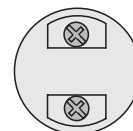


This indicator consists of a cluster of 8 LED's mounted symmetrically around a central one.

The peripheral LED's are lit in sequence. This gives the appearance of a moving light orbiting a fixed central point.

Clockwise rotation standard, anticlockwise available.

The unit can be supplied with an external potentiometer to control the rotational speed of the peripheral LED's.



STANDARD INPUT VOLTAGES:  
24, 110, 240, 440 VAC  
24 VDC  
-  
LED COLOURS RED, YELLOW, GREEN  
-  
TWO COLOUR AVAILABLE  
-  
OTHER VOLTAGES ON APPLICATION

ROTATING  
LED INDICATOR

ROLMU/ AC or DC VOLTAGE/4 - UP TO 30 V



BASE  
CONNECTIONS

ROTMU/ AC VOLTAGE/4 - UP TO 440 VAC

# PB Series

Pushbuttons  
Non - Illuminated



Product Data Sheet 211/2 Issue 1

## PUSH BUTTON SWITCHES Non-illuminated

### Standard Features

- Flush pushbuttons on 19, 22.5 & 26.5mm
- Projecting pushbuttons on 19mm only
- Switch rating: 250 VAC 10 A, contacts silver.
- Button colours; red, yellow, green, black, white & blue.
- Terminations: 6.35mm (0.25") male tabs.
- Fits 19, 22.5 & 26.5mm panel holes.
- Protection to IP54 as standard  
Translucent button / bezel shroud available for PBFHB & PBLHB to meet IP65.

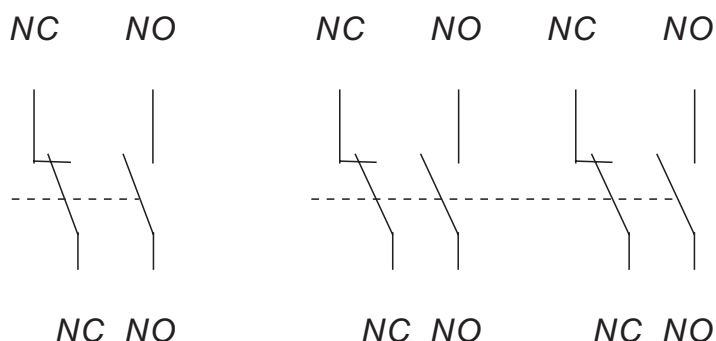


PBMH100/5F



PBFHB100/5

### Switch Configurations

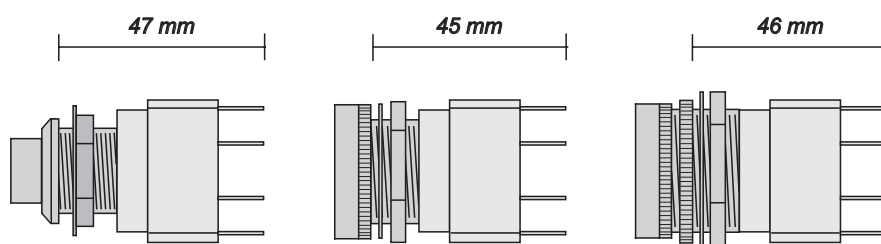


### Configuration Code

100/5

200/5

### Types and full Product Codes



#### Panel Hole Diameter:

#### Pushbutton Position:

2 pole

4 pole

19 mm

PROJECTING

PBMH100/5P

PBMH200/5P

19 mm

FLUSH

PBMH100/5F

PBMH200/5F

22.5 mm

FLUSH

PBFHB100/5

PBFHB200/5


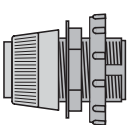

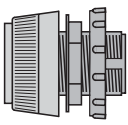

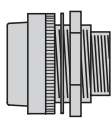
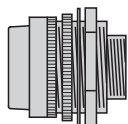
26.5 mm

FLUSH

PBLHB100/5

PBLHB200/5

## Interchangeable housings for Push to Test & Switch Body Units (overleaf) Lens colours; red, amber, green, white, clear & blue

	ACTUATOR (LENS/HOUSING) PRODUCT CODE	ADAPTOR PRODUCT CODE	PANEL HOLE DIAMETER mm	BEZEL DIAMETER mm	LENS OR MAX BUTTON DIAMETER mm	FOR BACK PANEL DEPTH ADD TO BODY DIMENSION
 FLUSH	MJP	-	19	24	22.3	13
	FJP	ADMF	22.5	26	22.3	11
 ADMF						
 FLUSH	MYP	-	19	31.5	30	13
	FYP	-	22.5	31.5	30	13
 ADFD	DYP	ADFD	30.5	33.5	30	11
 PROJECTING	MJPP	-	19	24	22.3	13
	FJPP	ADMF	22.5	26	22.3	11
 ADMF						
 PROJECTING	MYPP	-	19	31.5	30	13
	FYPP	-	22.5	31.5	30	13
 ADFD	DYPP	ADFD	30.5	33.5	30	11
 PROJECTING	MHP	-	19	22.5	14.5	15
<b>WHEN USED WITH FILAMENT BULBS - MAXIMUM 2W</b>						
 PROJECTING	FHBP	-	22.5	28.5	23.5	11
<b>WHEN USED WITH FILAMENT BULBS - MAXIMUM 2W</b>						
 PROJECTING	LHBP	-	26.5	30.5	23.5	12
<b>WHEN USED WITH FILAMENT BULBS - MAXIMUM 2W</b>						

The above housings meet IP54 as standard.  
Translucent lens / bezel shrouds are available for, YP, FHBP & LHBP to meet IP65.  
All bezels brass chrome plated, black epoxy coating optional.

# P Series

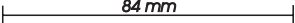
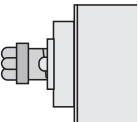
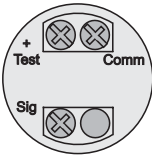
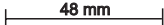
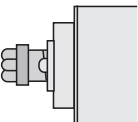
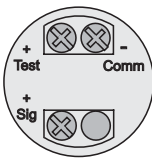
## Push to Test & Switch Bodies



Product Data Sheet 213/2 Issue 1


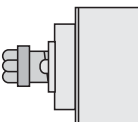
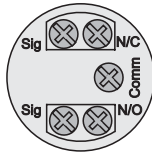

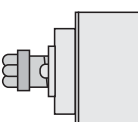
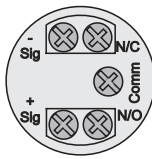

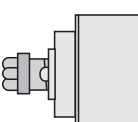
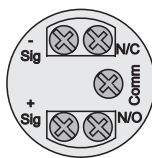
### PUSH TO TEST

See Data Sheet 203 for Multitest , Data Sheet 212 for Push Buttons  
and overleaf for Actuating Housings

					<b>STANDARD INPUT VOLTAGES:</b> 24, 50, 110, 240, 440 V 50 / 60 Hz - FIL. LAMP 6 V 1.8 W - LED M4 ONLY, 4.5 VAC RED, GREEN, AMBER BLUE & WHITE - <b>OTHER VOLTAGES ON APPLICATION</b>
TRANSFORMER SP / CO SWITCH ( PUSH TO TEST )	PTMU/VOLTAGE/4	PTMU/LEDM4/VOLTAGE/4	BASE CONNECTIONS		
					<b>FILAMENT LAMP VOLTAGES (MUST BE LESS THAN 2W):</b> 6, 12, 24, 28, 50, 60V MAX - <b>LEDM4 CLUSTER ONLY</b> 4.5, 12, 24, 110 VAC 4.5, 12, 24 VDC RED, GREEN, AMBER BLUE OR WHITE - NEON, GREEN OR BLUE 110, 240 V SEE DATASHEET 201 LAMP LIST
DIRECT VOLTAGE SP / CO SWITCH ( PUSH TO TEST )	PLMU/VOLTAGE/4	PLMU/LEDM4/VOLTAGE/4	BASE CONNECTIONS		

### SWITCH BODIES - ILLUMINATED

See, Data Sheets 211 and 120 for alternative Push Buttons  
and overleaf for Actuating Housings to fit to the switch bodies below

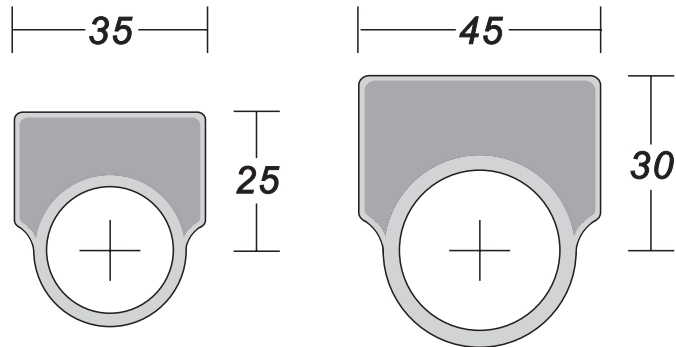
					<b>STANDARD INPUT VOLTAGES:</b> 24, 50, 110, 240, 440 V 50 / 60 Hz - FIL. LAMP 6 V 1.8 W - LEDM4 ONLY, 4.5 VAC RED, GREEN, AMBER BLUE OR WHITE - SEPERATE SP/CO SWITCH RATED 4AMP
TRANSFORMER SP / CO SWITCH ( PUSH TO SWITCH )	PSTMU/VOLTAGE/4	PSTMU/LEDM4/VOLTAGE/4	BASE CONNECTIONS		
					<b>FILAMENT LAMP VOLTAGES (MUST BE LESS THAN 2W):</b> 6, 12, 24, 28, 50, 60V MAX - <b>LEDM4 CLUSTER ONLY</b> 4.5, 12, 24, 110 VAC RED, GREEN, AMBER, BLUE OR WHITE - NEON, GREEN or BLUE 110, 240 V SEE DATA SHEET 201 LAMP LIST - SWITCH RATED 4 AMP
DIRECT VOLTAGE SP / CO SWITCH ( PUSH TO SWITCH )	PSLMU/VOLTAGE/4	PSLMU/LEDM4/VOLTAGE/4	BASE CONNECTIONS		
					110 VDC FILAMENT LAMP 60 V 1.2 W - 50, 110 VDC <b>LED M4 CLUSTER ONLY</b> 24 VDC 20 mA RED, GREEN, AMBER, BLUE OR WHITE - SEPERATE SP/CO SWITCH RATING 440 VAC 4 AMP
INTERNAL RESISTOR SP / CO SWITCH ( PUSH TO SWITCH )	PSRMU/VOLTAGE/4	PSRMU/LEDM4/VOLTAGE/4	BASE CONNECTIONS		



## LEGEND PLATES

*Black Anodised Aluminium - Engraved to order*

**SUITABLE FOR:  
H SERIES INDICATOR LENS,  
& PUSHBUTTONS.**

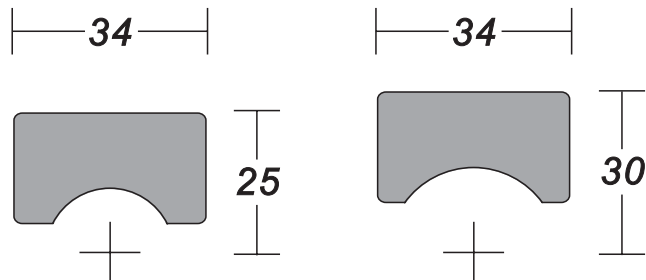


**PRODUCT CODES**

**MHLP - 19 mm  
FHLP - 22.5 mm**

**LHLP - 26.5 mm  
DHLP - 30.5 mm**

**SUITABLE FOR:  
JY SERIES INDICATOR LENS  
& SWITCHES**



**PRODUCT CODES**

**BJLP (ADHESIVE) BYLP**

*Optional:*

*Traffolyte - White/Black/White or Black/White/Black*

## TERMINAL SHROUDS - IP65

*Designed to cover terminals of any 35mm diameter body to IP65 protection except RMU units.*



**FUNNEL SHROUD**



**TURRET SHROUD**

## PANEL HOLE BLANKS

Blanks to plug panel holes of 19mm, 22.5mm, 26.5mm and 30.5mm diameter.  
All blanks are self-clipping into the hole. ( Photographs below show reverse sides.)



## ENCAPSULATED 1.5VA INDICATOR TRANSFORMER



**SUITABLE FOR USE WITH LOW  
VOLTAGE LAMPS UP TO 1.5 VA  
WHERE REMOTE TRANSFORMERS REQUIRED  
or  
WHERE DEPTH OF STANDARD  
TRANSFORMER LAMP IS TOO GREAT.  
FITTED WITH FIXED TERMINAL COVERS**

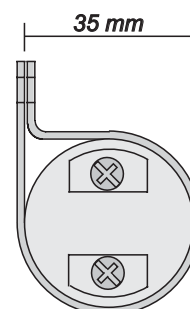
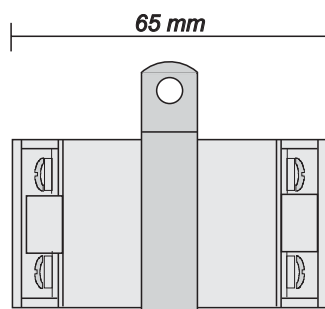
**TRANSFORMER  
ENCAPSULATED 1.5 VA**

**STANDARD INPUT  
VOLTAGES:  
24, 50, 110, 240, 440 V  
50 / 60 Hz**

**OUTPUT 5 VAC**

**OTHER VOLTAGES  
ON APPLICATION**

**'P' CLIP SUPPLIED**



**T/VOLTAGE/4**

**BASE  
CONNECTIONS**

TCX and TC Standard Ranges provide a low cost high quality solution where double wound transformers are required with standard voltage primaries and secondaries. TCX's have one input and one output only; TC's are multi-tapped.

### TCX Range 25VA - 2kVA 50/60 Hz - Untapped



100 VA - 2 kVA



25 VA & 50 VA

Product Code	Input V	Output V
TCX/VA Rating/1	0-415	0-240
TCX/VA Rating/2	0-240	0-110
TCX/VA Rating/3	0-415	0-110
TCX/VA Rating/5	0-415	0-24
TCX/VA Rating/6	0-240	0-24
For fused primary add "F" after Product Code		
* 24v Output not available (Use STK range)		

**Available  
VA  
Ratings**

25
50
100
150
200
250
300
500
750
1k
1.5k *
2k *

### Standard Specification

- Shrouded terminal blocks used up to 3kVA
- Design optimises size and efficiency, whilst giving a small footprint
- Earth screen fitted between primary and secondary windings
- Transformers impregnated with a polyester varnish to reduce vibration and noise from the laminations and windings
- Conform to the general requirements of BSEN61558
- Insulation to BS2757 Class E (IEC 85)
- Maximum operating ambient temperature of 30deg C without derating
- All transformers are CE labelled in accordance with the L.V. Directive

### Optional Extras

- Anti- surge fuses can be fitted on the TCX Range (one on 240V primary, two on 415V primary)
- Steel ventilated floor or wall mounting enclosures can be fitted to IP23, IP54 or IP65 protection. See Data Sheet 408
- DIN rail mounting kit available for transformers up to 100VA

### TC Range 50 VA - 5 kVA 50/60 Hz - Standard multi-taps



Product Code	Input V	Output V
TC/VA Rating/1	0-380-415-440	0-220-240
TC/VA Rating/2	0-220-240	55-0-55
TC/VA Rating/3	0-380-415-440	55-0-55
TC/VA Rating/5	0-380-415-440	0-12 + 0-12
TC/VA Rating/6	0-220-240	0-12 + 0-12
TC/VA Rating/7	0-380-415-440	0-110
* 24v Output not available (Use STK, TUF or TCF ranges)		

**Available  
VA  
Ratings**

50
100
150
200
250
300
500
750
1k
1.5k *
2k *
3k *
5k *

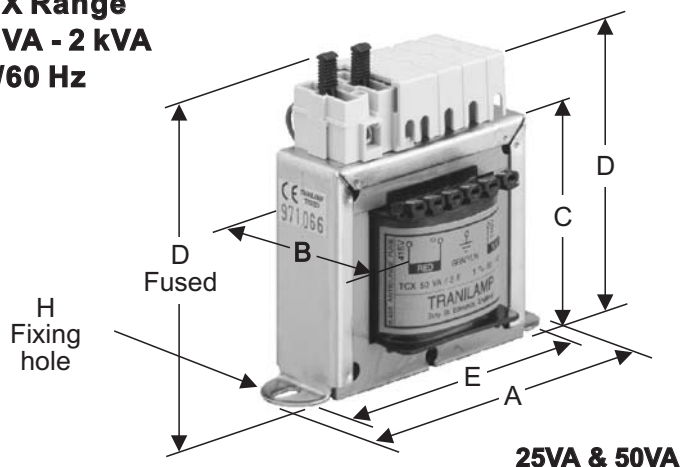
# TCX TC

## Transformer Ranges (25VA - 5kVA)



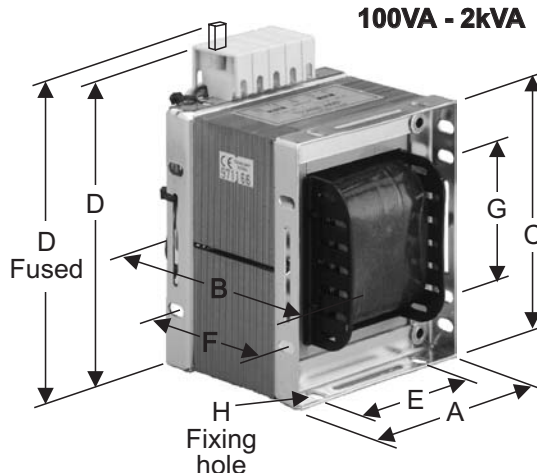
Product Data Sheet 400/2 Issue 2

### TCX Range 25 VA - 2 kVA 50/60 Hz



25VA & 50VA

### 100VA - 2kVA



#### Optional

Primary Anti-surge  
Fuse Ratings

#### Dimensions

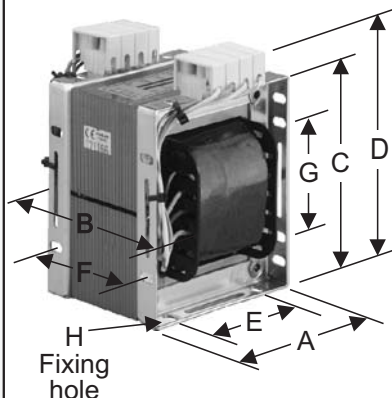
VA Rating	Amps	
	240 V 1 Fuse	415 V 2 Fuses
25	0.40	0.40
50	0.40	0.40
100	0.80	0.50
150	1.25	0.63
200	1.25	1.00
250	2.50	1.00
300	2.50	1.25
500	4.00	2.50
750	5.00	3.15
1k	6.30	4.00
1.5k	10.0	6.30
2k	10.0	8.00

VA Rating	Maximum Dimensions mm					Fixing Dimensions mm				Wt. kg	IP23 Enc. Type*	V Reg %	Inrush VA	
	A	B	C	D	D Fused	E	F	G	H				95%	90%
25	99	50	57	78	87	84	-	-	5X8	0.7	ENV0	12	35	45
50	107	56	66	86	96	93	-	-	5X8	1.0	ENV0	10	70	90
100	83	78	100	119	129	63	53	63	4X7	2.3	ENV1	8	160	220
150	83	90	100	119	129	63	66	63	4X7	3.0	ENV1	9	250	350
200	99	92	118	139	149	64	57	63	5X9	3.5	ENV1	8	400	600
250	99	92	118	139	149	63	57	63	5X9	3.6	ENV1	8	450	675
300	99	105	118	139	149	63	66	63	5X9	4.5	ENV1	7	500	800
500	115	128	137	154	164	89	86	89	6X11	7.3	ENV3	5	800	1.25k
750	115	138	137	164	167	89	95	89	6X11	9.0	ENV3	5	1.5k	2k
1k	140	135	167	194	197	89	88	89	7X13	11.3	ENV3	4	2k	3.5k
1.5k	140	160	167	187	197	89	119	89	7X13	16.1	ENV4	3	3k	5k
2k	180	160	215	242	252	114	110	114	10X18	21.0	ENV5	3	3.5k	6k

\*IP54 or IP65 enclosure sizes given on application

### TC Range 50 VA - 5 kVA 50/60 Hz

#### Dimensions



VA Rating	Max. Dimensions mm				Fixing Dimensions mm				Wt. kg	IP23 Enc. Type*	V Reg %	Inrush VA	
	A	B	C	D	E	F	G	H				95%	90%
50	67	65	80	100	54	40	54	4X8	1.1	ENV0	10	70	90
100	83	76	100	120	63	53	62.5	5X8	2.3	ENV1	8	160	220
150	83	88	100	120	63	65	63	5X8	3.0	ENV1	9	250	350
200	99	92	118	139	63	56	63	5X9	3.5	ENV1	8	400	600
250	99	92	118	139	63	56	63	5X9	3.6	ENV1	8	450	675
300	99	105	118	139	63	69	63	5X9	4.5	ENV1	7	500	800
500	115	128	137	162	89	83	89	6X11	7.3	ENV3	5	800	1.25k
750	115	140	137	162	89	98	89	6X11	9.0	ENV3	5	1.5k	2k
1k	140	135	167	195	89	94	89	7X13	11.3	ENV3	4	2k	3.5k
1.5k	140	160	167	189	89	119	89	7X13	16.1	ENV4	3	3k	5k
2k	180	160	215	242	115	110	115	10X18	21.0	ENV5	3	3.5k	6k
3k	214	198	179	208	115	147	115	10X18	29.9	ENV5	3	5.5k	9k
5k	240	170	248	298	160	112	N/A	11	32	ENV6	3	-	-

\*IP54 or IP65 enclosure sizes given on application

Shrouded Terminal Blocks fitted as standard up to 3 kVA



The STK Range provides a high quality solution where double wound control transformers are required with extra versatile multi-tapped primaries and secondaries. Klippon terminal blocks are standard.

## STK Range 25VA - 2kVA, 1 phase, 50/60 Hz

### Standard Specification

- Klippon terminal blocks used throughout range
- Design optimises efficiency for low regulation
- Earth screen fitted between primary and secondary windings
- Transformers impregnated with a polyester varnish to reduce vibration and noise from the laminations and windings
- Conform to the general requirements of BSEN61558
- Insulation to BS2757 Class E (IEC 85)
- Maximum operating ambient temperature of 30°C without derating
- All transformers are CE labelled in accordance with the L.V. Directive

### Options

- Steel ventilated floor or wall mounting enclosures can be supplied and fitted. See Data Sheet 408
- DIN rail mounting kit available for transformers up to 100VA
- Tropicalisation by a flame retardant enveloping varnish for environments with high humidity

#### Available VA Ratings

25
50
100
150
200
250
300
500
750
1k
1.5k
2k

50 VA

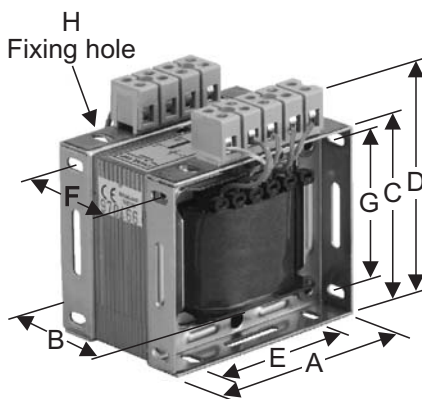


1 KVA



Product Code	Input V	Output V
STK/VA Rating/1	20-0-380-420	10-0-220-240
STK/VA Rating/2	10-0-220-240	55-0-55
STK/VA Rating/3	20-0-380-420	55-0-55
STK/VA Rating/4	0-110-120/0-110-120	0-12/0-12
STK/VA Rating/5	20-0-380-420	0-12/0-12

### Dimensions and Data



VA Rating	Max. Dimensions mm				Fixing Dimensions mm				Wt. kg	IP23 Enc. Type*	V Reg %	Inrush VA	
	A	B	C	D	E	F	G	H				95%	90%
25	70	54	59	75	45	38	45	4X7	0.7	ENV0	12	35	45
50	79	59	67	83	54	40	54	4X8	1.3	ENV0	10	70	90
100	99	78	83	100	64	55	64	5X8	2.4	ENV1	8	160	220
150	99	94	83	100	64	68	64	5X8	3.0	ENV1	8	250	350
200	118	92	99	116	64	55	64	5X9	3.5	ENV2	8	400	600
250	118	105	99	116	64	68	64	5X9	4.5	ENV2	7	500	800
300	137	115	115	130	89	72	89	6X11	6.3	ENV3	6	700	1k
500	137	135	115	130	89	98	89	6X11	8.8	ENV3	4	1k	1.5k
750	167	135	140	168	89	94	89	7X13	12.5	ENV4	4	2k	3.5k
1k	167	160	140	168	89	119	89	7X13	15.0	ENV4	4	2k	3.5k
1.5k	213	160	180	208	115	110	115	10X18	21.4	ENV5	3	3.5k	5k
2k	213	188	180	208	115	135	115	10X18	27.0	ENV5	3	4k	7k

\* IP65 Enclosures sizes specified on application

401



## CUSTOM SINGLE PHASE DOUBLE WOUND

### 10 VA - 4 kVA

A range of control circuit transformers using universal frames and having terminal block connections. Designed to customer requirements, the transformers can be fitted with an earth screen between windings. All transformers have a polyester varnish finish, a tropicalised varnish is optional. They are designed to operate in a maximum ambient temperature of 30deg C without derating.

A full range of steel stove enamelled enclosures is available for all types, see Data Sheet 408.

#### SPECIFICATION

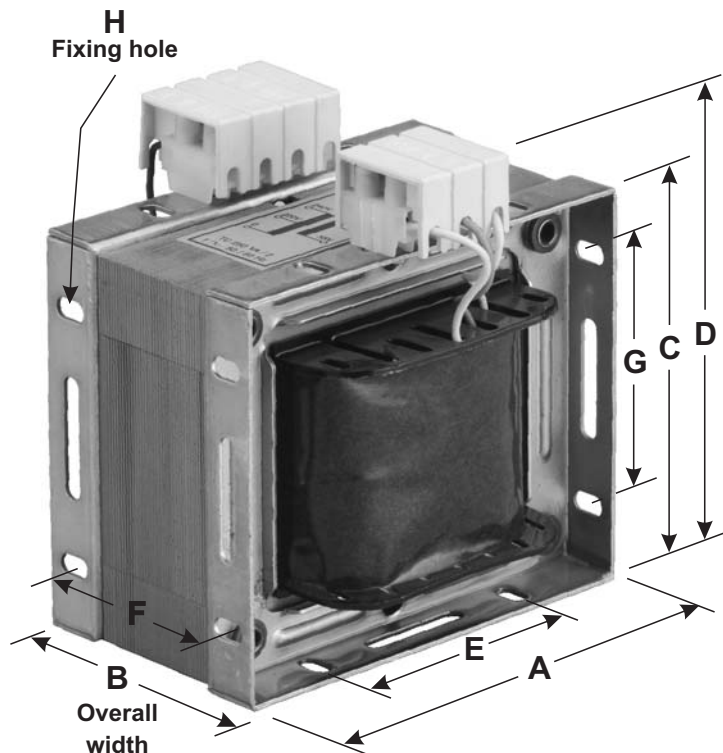
Temp. range: - 10 C to + 50 C

Insulation: To BS 2757 class E

Regulation: 5 - 15% dependent on design

Flash test: 2 kV

Max. voltage: 600 V



#### Dimensions mm

Product Reference	Rating VA	A	B	C	D max	E	F	G	H	Weight kg	Enclosure Reference
TUF 1	10 - 20	70	50	59	79	45	38	45	4 X 7	0.8	ENV 0
TUF 2	21 - 35	79	55	67	87	54	40	54	4 X 8	1.1	ENV 0
TUF 3	36 - 50	79	61	66	87	54	47	54	4 X 8	1.5	ENV 0
TUF 4	51 - 75	89	59	75	95	57	46	57	5 X 8	2.0	ENV 0
TUF 5	76 - 100	99	67	83	103	64	55	64	5 X 8	2.5	ENV 1
TUF 6	101 - 150	99	79	83	103	64	67	64	5 X 8	3.2	ENV 1
TUF 7	151 - 200	118	71	99	119	64	55	64	5 X 9	3.7	ENV 2
TUF 8	201 - 250	118	82	99	119	64	68	64	5 X 9	4.6	ENV 2
TUF 9	251 - 300	118	118	99	119	64	81	64	5 X 9	5.7	ENV 3
TUF 10	301 - 400	137	115	115	135	89	72	89	6 X 11	6.3	ENV 3
TUF 11	401 - 450	118	130	99	119	64	94	64	5 X 9	6.9	ENV 3
TUF 12	451 - 500	137	124	115	135	89	85	89	6 X 11	7.5	ENV 3
TUF 13	501 - 650	137	137	115	135	89	98	89	6 X 11	8.8	ENV 3
TUF 14	651 - 750	167	118	140	160	89	82	89	7 X 11	10.0	ENV 4
TUF 15	751 - 1k	167	133	140	160	89	94	89	7 X 11	12.5	ENV 4
TUF 16	1.1k - 1.5k	167	159	140	162	89	119	89	7 X 11	15.0	ENV 4
TUF 17	1.6k - 2k	213	160	180	202	115	110	115	10 X 19	22.0	ENV 5
TUF 18	2.1k - 2.6k	213	185	180	202	115	135	115	10 X 19	27.0	ENV 5
TUF 19	2.7k - 3.5k	213	190	180	202	115	147	115	10 X 19	33.0	ENV 5
TUF 20	3.6k - 4k	213	222	180	202	115	172	115	10 X 19	38.0	ENV 5

TERMINAL BLOCK FITTED AS STANDARD - STUD TERMINALS OR FLYING LEADS OPTIONAL

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST

# TCF Range

Custom 1 Phase  
Transformers  
(3.6kVA - 65kVA)



Product Data Sheet 402/2 Issue 0

## CUSTOM SINGLE PHASE DOUBLE WOUND

### 3.6 kVA - 65 kVA

A range of core construction transformers having terminal blocks or screw stud connections for higher currents. The transformers incorporate low watt loss cores for a good VA to weight ratio. Fixing is by channel brackets with larger sizes having lifting eyes to ease installation.

Designed to customer requirements, the transformers can be fitted with earth screens between windings. All transformers have a polyester varnish finish, a tropicalised enveloping varnish is optional. They are designed to operate at a maximum ambient temperature of 30 C without derating.

A full range of steel stove enamelled enclosures is available for all types, see Data Sheet 408

#### SPECIFICATION

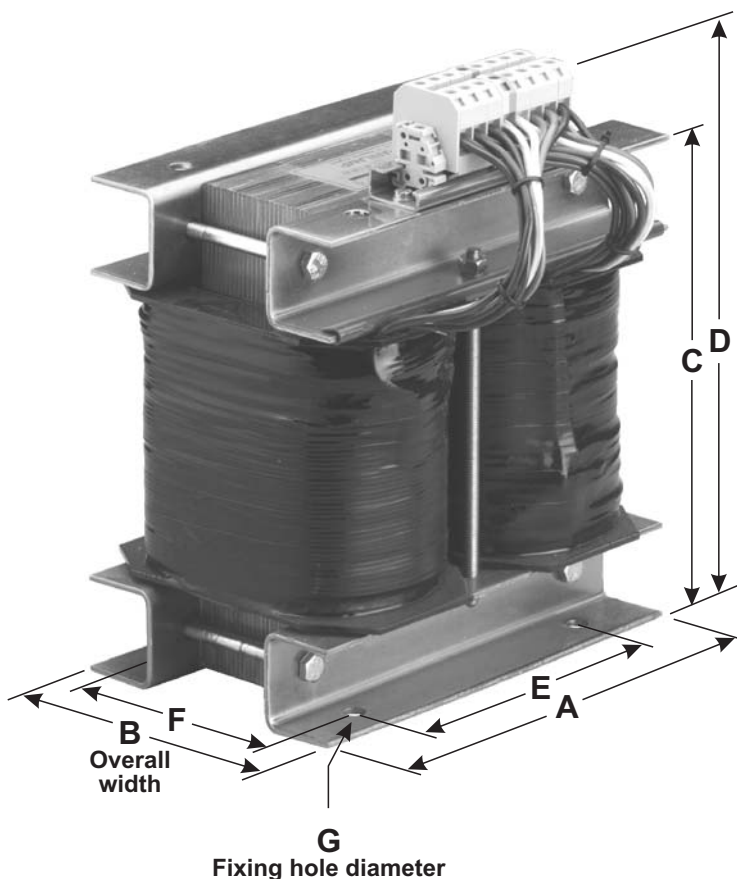
Temp. range: - 10 C to + 50 C

Insulation: To BS 2757 class E

Regulation: 1 - 3.5% dependant on design

Flash test: 3 kV for 1 minute minimum

Max. voltage: 600 V



#### Dimensions mm

Product Reference	Rating kVA	A	B	C	D	E	F	G	Weight kg	Enclosure Reference
TCF 1	3.6 - 4.5	240	170	250	330	160	115	12	30	ENV 6
TCF 2	4.6 - 6.5	240	175	280	330	160	115	12	37	ENV 6
TCF 3	6.6 - 7.5	240	195	280	330	160	140	12	45	ENV 6
TCF 4	7.6 - 12	280	175	400	470	160	120	12	60	HDE 1
TCF 5	12.1 - 16.0	280	195	400	470	160	140	12	80	HDE 1
TCF 6	16.1 - 20.0	280	220	400	470	160	164	12	100	HDE 1
TCF 7	20.1 - 24.0	280	245	400	470	160	186	12	120	HDE 1
TCF 8	24.1 - 30.0	310	240	520	660	240	180	12	140	HDE 2
TCF 9	30.1 - 40.0	310	270	520	660	240	210	12	180	HDE 2
TCF 10	40.1 - 50.0	310	300	520	660	240	240	12	220	HDE 2
TCF 11	50.1 - 65.0	310	360	520	660	240	300	12	260	-

TCF 1 - 4 TERMINAL BLOCKS WHERE APPROPRIATE, STUDS FITTED FOR HIGHER CURRENTS

TCF 5 - 10 STUD TERMINALS FITTED AS STANDARD

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST

## CUSTOM THREE PHASE DOUBLE WOUND

### 2 kVA - 100 kVA

A range of three phase transformers designed for optimum performance using low watt loss cores. The core construction transformers have terminal blocks or screw stud connections for higher currents. Fixing is by channel brackets with larger sizes having lifting eyes to ease installation.

Designed to customer requirements, earth screens can be fitted if required. All transformers are supplied with a polyester varnish finish, a tropicalised enveloping varnish is optional. They are designed to operate in a maximum ambient temperature of 30 deg C without derating.

Smaller three phase transformers than those shown are available, details on application.

A full range of steel stove enamelled enclosures is available for all types, see Data Sheet 408.

#### SPECIFICATION

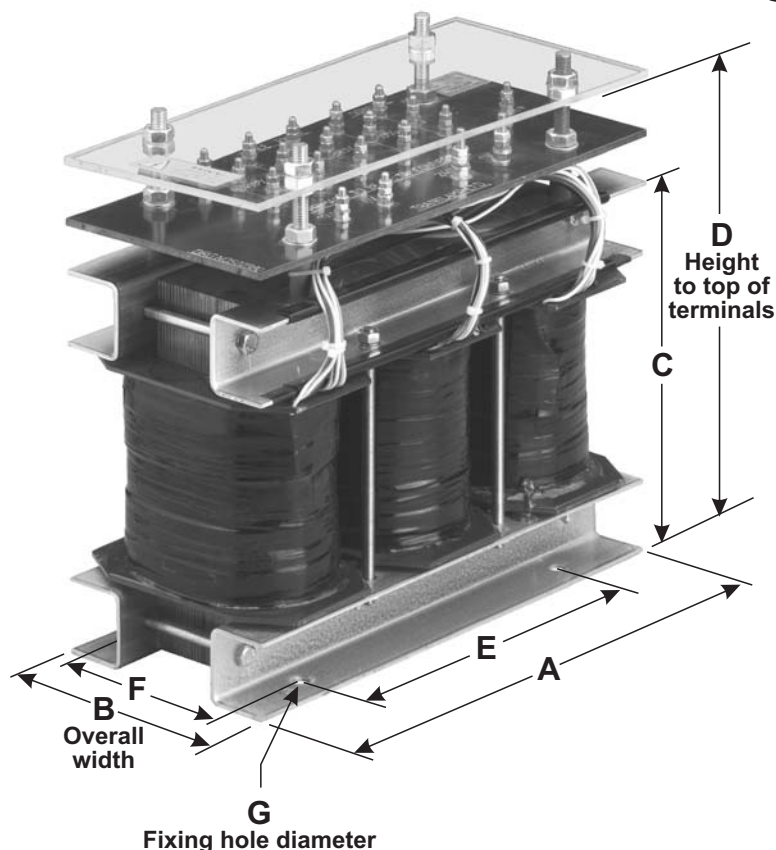
Temp. range: - 10 C to + 50 C

Insulation: To BS 2757 class E

Regulation: 1-6% dependant on design

Flash test: 3 kV for 1 minute minimum

Max. voltage: 600 V



#### Dimensions mm

Product Reference	Rating kVA	A	B	C	D	E	F	G	Weight kg	Enclosure Reference
TTP 1	2 - 3.7	360	130	250	330	240	75	12	30	HDE 0
TTP 1.5	3.8 - 5.0	360	150	250	330	240	95	12	37	HDE 0
TTP 2	5.1 - 6.7	360	170	250	330	240	115	12	45	HDE 3
TTP 3	6.8 - 10.0	360	175	280	360	240	115	12	55	HDE 3
TTP 4	10.1 - 13.4	360	180	280	360	240	140	12	67	HDE 3
TTP 5	13.5 - 18.0	420	175	400	470	300	120	12	90	HDE 4
TTP 6	18.1 - 22.5	420	195	400	470	300	140	12	120	HDE 4
TTP 7	22.6 - 27.0	420	220	400	470	300	164	12	150	HDE 4
TTP 8	27.1 - 30.0	420	245	400	470	300	180	12	180	HDE 4
TTP 9	30.1 - 39.0	465	240	520	660	360	180	12	210	HDE 5
TTP 10	39.1 - 52.0	465	280	520	660	360	210	12	250	HDE 5
TTP 11	52.1 - 75	465	300	520	660	360	240	12	310	HDE 5
TTP 12	75.1 - 100	465	360	520	660	360	300	12	360	-

TTP 1 - 5 TERMINAL BLOCKS WHERE APPROPRIATE, STUDS FOR HIGHER CURRENTS

TTP 6 - 11 STUD TERMINALS FITTED AS STANDARD

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST



# TTS Range

Custom 3 Phase -  
1 Phase Transformers  
(0 - 50kVA)



Product Data Sheet 403/2 Issue 0

## CUSTOM THREE PHASE TO SINGLE PHASE

0 - 50 kVA

A range of three phase to single phase transformers designed for optimum performance using low watt loss cores. The core construction transformers have terminal blocks or screw stud connections for higher currents. Fixing is by channel brackets with larger sizes having lifting eyes to ease installation.

Designed to customer requirements, earth screens can be fitted if required. All transformers are supplied with a polyester varnish finish, a tropicalised enveloping varnish is optional. They are designed to operate in a maximum ambient temperature of 30 deg C without derating.

Smaller three phase transformers than those shown are available, details on application.

A full range of steel stove enamelled enclosures is available for all types, see Data Sheet 408.

### SPECIFICATION

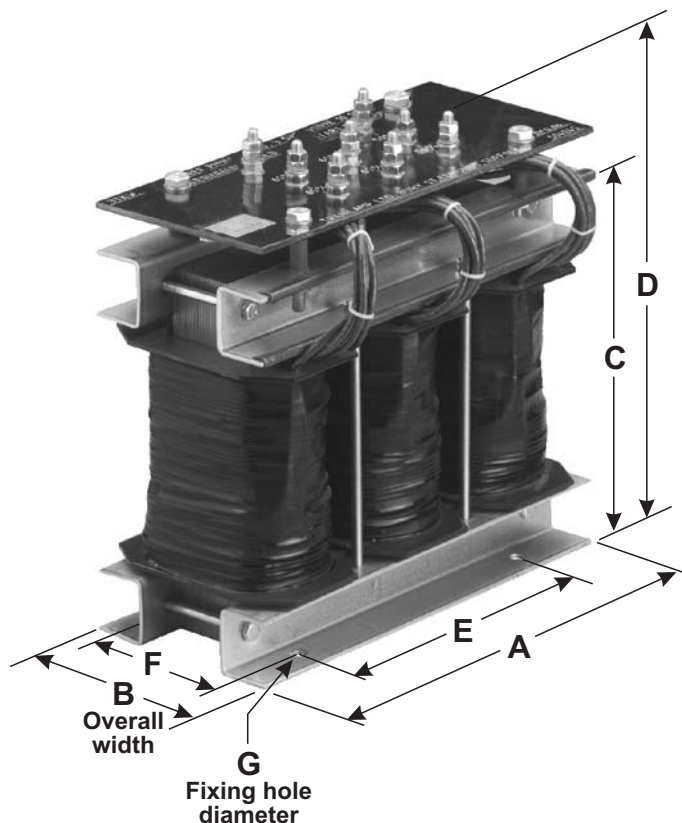
Temperature range: - 10 C to + 50 C

Insulation: To BS 2757 class E

Regulation: 1 - 6% dependant on design

Flash test: 3 kV for 1 minute minimum

Maximum voltage: 600 V



### Dimensions mm

Product Reference	Rating kVA	A	B	C	D	E	F	G	Weight kg	Enclosure Reference
TTS 1	0 - 500VA	297	105	118	147	262	68	5X9	12	ENV 6
TTS 2	501VA - 1.0	345	122	137	166	328	85	6X11	17	ENV 6
TTS 3	1.1 - 2.5	360	120	250	330	240	75	12	25	HDE 0
TTS 3.5	2.6 - 3.3	360	150	250	330	240	95	12	31	HDE 0
TTS 4	3.4 - 4.5	360	170	250	330	240	115	12	40	HDE 3
TTS 5	4.6 - 6.6	360	175	280	360	240	115	12	50	HDE 3
TTS 6	6.7 - 9.0	360	195	280	360	240	140	12	62	HDE 3
TTS 7	9.1 - 12.0	420	175	400	470	300	120	12	80	HDE 4
TTS 8	12.1 - 15.0	420	195	400	470	300	140	12	105	HDE 4
TTS 9	15.1 - 18.0	420	220	400	470	300	164	12	120	HDE 4
TTS 10	18.1 - 20.0	420	245	400	470	300	180	12	150	HDE 4
TTS 11	20.1 - 26.0	465	240	520	660	360	180	12	185	HDE 5
TTS 12	26.1 - 35.0	465	270	520	660	360	210	12	215	HDE 5
TTS 13	35.1 - 50	465	300	520	660	360	240	12	280	HDE 5

TTS 1 - 6 TERMINAL BLOCKS WHERE APPROPRIATE, STUDS FOR HIGHER CURRENTS

TTS 7 - 13 STUD TERMINALS FITTED AS STANDARD

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST

## AUTO STARTING 3 PHASE TRANSFORMERS

### 10 kW - 860 kW

A range of three phase, air cooled transformers for motor starting. Available for auto or Korndorffer methods of starting, the transformers are designed to customer requirements.

Maximum input voltage is 660 V and the standard tapping range is 40% minimum to 90% maximum. Ratings shown are to the requirements of BS EN 60947-4-1:2001. The core construction transformers have terminal blocks or screw stud connections for higher currents.

Fixing is by channel brackets with larger sizes having lifting eyes to ease installation. All transformers have a polyester varnish finish, a tropicalised varnish is optional. Temperature sensing devices can be fitted to protect against temperature rise upon request.

A full range of steel enclosures for floor mounting is available for all types, see Data Sheet 408.

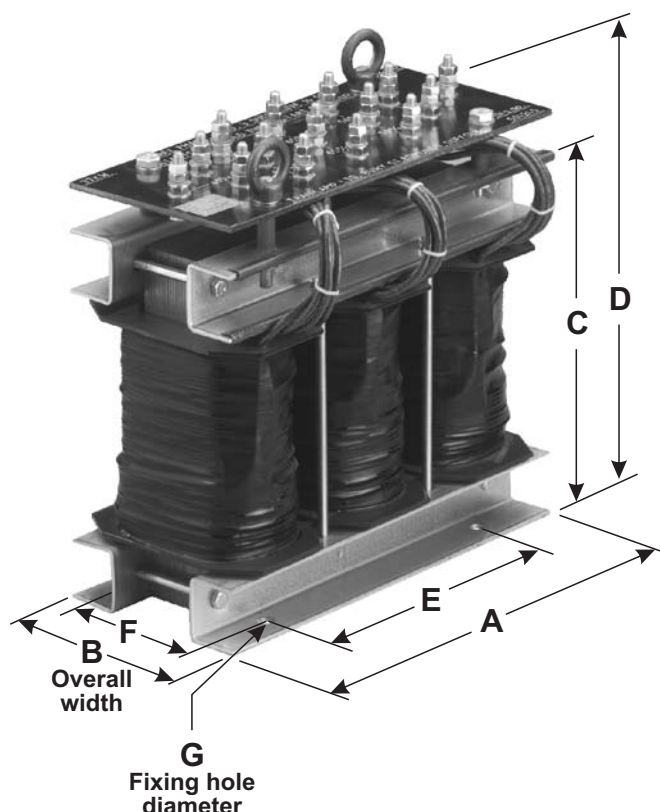
#### Information Required When Ordering:

**Rating of apparatus to be started.**

**Normal line voltage.**

**Duty cycle in starts per hour.**

**Start duration when motor rating above 300 kW.**



#### Dimensions mm

Product Reference	Rating kW			A	B	C	D	E	F	G	Weight kg	Enclosure Reference
	40 S.P.H.	15 S.P.H.	2 S.P.H.									
ATP 1	10	15	45	360	120	250	330	240	75	12	30	HDE 0
ATP 1.5	13	20	60	360	150	250	330	240	95	12	37	HDE 0
ATP 2	15	30	75	360	155	250	330	240	110	12	45	HDE 3
ATP 3	24	45	130	360	155	280	360	240	110	12	55	HDE 3
ATP 4	33	60	150	360	180	280	360	240	135	12	67	HDE 3
ATP 5	42	75	205	420	175	400	470	300	120	12	90	HDE 4
ATP 6	52	93	260	420	195	400	470	300	140	12	120	HDE 4
ATP 7	65	112	298	420	220	400	470	300	164	12	150	HDE 4
ATP 8	71	130	335	420	245	400	470	300	180	12	180	HDE 4
ATP 9	93	205	447	465	240	520	660	360	180	12	210	HDE 5
ATP 10	130	223	573	465	270	520	660	360	210	12	250	HDE 5
ATP 11	186	335	860	465	300	520	660	360	240	12	310	HDE 5

THE ABOVE FIGURES ARE BASED UPON START DURATION OF 20 SECONDS

ATP 1 - 4 TERMINAL BLOCKS WHERE APPROPRIATE, STUDS FITTED FOR HIGHER CURRENTS

ATP 5 - 11 STUD TERMINALS FITTED AS STANDARD

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST

SINGLE PHASE AUTO AVAILABLE UP TO 300 AMP



**PT  
Range**

**Portable Tool  
Transformers**



**Product Data Sheet 404/2 Issue 1**

## **PORTABLE TOOL TRANSFORMERS**

### **350 VA - 3 kVA CONTINUOUS RATING**

*All transformers encapsulated in splash proof case made of self extinguishing grade glass fibre reinforced polyester compound. The cases, with carrying handle, have 1.5 m three core cable fitted and output sockets to BSEN 60309-2: 1999 (BS 4343).*

*The transformers are double wound with earth screen and are protected by thermal cut out with manual reset.*

*Custom built portable tool transformers are available at other voltages and higher VA ratings.*



**Portable Tool Transformer  
with two output sockets**

<b>PRODUCT REFERENCE</b>	<b>CONTINUOUS RATING</b>	<b>30 MINUTE RATING</b>	<b>WEIGHT kg</b>	<b>No. OF SOCKETS</b>
PT/350/1	350 VA	500 VA	6	1
PT/750/1	750 VA	1 kVA	9	1
PT/750/2	750 VA	1 kVA	9	2
PT/1k/1	1 kVA	2 kVA	11	1
PT/1k/2	1 kVA	2 kVA	11	2
PT/1.5k/2	1.5 kVA	2.5 kVA	16	2
PT/2k/2	2 kVA	3 kVA	23	2
PT/3k/2	3 kVA	4 kVA	34	2

**THE STANDARD PORTABLE TOOL INPUT VOLTAGE IS 240 VAC**

**OUTPUT 55 - 0 - 55 VAC**

**OTHER VOLTAGES AND VA RATINGS ARE AVAILABLE AS CUSTOM BUILT UNITS**

## TAGGED BOBBIN TRANSFORMERS

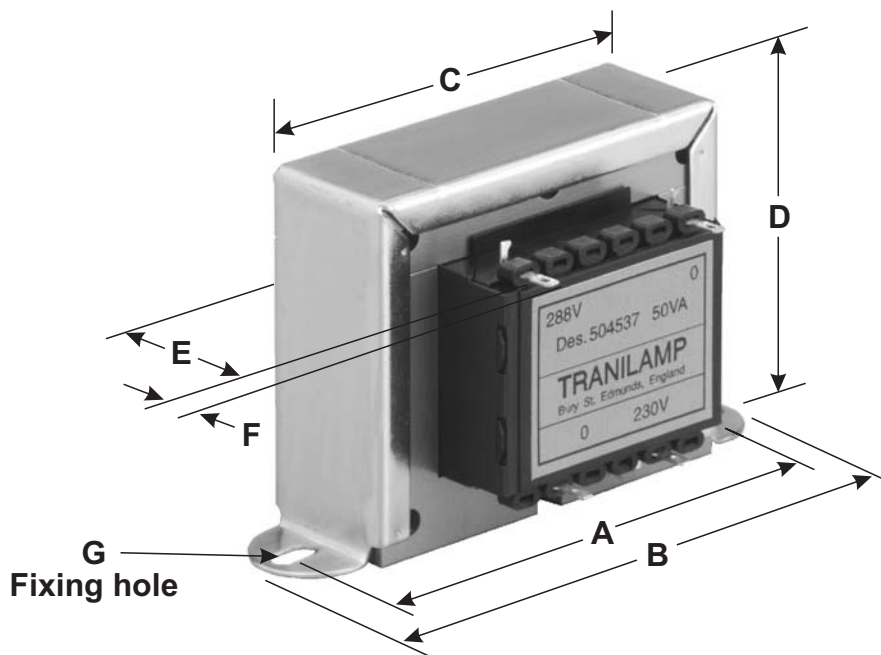
### 0 - 75 VA

A range of miniature transformers wound on robust glass filled nylon bobbins. Designed to customer requirements the transformers incorporate double section full shrouded bobbins thus removing the necessity for an interwinding screen. Alternatively 0.05 copper screens can be fitted to standard single section bobbins. All transformers are supplied with a polyester varnish finish. They are designed to operate in a maximum ambient temperature of 30 deg C without derating.

DIN rail mounting kit available.

#### SPECIFICATION

Temperature range:	- 10 C to + 50 C
Insulation:	To BS 2757 class E
Regulation:	12 - 20% dependant on design
Flash test:	2 kV
Maximum voltage:	TBT 1, 440 V
	TBT 2 - 7, 600 V



#### Dimensions mm

Product Reference	Rating VA	A	B	C	D	E	F	G	Weight Kg	No of Tags Available
TBT 1	0 - 5.0	54	60	45	37	33	6	3.5 X 5	0.23	15 : 3 X 5
TBT 2	5.1 - 8.0	60	75	50	42	36	6	3.5 X 5	0.28	18 : 3 X 5
TBT 3	8.1 - 12.0	68	81	55	45	39	6	4.5 X 9	0.40	18 : 3 X 6
TBT 4	12.1 - 15.0	73	87	59	50	44	7	4.5 X 9	0.50	15 : 3 X 5
TBT 5	15.1 - 25.0	83	96	69	58	49	7	4.5 X 9	0.70	15 : 3 X 5
TBT 6	25.1 - 50.0	92	105	78	65	56	7	4.5 X 9	1.14	18 : 3 X 6
TBT 7	50.1 - 75.0	102	117	88	73	62	7	4.5 X 9	1.40	18 : 3 X 6

FLYING LEADS OR TERMINAL BLOCK AVAILABLE

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE, DIMENSIONS ON REQUEST

# TSF Range

Shrouded Single Phase  
Transformers  
(10VA - 650VA)



Product Data Sheet 405/2 Issue 0

## SHROUDED SINGLE PHASE TRANSFORMERS

### 10VA - 650 VA

A range of shrouded transformers designed to the same basic specification as our TUF 1 - 13 range but having shrouded clamps. The shell construction transformers have both ends of the windings shrouded and can be supplied with terminal blocks or flying leads.

Designed to customer requirements, the transformers can be fitted with an earth screen. All transformers have a polyester varnish finish, a tropicalised varnish is optional. They are designed to operate in a maximum ambient temperature of 30 deg C without derating.

#### SPECIFICATION

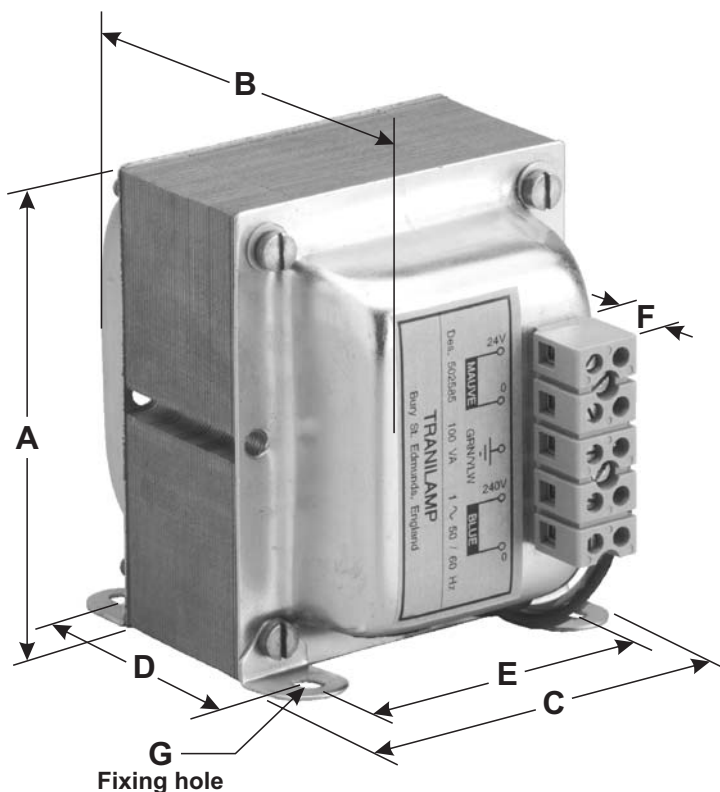
Temperature range: - 10 C to + 50 C

Insulation: To BS 2757 class E

Regulation: 5 - 15% dependant  
on design

Flash test: 2 kV

Maximum voltage: 600 V



#### Dimensions mm

Product Reference	Rating VA	A	B	C	D	E	F	G	Weight kg
TSF 1	10 - 20	70	64	56	40	45	16	4 X 6	0.8
TSF 2	21 - 35	79	75	64	45	48	16	4 X 6	1.1
TSF 3	36 - 50	79	80	64	50	48	16	5 X 8	1.5
TSF 4	51 - 75	89	80	71	51	57	16	4 X 9	2.0
TSF 5	76 - 100	99	95	80	65	63	16	4 X 9	2.5
TSF 6	101 - 150	99	108	80	77	63	16	4 X 9	3.2
TSF 7	151 - 200	116	98	96	67	80	16	6 X 12	3.7
TSF 8	201 - 250	116	110	96	80	80	16	6 X 12	4.6
TSF 9	251 - 300	116	127	96	92	80	16	6 X 12	5.7
TSF 10	301 - 400	136	130	112	79	88	16	5 X 9	6.3
TSF 11	401 - 450	116	135	96	115	80	16	6 X 12	6.9
TSF 12	451 - 500	136	142	112	92	88	16	5 X 9	7.5
TSF 13	501 - 650	136	156	112	92	88	16	5 X 9	8.8

TERMINAL BLOCK FITTED AS STANDARD - FLYING LEADS OPTIONAL

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY

HIGHER FREQUENCY TRANSFORMERS AVAILABLE. DIMENSIONS ON REQUEST

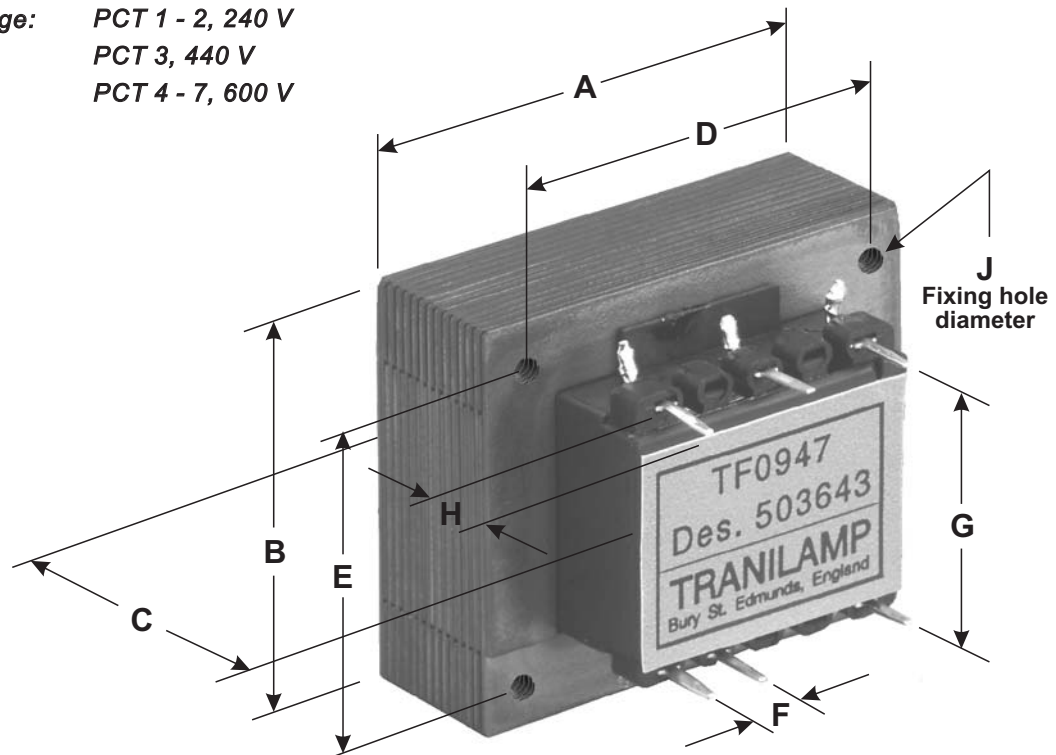
# PRINTED CIRCUIT TRANSFORMERS OPEN TYPE

## 0 - 25 VA

A range of printed circuit transformers wound on robust glass filled nylon bobbins. Designed to customer requirements the transformers are for direct mounting to printed circuit boards with larger versions having a core fixing hole facility. The construction, excluding PCT 1 & 2, incorporates double section half shrouded bobbins thus removing the necessity for an interwinding screen. Alternatively 0.05 copper screens can be fitted to standard single section bobbins. All transformers are supplied with a polyester varnish finish. They are designed to operate in a maximum ambient temperature of 30 deg C without derating. Thermal fuse protection can be fitted if required.

### SPECIFICATION

Temperature range:	- 10 C to + 50 C
Insulation:	To BS 2757 class E
Regulation:	12 - 30% dependant on design
Flash test:	2 kV
Maximum voltage:	PCT 1 - 2, 240 V
	PCT 3, 440 V
	PCT 4 - 7, 600 V



### Dimensions mm

Product Reference	Rating VA	A	B	C	D	E	F	G	H	J	Weight kg	No. of tags available
PCT 1	0 - 1.5	30	25	28	-	-	5	20	5	-	0.10	10 : 2 X 5
PCT 2	1.6 - 3.0	38	32	28	-	-	5	25	5	-	0.16	15 : 2 X 5
PCT 3	3.1 - 5.0	43	36	33	-	-	5.1	22.9	5	-	0.20	15 : 2 X 5
PCT 4	5.1 - 8.0	48	40	36	40	32	5.1	25.4	6	3	0.25	18 : 2 X 6
PCT 5	8.1 - 12.0	53	44	39	44	35	5.1	27.9	6	3	0.30	18 : 2 X 6
PCT 6	12.1 - 15.0	57	48	44	48	38	7.6	30	6	4	0.50	15 : 2 X 5
PCT 7	15.1 - 25.0	66	55	49	55	44.5	7.6	35.5	6	4	0.60	15 : 2 X 5

ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY  
HIGHER FREQUENCY TRANSFORMERS AVAILABLE, DIMENSIONS ON REQUEST



## TRANSFORMER RECTIFIERS - UNSMOOTHED UP TO 500 AMP

407

The standard TRU transformer rectifiers listed have 240 VAC input and 24 VDC output from 50 VA to 500 VA. Other voltages including inputs of 110 or 415 VAC and outputs of 12 or 48 VDC are available.

We also offer a diverse range of transformer rectifier equipment designed and manufactured to customer's own requirements with single phase and three phase units up to 500 AMP.

Open or enclosed types, are available.

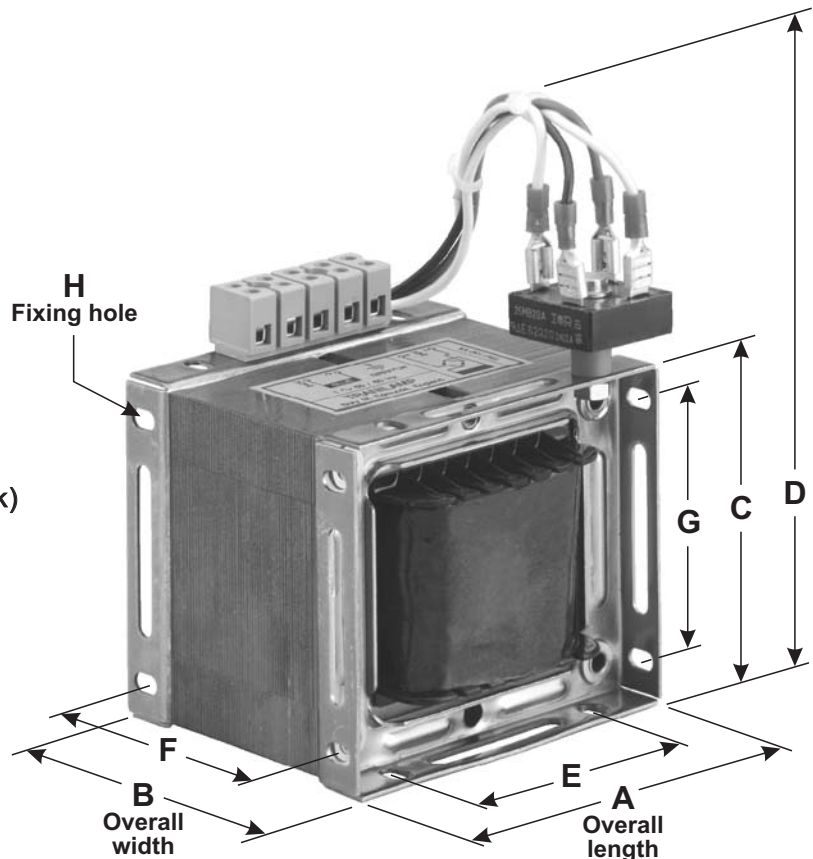
Units can be fitted with high speed fuse links for the protection of high power semiconductor devices. Input taps can be incorporated to regulate the DC output voltage.

Ammeters and voltmeters can be fitted to measure AC or DC voltages and current.

For full information please contact us.

### Dimensions mm

TRU 50 VA - 150 VA  
(Note: TRU 200 VA - TRU 500 VA  
rectifiers are mounted on a heatsink)



### STANDARD TRU RANGE 240 VAC / 24 VDC UNSMOOTHED

PRODUCT CODE	OUTPUT CURRENT	MAXIMUM DIMENSIONS				FIXING DIMENSIONS				Wt. kg	CASE No.	REG. %
		A	B	C	D	E	F	G	H			
TRU 50	2 A	82	60	66	125	54	40	54	4X8	1.2	ENV1	13
TRU 100	4 A	99	75	83	150	64	55	64	5X8	2.4	ENV1	8
TRU 150	6 A	99	88	83	150	64	68	64	5X8	3.0	ENV1	8
TRU 200	8 A	207	90	99	117	64	55	64	5X9	3.6	ENV4	7
TRU 250	10 A	207	90	99	117	64	55	64	5X9	3.9	ENV4	7
TRU 300	12 A	207	116	99	117	64	68	64	5X9	4.6	ENV4	7
TRU 500	20 A	207	150	115	138	89	83	89	6X11	8.0	ENV4	5

ALL DIMENSIONS ARE NOMINAL  
AND REFER TO 24 VDC  
UNSMOOTHED ONLY  
INPUT 240 VAC 50/60 Hz  
OUTPUT 24 VDC UNSMOOTHED  
OTHER VOLTAGES ON REQUEST



# TRS Range

## Transformer Rectifiers Smoothed



Product Data Sheet 407/2 Issue 2

## TRANSFORMER RECTIFIERS - SMOOTHED UP TO 500 AMP

The standard TRS transformer rectifiers listed have 240 VAC input and 24 VDC smoothed output from 50 VA to 500 VA. Other voltages including inputs of 110 or 415 VAC and outputs of 12 or 48 VDC are available.

We also offer a diverse range of transformer rectifier equipment designed and manufactured to customer's own requirements. Single phase and three phase units up to 500 Amps.

Open or enclosed types are available.

Units can be fitted with high speed fuse links for the protection of high power semiconductor devices. Input taps can be incorporated to regulate the DC output voltage.

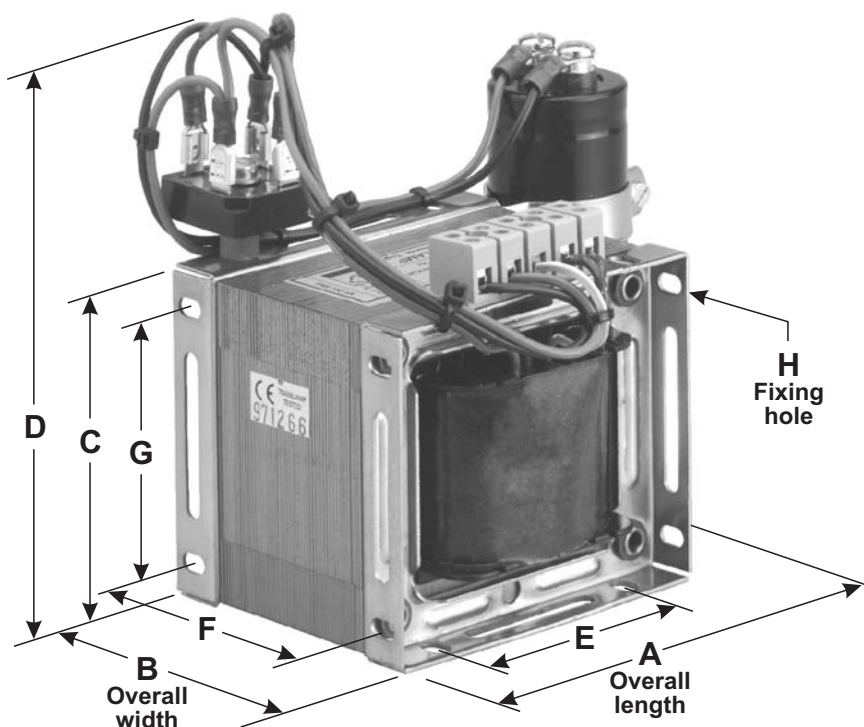
Ammeters and voltmeters can be fitted to measure AC or DC voltages and current. Smoothing circuits are incorporated for low ripple currents.

For full information please contact us.

### Dimensions mm

TRS 50 VA - 150 VA

(Note: TRS 200VA  
- TRS 500 VA  
rectifiers are mounted  
on a heatsink)



### STANDARD TRS RANGE 240 VAC / 24 VDC SMOOTHED

Product Code	Output Current	Max. Dimensions				Fixing Dimensions				Wt. kg	Enc No.	V Reg %
		A	B	C	D	E	F	G	H			
TRS 50	2 A	138	70	66	120	54	40	54	4X8	1.3	ENV2	26
TRS 100	4 A	155	80	83	150	64	55	64	5X8	2.5	ENV3	26
TRS 150	6 A	155	100	83	150	64	68	64	5X8	3.2	ENV3	30
TRS 200	8 A	270	184	244	244	235	114	-	5X8	6.4	ENV3	30
TRS 250	10 A	270	184	244	244	235	114	-	5X8	6.7	ENV3	30
TRS 300	12 A	270	184	244	244	235	114	-	5X8	7.7	ENV3	30
TRS 500	20 A	337	184	270	270	298	114	-	6X11	12.4	ENV4	30

ALL DIMENSIONS ARE NOMINAL  
AND REFER TO 24 VDC  
SMOOTHED ONLY  
INPUT 240 VAC 50/60 Hz  
OUTPUT 24 VDC SMOOTHED  
OTHER VOLTAGES  
ON REQUEST

# EPC Range

Printed Circuit  
Transformers -  
Encapsulated (0 - 25VA)



Product Data Sheet 406/2 Issue 0

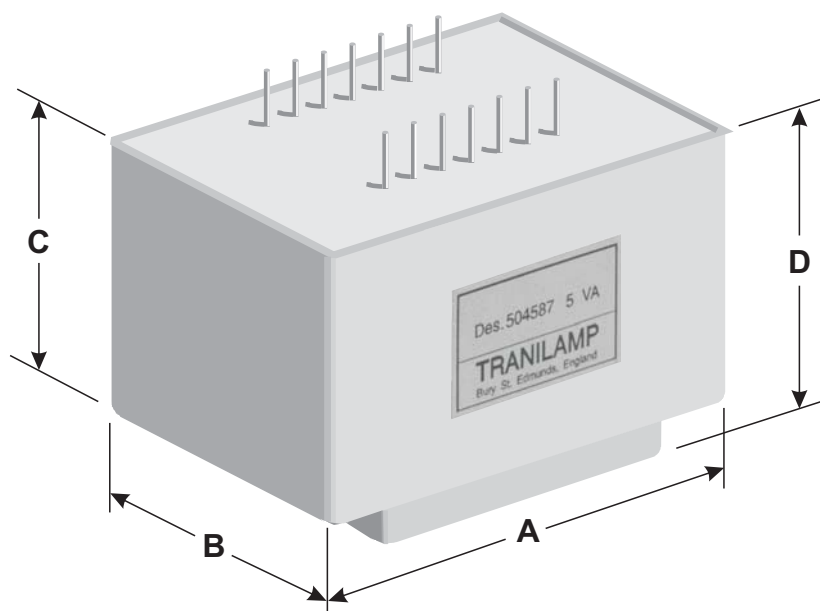
## PRINTED CIRCUIT TRANSFORMERS ENCAPSULATED TYPE

### 0 - 25 VA

*The transformers are an encapsulated version of the PCT range overleaf; the electrical specifications being identical for all VA sizes.*

*Thermal fuse protection to BS 3535 can be fitted, if required.*

*In addition to the moulded cases detailed, projecting lugs or pre-drilled units for chassis fixing can be manufactured.*



#### Dimensions mm

Product Reference	VA Range	A	B	C	D	Weight kg	No. of Tags available
EPC 1	0 - 1.5	34	29	27	31	0.15	1 0 : 2 X 5
EPC 2	1.6 - 3.0	41	35	26	31	0.20	1 5 : 2 X 5
EPC 3	3.1 - 5.0	45	39	26	33	0.28	1 5 : 2 X 5
EPC 4	5.1 - 8.0	52	44	30	38	0.31	1 8 : 2 X 6
EPC 5	8.1 - 12.0	58	49	33	42	0.37	1 8 : 2 X 6
EPC 6	12.1 - 15.0	64	54	38	47	0.60	1 5 : 2 X 5
EPC 7	15.1 - 25.0	70	59	39	49	0.70	1 5 : 2 X 5

**FLYING LEADS OR TERMINAL BLOCK AVAILABLE**

**DIMENSIONS CAN VARY SLIGHTLY WHEN ENCAPSULATED. PLEASE STATE IF CRITICAL**  
**ALL DIMENSIONS ARE NOMINAL AND REFER TO 50/60 Hz ONLY**

**HIGHER FREQUENCY TRANSFORMERS AVAILABLE, DIMENSIONS ON REQUEST**

## ENV ENCLOSURES

### WALL / FLOOR MOUNTING

A range of steel cases to cover up to 7.5 kVA single phase transformers. The cases are fully ventilated and are suitable for floor or wall mounting.

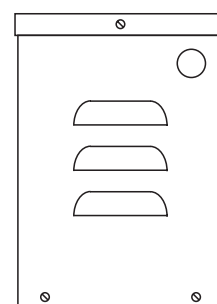
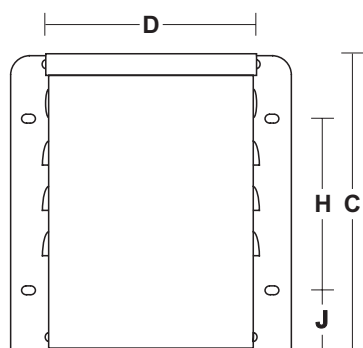
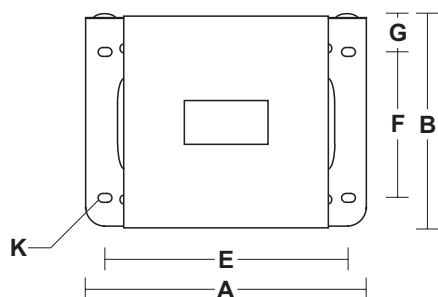
The lid is drip proof and the construction is a three piece design for easy wiring and installation.

All cases are supplied with two 20 mm conduit entries.

The enclosures are IP23 protection as standard; IP54 or IP65 cases are optional.

Transformers can be supplied with cases to customer design.

#### Dimensions



#### SHEET STEEL CONSTRUCTION GREY STOVE ENAMEL FINISH

Product Code	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Weight kg
ENV 0	197	120	130	127	162	63	29	74	30	8	1.0
ENV 1	197	120	194	127	162	63	29	127	34	8	1.6
ENV 2	220	162	223	152	184	114	24	152	36	8	1.8
ENV 3	270	184	244	189	235	114	35	152	46	8	2.7
ENV 4	337	220	270	254	298	114	35	152	59	8	4.1
ENV 5	350	248	353	280	318	159	45	228	63	8	5.8
ENV 6	384	312	454	305	337	162	75	254	100	8	8.4

# HDE

## Large Transformer Enclosures



Product Data Sheet 408/2 Issue 0

### HDE ENCLOSURES - FLOOR MOUNTED

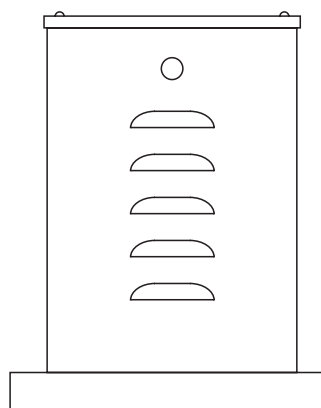
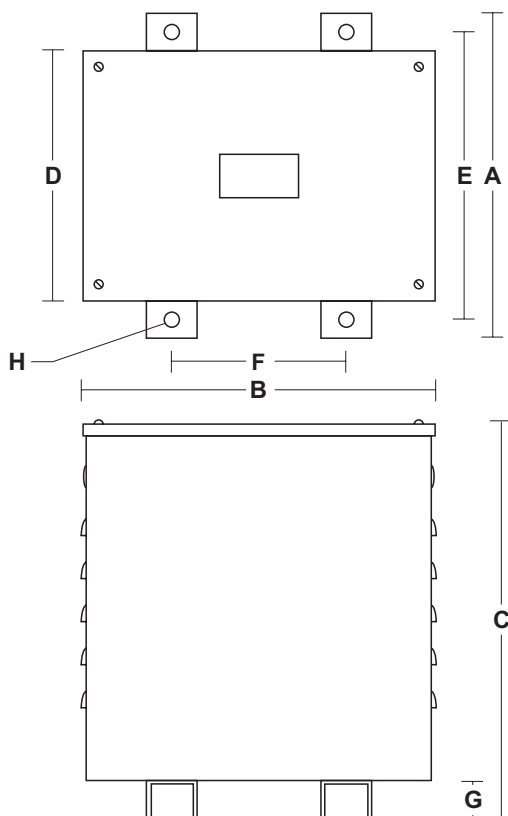
A range of steel cases to cover 7.5 - 50 kVA single phase and up to 75 kVA three phase. The cases are fully ventilated having louvered sides and an open base for optimum convection providing maximum dissipation of heat.

All cases are suitable for floor mounting only and are supplied with two 20 mm conduit entries.

The enclosures are IP23 protection as standard; IP54 or IP65 cases are optional.

Transformers can be supplied with cases to customer design.

#### Dimensions



#### SHEET STEEL CONSTRUCTION GREY STOVE ENAMEL FINISH

Product Code	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Weight kg
HDE 0	300	420	370	220	270	240	40	12	11.0
HDE 1	470	340	610	360	405	180	40	12	18.5
HDE 2	530	370	730	445	470	240	40	12	23.5
HDE 3	380	420	480	300	330	240	40	12	14.8
HDE 4	470	480	610	360	405	300	40	12	20.6
HDE 5	530	525	730	415	470	360	40	12	26.7

# Conditions of Sale



Product Data Sheet 000/2 Issue 0

*Our terms are net monthly and where previous payments are outstanding for 45 days any new orders will not be commenced until the account is cleared. Special terms and agreed quantity discounts will only be given on the understanding that payment of the invoice is made within 45 days, otherwise a further invoice will be issued for the appropriate discount shown and full payment demanded.*

*We reserve the right to alter prices and specifications of any articles in the catalogue. A minimum order charge will be applied. Improvement in design from time to time may alter the present illustrations or descriptions. Every care has been taken to ensure that the data and dimensions are correct as shown but we accept no liability in respect of contingencies arising from errors. Where dimensions are critical a check should be made for the latest data.*

*Wherever possible B.S. grade materials are used in our products and all units undergo tests before despatch. We will replace or repair free of charge under guarantee any of our products returned within 24 months of the date of sale providing there is prior agreement and they have been properly used and defects are solely due to faulty workmanship or materials. We will not replace bulbs or any units that have been overloaded or otherwise damaged. We do not accept responsibility for any consequential damage whatsoever arising from, or said to arise from, the use of our products.*

*Notwithstanding delivery, all goods supplied by us will remain our absolute property until you pay in full for them and for all other goods previously supplied by us. You will store the goods in such a way that they are readily identifiable as our property, but you may, as trustees for us, sell them to a third party in the normal course of your business. Upon any sale by you of the goods (either alone or with other items) all rights which you have against the buyer shall automatically vest in us. We shall be entitled, immediately after giving notice of our intention to repossess, to enter upon any premises with such transport as may be necessary and repossess any goods to which we have title under this clause.*

Please make enquiries to your Stockist or direct to:

**Tranilamp Ltd**  
69-70 Eastern Way  
Bury St Edmunds  
Suffolk IP32 7AB  
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