

THE PU9 & PU9L UNDERWATER FLOODLIGHT FOR SWIMMING POOLS

Installation of all Certikin underwater lighting equipment must comply with IEE 16th Edition (E.C. Countries only).

The Certikin PU11 Transformer complies with the Low Voltage Electrical Equipment (Safety) Regulations: S1728: 1989 and specification EN61558.

Certikin underwater lighting equipment complies with the following index of protection ratings:

PU9	Light Unit	:	IPX8
PU10N	Deck Box	:	IP65
PU11S	Transformer	:	IP65

IMPORTANT

Please read this booklet *before* commissioning your underwater lights.

This leaflet should be held by the person in charge of pool maintenance.

INSTALLATION AND MAINTENANCE CHECK-LIST

Use these points as a regular check-list to help maintain the life of your underwater light

Always ensure that:

1. All glands and screws are fully tightened on underwater light unit for a perfect seal.
2. On-load voltage measured at the deck box does not exceed 12V AC. For optimum lamp life the deck box voltage should be between 10.3 - 11V AC.
3. The 'Micallef' water-tight gland is fully tightened at the deck box.
4. The lamp is *fully* submerged whenever the light is switched on.

When changing lamps, always use the Certikin PU8 kit and renew the seal with the O-ring provided.

Under no circumstances should the light be switched on while the lamp is not underwater.

These simple rules will help prevent damage to your light.

SAFETY POINTS

GENERAL

BEFORE REMOVING ANY COVER PLATES OR ANY PART OF THE COMPLETE UNDERWATER FLOOD LAMP UNIT SWITCH THE POWER OFF AT THE MAINS. ENSURE ALL CONNECTIONS ARE MADE CORRECTLY.

After initial installation each new season, switch the power off at the mains and inspect the transformer, the wiring, glands and lamp unit. Take special care in inspecting any parts in contact with the swimming pool water. If any part on inspection has or seems to have deteriorated replace it immediately. This will ensure that your light will work correctly and safely.

TRANSFORMER

The PU11S transformer, which is built to comply with IEC BS EN61558, should always be used with the PU9 underwater floodlight. The index of protection, or IP code, is IP65 as laid down in IEC EN60 529 and BS5490.

Input voltage 230V.

Maximum power rating 355VA.

The output voltages are nominally 12.8V, 13.6V, 14.5V, 15.3V on load to allow for the voltage drop in different lengths of cable to the PU9 light.

Max current 22.9A.

Input fuse 2A anti-surge (5x20mm)

Manually re-settable thermal cutout. Check the installation and wiring for any faults before re-setting the cutout.

LIGHT UNIT

Under no circumstances tamper with the light unit whilst the mains power is switched on.

Do not allow the water level to fall below the level of the top of the lamp unit whilst the lamp is on.

Do not switch the lamp on whilst it is out of the water or partially submerged.

ELECTRICAL EQUIPMENT USED AROUND AND IN SWIMMING POOLS, SHOULD BE INSTALLED BY A COMPETENT ELECTRICIAN.

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UNDERWATER FLOODLIGHTING

When you use CERTIKIN underwater floodlighting the following points should be borne in mind:

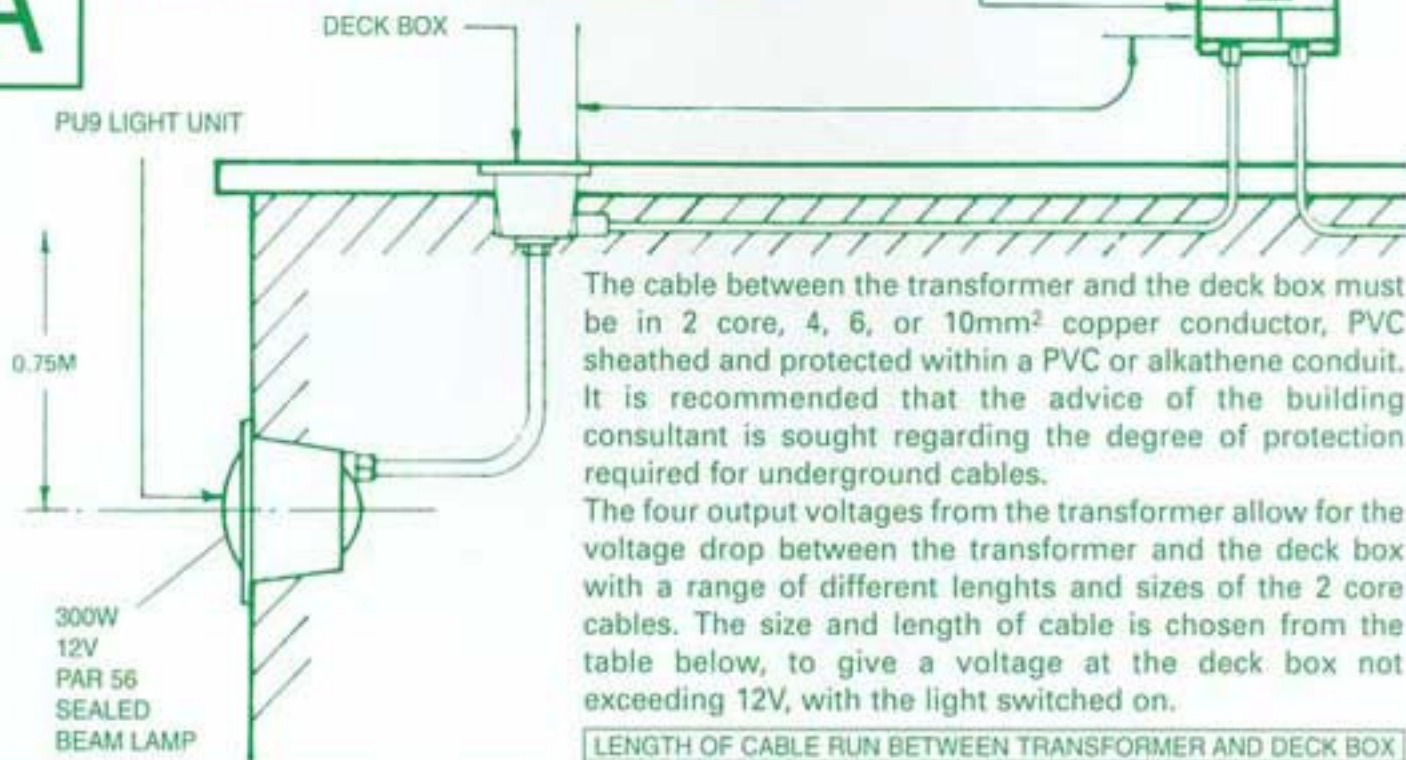
1. When planning how many lights to use, the following may be taken as a guide:
 - (a) For indoor pools where the lights will be used in conjunction with overhead or partial overhead lighting: one light per 38m sq. (400 sq.ft.) and one for every 24m sq. (250 sq.ft.) in excess of the basic figure.
 - (b) For indoor pools where the pool lights will be used for effect: one light per 24m sq. (250 sq.ft.) and one for every 24m sq. (250 sq. ft.) in excess of the basic figure.
 - (c) For outdoor pools where pool lights will be used in conjunction with area lighting or general lighting: one light per 30m sq. (320 sq.ft.) and one for every 19m sq. (200 sq.ft.) in excess of the basic figure.
 - (d) For outdoor pools where the pool lights will be used for effect: one light per 24m sq. (250 sq.ft.) and one for every 19m sq. (200 sq.ft.) in excess of the basic figure.
2. If coloured lenses are used, these will reduce the actual light output considerably, depending upon the intensity of the colour. Therefore, if these lenses are to be used, choose the palest tone in keeping with your requirements.
3. Keep all the lights, where possible, pointing away from the house to avoid glare.
4. Calculate the cable runs carefully and select the correct type and size for the length of run.

SPARE PARTS LIST

PART No.	DESCRIPTION	Qty.
UNDERWATER LIGHT - PU9		
SPC 454	Front Plate	1
SPC 471	Front Liner Ring	1
PLJ2	300W 12V Lamp	1
SPC 489N	O Ring	1
SPC 453P	Gland for Lamp Housing	1
SPC 466	M6 x 20mm Raised Csk Stainless Steel Screw	2
SPC 467	M4 x 20mm Pan Head Stainless Steel Screw	8
SPC 468	M4 Stainless Steel Shakeproof Washer	8
SPC 438	No. 10 x 1 1/2" Csk screw for liner light	12
SPC 513	No. 10 x 1 1/2" Csk screw for liner light	4
SPC 472	Gasket for Front Liner Ring	2
SPC 459	Back Liner Ring	1
SPC 465S	Flexible Conduit (Lamp Housing to Deck Box)	1
DECK BOX - PU10		
SPC 479	Deck Box Lid	1
SPC 853	Large O Ring (for Main Body)	1
SPC 853N	Small O Ring (for Lid)	1
SPC 516N	Terminal Block	2
SPC 484	No. 6 x 1/2" Csk screw	3
PU9M	Watertight Conduit Gland	1

A**TRANSFORMER TO DECK BOX CABLE RUNS**

PU11S TRANSFORMER



The cable between the transformer and the deck box must be in 2 core, 4, 6, or 10mm² copper conductor, PVC sheathed and protected within a PVC or alkathene conduit. It is recommended that the advice of the building consultant is sought regarding the degree of protection required for underground cables.

The four output voltages from the transformer allow for the voltage drop between the transformer and the deck box with a range of different lengths and sizes of the 2 core cables. The size and length of cable is chosen from the table below, to give a voltage at the deck box not exceeding 12V, with the light switched on.

LENGTH OF CABLE RUN BETWEEN TRANSFORMER AND DECK BOX			
	CABLE CORE AREA		
CONNECTIONS	4mm ²	6mm ²	10mm ²
(L - N1) 12.8V	0 - 8M	8 - 12M	12 - 19M
(L - N2) 13.6V	8 - 11M	13 - 17M	20 - 28M
(L - N3) 14.5V	12 - 16M	18 - 23M	29 - 38M
(L - N4) 15.3V	17 - 20M	24 - 30M	39 - 50M

WARNING

Damage or a reduction in lamp life will occur if the on-load voltage, when measured at the deck box terminals, exceeds 12V AC. The ideal on load voltage at the deck box is between 10.3 and 11V for optimum lamp life.

B**CERTIKIN PU11S****TRANSFORMER WIRING AND OUTPUT DETAILS**

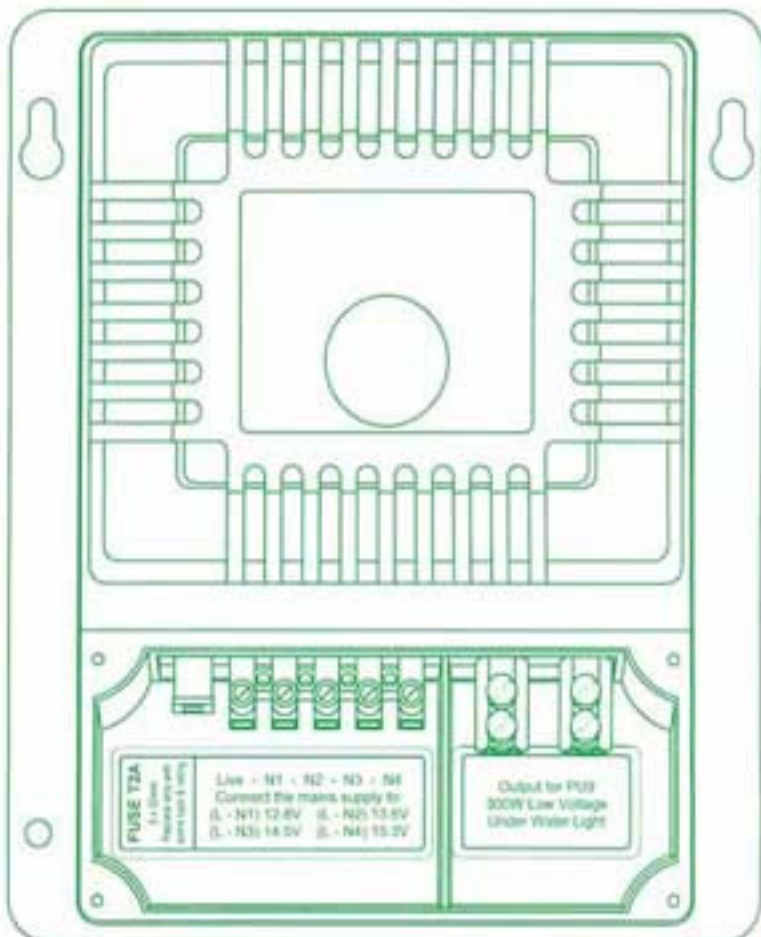
The transformer has a protection rating of IP65 and is suitable for use in areas outside zones 'A' and 'B' as specified in the IEE 16th Edition Wiring Regulations, section 602. However, unless all cables, cable glands and conduit comply with this specification IP65 cannot be claimed for the whole system. The transformer is designed for wall mounting, with cable entries at the bottom. The supplied cable glands are suitable for PVC sheathed cables with an overall diameter of 7.0 - 10.5mm for the small bore (primary) gland and 8.0 - 13.0mm for the large bore (secondary) gland. Other suitable 20mm glands or cable entries may be used in accordance with applicable wiring regulations.

FOR AN OUTPUT OF:

- 12.8V
- 13.6V
- 14.5V
- 15.3V

USE INPUTS:

- N1 and L
- N2 and L
- N3 and L
- N4 and L



C**WIRING COLOUR CODE****SUPPLY TO TRANSFORMER INPUT**

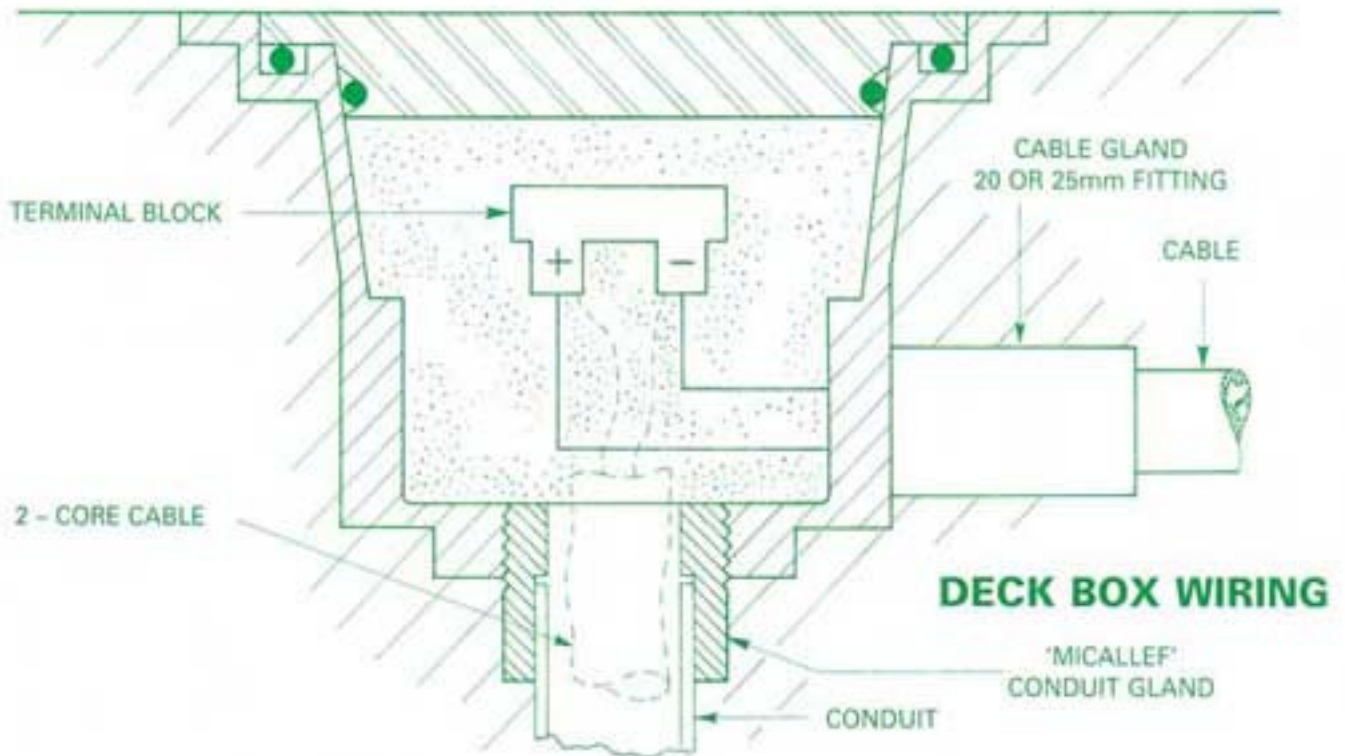
Live(+): Brown or Red
 Neutral (-): Blue or Black

TRANSFORMER OUTPUT TO DECK BOX

Live (+): Red
 Neutral (-): Blue

DECK BOX TO LIGHT

Live (+): Brown or Red
 Neutral (-): Blue or Black

**D****METHOD OF FIXING PU9L & GENERAL DIMENSIONS**