



User Instruction & Installation Manual

Voyager Remote Control Xenon Searchlight



Product Reference Number:

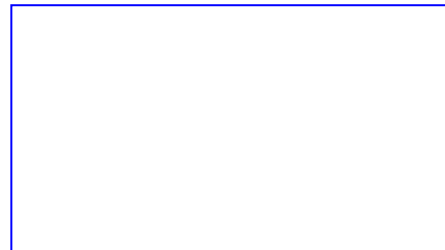
A2646 – VX330 WHITE 115/240v 300w

A2649 – VX330 MIRRORED STN.S (CHROME) 115/240v 300w

Manufacturer's details:

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Manual Part Number: C24116

Issue: 518/3/13

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1 - Introduction

It is imperative that this manual is read carefully and understood before installing your equipment. For your future reference please keep this manual in a safe place.

Thank you for specifying a product from the Francis Searchlights range. All Francis products are designed to give complete customer satisfaction and are manufactured to the highest engineering standards in order to ensure optimum performance and service life.

The Francis range combines features proven over many years service in the most hazardous conditions in both marine and land installations.

In order to prolong the life and performance of your product, we recommend that you only specify Francis Searchlights spare parts. This will also ensure that any warranties on your equipment will not be invalidated. Information on spares ordering and parts is provided in this manual.

Should you ever need to contact Francis Searchlights Ltd. regarding your equipment, please quote the Product Serial Number at all times.

2 - Safety Precautions

The following instructions must be adhered to, in order to ensure a safe working environment and the safety of the user.

Note: When unpacking or manoeuvring the searchlight into its fixing position, suitable lifting points must be used in order to prevent damage to the equipment or personal injury.

- Prevent rain, snow, condensation and water droplets from contacting the lamp as this may cause bulb failure and possible shattering;
- Xenon lamps run with a high internal pressure in excess of atmospheric. Whilst the construction is inherently strong, there is a slight risk of the bulb shattering;
- Never look directly into an illuminated searchlight as this may cause severe damage to eyesight. If it is necessary to inspect a lamp whilst in operation, always wear suitable protective goggles;
- Should it be necessary to examine the lamp with the front bezel removed, always use a protective shield and wear goggles to ensure a safe working environment;
- Never attempt to clean a lamp whilst in use;
- Searchlights get hot. Never touch the unit when lit and always allow 15 to 20 minutes for cooling down after turning the searchlight off;
- Never place anything on or cover the searchlight when in use;
- Ensure the lamp has cooled sufficiently before removal;
- If undue force appears necessary to remove the lamp, the equipment should be inspected by a competent person or contact the manufacturer;
- When breaking a lamp for disposal, care must be taken to ensure the glass fragments are safely contained. This operation must be performed out of doors in free air. In all circumstances refer to the lamp manufacturers instructions packed with the lamp;
- Due to the vast range of lamps available it may appear possible that more powerful lamps can be used in the equipment than for which it was designed. Even when the unit will physically accept a higher wattage or voltage lamp, this substitution is not recommended and is dangerous. This action will also void any warranties on the equipment.

Always refer to the lamp manufacturer's technical data when dealing with lamps.

3 - Technical Information

This product has been designed to operate in accordance with the product specification. The VX330 RC searchlight has the following features:

- All marine grade materials and fixings;
- Parabolic glass reflector;
- Stove enamel painted or Mirrored 316 Stainless Steel (Chrome);
- 350° horizontal rotation;
- Vertical movement +20° to -20°;
- Motor speed 2°- 20°/sec (Pan), -10°/sec (Tilt);
- Remote focus facility;
- Self Regulating internal heater;
- Toughened front glass;
- Sealing to IP66;

The searchlight also performs to the following optical data:

- Xenon light source;
- Lamp Wattage - 300 Watts;
- Supply voltage – 110v/240v AC 1Ph 50/60 Hz;
- Peak Beam Candlepower – 12.1 million Lux;
- Range – 3487 metres;
- Adjustable lamp focus, 1° spot to 10° flood;
- Temperature range: -50°C

In order that the searchlight operates correctly it is imperative that competent personnel are responsible for the installation, operation and servicing of this equipment. Failure to adhere to this advice may cause premature failure or incorrect operation of the searchlight, which may damage the equipment or cause personal injury.

4 - Unpacking and Installation Instructions

The following instructions should be read and fully understood prior to installing the equipment to ensure that the correct procedures are followed and all safety precautions are observed.

Note: If the equipment has been in storage for a considerable amount of time, it is advisable to conduct a routine maintenance check on all parts before installation.

Safety Precautions

This equipment should not be connected to an electrical supply before being installed. Installation procedures should be adhered to in order to ensure a safe working environment and reduce the risk of damage or personal injury.

Preparing the Mounting Position

Mark out and drill the fixing holes through the deck. If anti-vibration mounts are to be fitted, the fixing holes for the mounts should also be marked out and drilled. Prior to manoeuvring the searchlight into its' fixing position, the AV mounts should be fitted to the base. When in the desired position, bolt the searchlight firmly down. On an uneven surface it may be necessary to use a suitable sealant such as silicone, in order to ensure a weatherproofed joint.

5 - Electrical Installation

For safety purposes, only competent personnel should perform the electrical installation. All equipment should be installed to current Electrical Regulations and Standards.

In order to obtain the maximum light output from the searchlight, it is essential that the full operating voltage of the lamp fitted be applied to the lampholder contacts.

Method of Electrical Connection

- 1) Disconnect the supply before working on the electrical system;
- 2) The searchlight must be connected to a fused electrical supply, using suitably sized cable;
- 3) If the searchlight is located a considerable distance from the supply, provision must be made in the cable size in order to overcome the voltage drop. The following table should be used for indication purposes only:

The following table below indicates the maximum length of cable to be used for the supply cable, from the control panel to the searchlight:

Searchlight	115v 300w	240v 300w
Cable Size (mm ²)	Distance Max	Distance Max
1.5	57 MTRS	247 MTRS
2.5	93 MTRS	404 MTRS
4.0	147 MTRS	640 MTRS
6.0	229 MTRS	997 MTRS
10.0	384 MTRS	1869 MTRS

- 4) Whenever possible cable terminations should be made below deck and with approved terminal devices;
- 5) If a spare auxiliary fuse or circuit breaker is not available, one of the correct type and rating should be fitted and connected to a positive supply. It is advisable to locate a bus bar or main connection and avoid any direct connection to the supply;
- 6) For 110/220v AC products, the following colour coding system should be used for the customer supply cable:

Brown - Live
Blue - Negative
Green/Yellow - Earth

Note: This equipment must be earthed.

Installation Guidelines

A typical installation and connection routine for the VX330 RC 115/240v searchlight is as follows:

Referring to wiring diagram C23980, a 115/240v supply is fed to the junction box, which then provides a common feed to PSU which in turn supply's 24v back to the control panel to supply the focus motor and remote wireless unit.

Pre-wired cables

3 meters of 3 core 2.5mm cable from the searchlight to junction box.

3 meters of 12 core 0.5mm cable from the searchlight to the junction box.

3 meters of 12 core 0.5mm cable from the junction box to the joystick control panel.

3 meters of 3 core 1.5mm cable from the junction box to the mains supply.

It may be necessary for the customer to provide a suitable junction box if the cable lengths required exceed the standard length supplied. If required please contact FSL for further assistance regarding this matter.

When the light is in operation the output from the PSU should be 20v at 15 amps.

Basic Operation

When the searchlight is turned on an 115v/240v supply is fed to the PSU. This in turn generates a sufficient voltage to the ignitor in order that the ignition voltage is achieved and the Xenon lamp strikes.

After the lamp has lit, the PSU regulates the voltage through the ignitor so that the lamp operates within its design parameters.

Once the searchlight has been switched off allow approximately 30 seconds for the lamp to cool down before re-striking the lamp.

Optional Slave Panel Wiring

12 core 0.5mm² cable from the Slave Panel to the Junction Box.

NOTE both panels MUST NOT be operated simultaneously as this may damage the equipment

6 - Operating Instructions

This equipment is designed for use out of doors, in free air. Never place anything on, or cover the searchlight when in use as this may present a hazard.

The searchlight can be remotely positioned via the joystick control panel, with the facility for movement up, down, left and right.

The pan speed can be adjusted using the potentiometer mounted on the joystick panel. The movement increases from 2° to a maximum of 20°/sec when turned clockwise. The tilt speed runs at 10°/sec and cannot be adjusted.

The beam of the searchlight can be adjusted to give a variety of beam types. Using the yellow remote focus button on the joystick panel, the desired beam can be achieved for any particular application. The beam will move continuously through 'spot' to 'flood'. In order to fix the beam type; simply release the button at the desired position.

The heaters specified on this equipment are self-regulating and will shut off when they reach the dew point temperature.

Key Fob Operation

NOTE:- On start up (light on) key fob will not operate between 5 to 8 seconds due to power surge from the ignitor.

The searchlight has the additional feature of a wireless key fob, which allows the user to operate the light from a maximum distance of up to 30 metres. The key fob has an 8-way direction control and the facility to switch the light on/off. To activate the key fob simply hold down the on/off switch for a few seconds, while powering up junction box. The searchlight can have a maximum of four key fobs all working independently from each other. The above procedure must be repeated when adding additional key fobs. When not in use the key fob will go into a sleep mode.

There is the option for added slave panels, the slave panel has all the features of the main panel i.e. joystick, speed control focus and on/off.

NOTE both panels MUST NOT be operated simultaneously as this may damage the equipment

This product should not be used for any purpose other than for which it was designed. Any modifications to the product should not be undertaken without consulting the manufacturer.

Setting to Work

Safe service in use necessitates the strict observance of the following precautions.

- Any article fabricated from quartz or glass is inherently fragile and care should therefore be taken, at all times, when handling lamps;
- Eye protection must be worn when handling lamps that have been removed from their packaging materials. The protective sleeve should not be removed from the lamp for safety reasons, as there is a remote possibility of the lamp shattering violently, especially if it is subjected to mechanical shock or vibration;
- Ensure that the power rating of the lamp to be fitted is suitable for the lamp house and power supply equipment;
- Always isolate the equipment from the supply before inserting a lamp;
- Before inserting the lamp ensure that all contacts are clean. Contacts must be renewed at the slightest sign of corrosion. Sanding or filing down corroded areas is not recommended as this will only make the conducting surface between the pin and lamp holder smaller, thus causing the lamp to overheat;
- Do not twist or bend the fused quartz bulb when fitting the lamp as mechanical stresses MUST be avoided;
- When inserting or removing a lamp, always hold it securely by its' base in order to prevent breakage between base and bulb;
- The lamp holder must not exercise mechanical tensions on the lamp, neither during insertion or operation. Contacts must not discolour during use;
- For safety reasons, the lamp should be replaced once it has reached its' average life, and not later than 1.25 times the stated life. With continuing use the risk of the lamp exploding increases due to alterations within the quartz;
- Before the protective sleeve is removed, suitable protection must be worn i.e. face mask and gloves with wrist protection;
- Never touch the quartz bulb with bare hands, as fingerprints will make the glass cloudy and cause a severe loss of light. This may also cause recrystallisation and thus weaken the bulb material. Should the bulb be inadvertently touched, remove fingerprints with methylated spirit and a clean, soft paper towel. The bulb should then be wiped with distilled water. NOTE: ALWAYS WEAR MASK AND GLOVES DURING CLEANING);
- All packaging and the protective sleeve must be retained for re-use. Whenever removing a lamp, the protective sleeve must always be used for safety reasons;

In all circumstances the lamp manufacturer's data should be referred to when dealing with lamps.

When fitting the lamp:

- Always isolate the equipment from the supply when inserting a lamp;
- Ensure the circuit is suitably fused;
- Ensure the lamp is of the correct power rating and type;
- Check the lampholder is in a good dry condition. Never allow water to collect in the lamp fitting or come into contact with the lamp.

To fit the lamp:

- Loosen all the socket screws on the front of the searchlight, remove the bezel and glass and store in a safe place;
- Fit the rear lampholder lead over the thread of the lamp and then screw into the rear PTFE lampholder;
- Connect the front lead to the lamp and secure in place with the knurled nut;
- Replace the front bezel and glass, ensuring the socket screws are securely fastened.

Testing

Upon correct installation and connection to an electrical supply, the equipment can be tested in order to ensure its' correct performance. A competent person with some knowledge of electrical equipment must carry out this work.

Equipment required: Multi-meter with leads
 Ammeter

Using the equation $P=VI$, the approximate power output of the equipment can be calculated in the following way:

- Using the multi-meter, take a voltage reading from the terminal block inside the searchlight;
- Using the ammeter, take an amps reading from the live cable to the lamp;
- Multiply these figures together to give an approximate wattage (Power output).

For example:

Using a 300w xenon lamp:

Voltage reading = 20v; Amps reading = 15 amps

Therefore, Wattage = $20 \times 15 = 300$ watts

7- Fault Finding

All fault finding must be conducted by a competent person or qualified Electrical Engineer.

Please refer to the following table for the trouble-shooting of Xenon lamps.

Fault	Cause	Remedy
<ul style="list-style-type: none"> ■ Wrong Polarity 	<ul style="list-style-type: none"> ■ Lamp incorrectly fitted ■ Faulty wiring 	<ul style="list-style-type: none"> ■ Anode (large electrode) must always be on top in vertical burning position ■ Check polarity, transpose connections if necessary
<ul style="list-style-type: none"> ■ Cap overheated ■ Cap temperature above 230°C 	<ul style="list-style-type: none"> ■ Faulty contacts ■ Cooling equipment defective 	<ul style="list-style-type: none"> ■ Check terminals, tighten or renew ■ Check cooling equipment and replace if necessary
<ul style="list-style-type: none"> ■ Arc unsteady 	<ul style="list-style-type: none"> ■ Lamp operated outside current control range ■ Magnetic stabilisation for horizontal operation defective 	<ul style="list-style-type: none"> ■ Correct current setting ■ Check magnetic stabilisation
<ul style="list-style-type: none"> ■ Bulb draws in air 	<ul style="list-style-type: none"> ■ Crack in graded seal caused by overheated cap ■ Maximum cap temperature 230°C 	<ul style="list-style-type: none"> ■ Check terminals - tighten or renew
<ul style="list-style-type: none"> ■ Glass erosion on fused quartz bulb 	<ul style="list-style-type: none"> ■ Lamp operated outside current control range ■ Lamp service life exceeded 	<ul style="list-style-type: none"> ■ Correct current setting ■ Check meter
<ul style="list-style-type: none"> ■ Electrodes damaged ■ Premature blackening 	<ul style="list-style-type: none"> ■ Current ripple too high ■ Auxiliary mirror incorrectly adjusted 	<ul style="list-style-type: none"> ■ Have power supply inspected ■ Adjust auxiliary mirror
<ul style="list-style-type: none"> ■ Asymmetrical blackening of lamp (in horizontal burning position) 	<ul style="list-style-type: none"> ■ Lamp operated too long in same position 	<ul style="list-style-type: none"> ■ Turn lamp through 180° after half service life

Failure of Lamp to ignite

In the event of the lamp failing to light the following steps should be taken:

- 1) Check that the supply is connected to the input of the PSU and check all connections as per the wiring diagram. On operation if the lamp does not light, switch off supply and check all fuses;
- 2) Check the PSU enclosure. On your command get an operator to switch on the light for approximately 2 seconds. During this time listen for any noise (cracking or hissing) coming from within. If this arcing is heard switch off the supply. Remove the searchlight body to expose the two supply leads from the PSU enclosure to the lamp. Using a dry cloth wipe these leads to remove any dust, moisture or condensation that may have formed around the inside of the barrel. Replace the body, ensuring the screws are securely fastened, and perform the check again, listening for the cracking. If the lamp still fails to ignite, switch off at the supply and replace the lamp in accordance with the safety procedures within the manual and the manufacturer information.

Any further tests to be carried out with regards to lamp failure must be conducted by a competent electrical engineer and should not be carried out in an explosive atmosphere.

- 3) Before a xenon lamp will ignite, the electrically insulated gas between the electrodes must be ionised. This is done by the ignitor which produces a high frequency voltage (up to 14,000 volts or higher). Switching the lamp on activates the ignitor. A cracking or hissing noise should be heard. The ignitor is housed within the searchlight head. If found to be faulty return to Francis Searchlights Ltd for evaluation and repair.

Failure of Remote Focus

Causes:

- 1) Power not supplied;
- 2) Faulty connections;
- 3) Failed motor;

Remedy:

- 1) Check voltage at supply and the output from the control board in the junction box. If no supply present fault is at customer supply. If power is present see remedy 2;
- 2) Check all wiring connections on motor and terminal block in accordance with the wiring diagram. If found to be correct, see remedy 3;
- 3) Remove the focus motor and apply 24v DC directly across terminals. If motor does not rotate the unit has failed. A new focus motor should be fitted to the assembly.

8 - Maintenance and Servicing

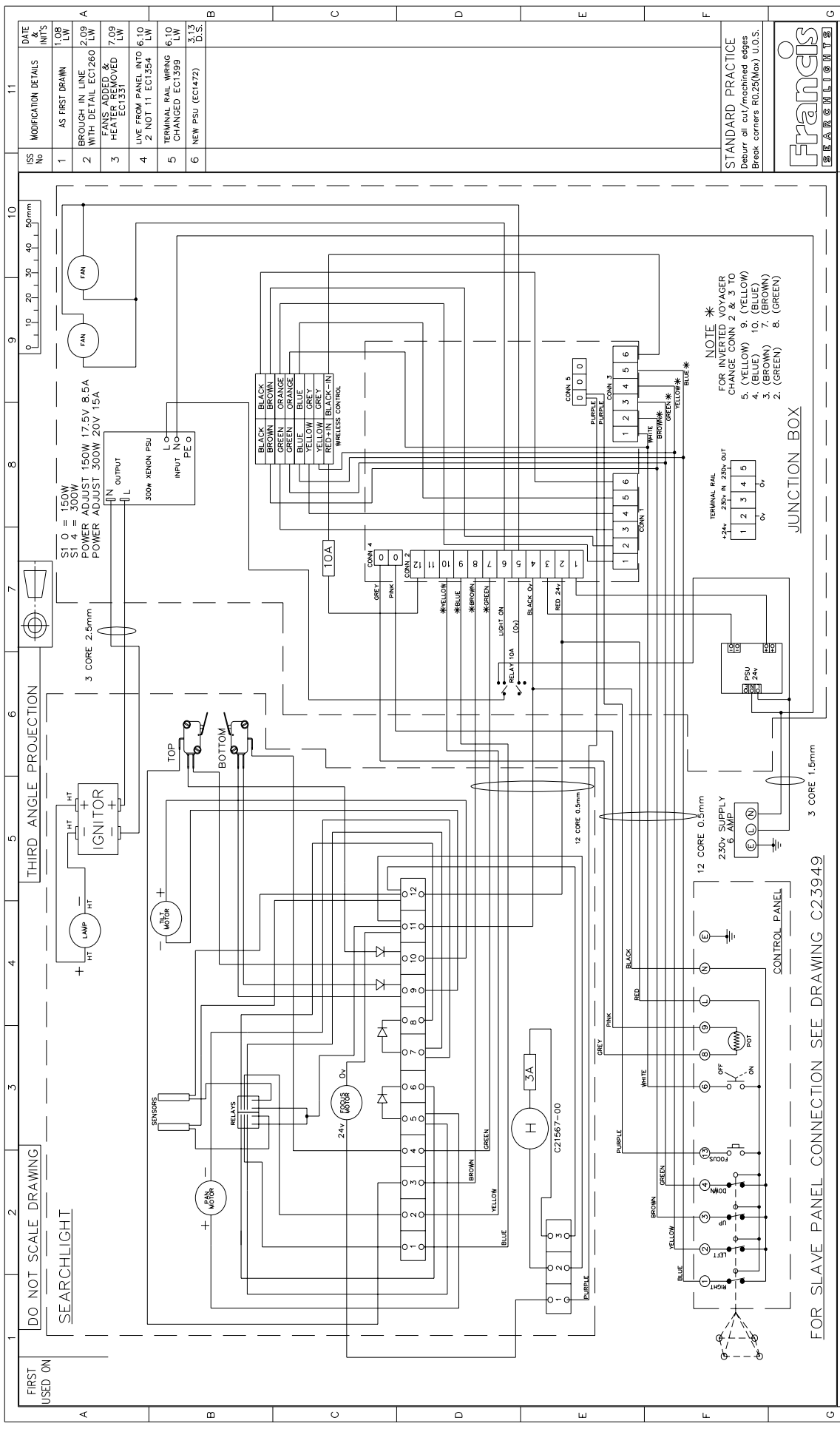
In order to prolong the service life and performance of your searchlight, the following maintenance guidelines are recommended:

- Maintenance checks should be conducted before very voyage or at least every three months;
- Before checking, disconnect the equipment from the supply;
- Visually inspect the condition of the equipment;
- Any major or minor structural damage should be rectified immediately in order to reduce sympathetic wear;
- After inspection it may be necessary to clean the inside of the searchlight. The following procedure should be adhered to:
 - Remove the front bezel;
 - Clean the front glass inside and out using a proprietary glass cleaner or metal polish;
 - Clean the reflector if required;
 - Ensure that the lampholder is free from corrosion or other damage;
 - Check earthing point for conductivity;
- It is advisable to check all seals and gaskets for signs of degradation. Renew if necessary;
- The searchlight is fitted with a breather unit. This ensures a steady airflow in order to prevent any vacuum forming within the barrel.
- Upon completing all maintenance requirements the searchlight should be tested for full working order (approximately 20 minutes).

If in any doubt as to the correct servicing procedures to adopt please contact your distributor/agent or the manufacturer who will be able to advise the best course of action for your product.

9 - Wiring Diagrams and General Assembly

Drawing Number	Description
C23980	RC Wiring Diagram HV Variable Speed
C24684	Wiring Diagram HV Variable Speed (Without Wireless Control)
C23949	Slave Panel Wiring Diagram
C24497	<u>Multiple</u> Slave Panel Wiring Diagram
A2645	VX330RC H.V Variable Speed General Assembly Drawing
C23991	Control Panel
C23976	Control Panel Main Slave & Slave
C24685	Junction Box (Without Wireless Control)
C24149	Junction Box
	Junction Box Dimensions



ISS No	MODIFICATION DETAILS	DATE INIT'S
1	AS FIRST DRAWN	1.08 LW
2	BROUGH IN LINE WITH DETAIL ECI260	2.09 LW
3	FANS, ADDED & HEATER REMOVED ECI331	7.09 LW
4	LIVE FROM PANEL INTO 2 NOT 11 ECI354	6.10 LW
5	TERMINAL RAIL WIRING CHANGED ECI359	3.13 D.S.
6	NEW PSU (ECI472)	

STANDARD PRACTICE
Debur all cut/machined edges
Break corners R0.25(Max) U.O.S.



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PART No./DRG No. C23980
SHT 1

DO NOT SCALE DRAWING
SEARCHLIGHT

THIRD ANGLE PROJECTION

FOR SLAVE PANEL CONNECTION SEE DRAWING C23949

FRANCIS SEARCHLIGHTS LIMITED · BOLTON · BL2 2HJ
Sand Casting: To ISO 8062 CT10
Die Casting: To ISO 8062 CT8
Hole centres & posns: ±

FINISH MATERIAL DESCRIPTION
3 CORE 1.5mm

3 CORE 0.5mm

12 CORE 0.5mm

12 CORE 0.5mm

3 CORE 1.5mm

3 CORE 0.5mm

3 CORE 0.5mm

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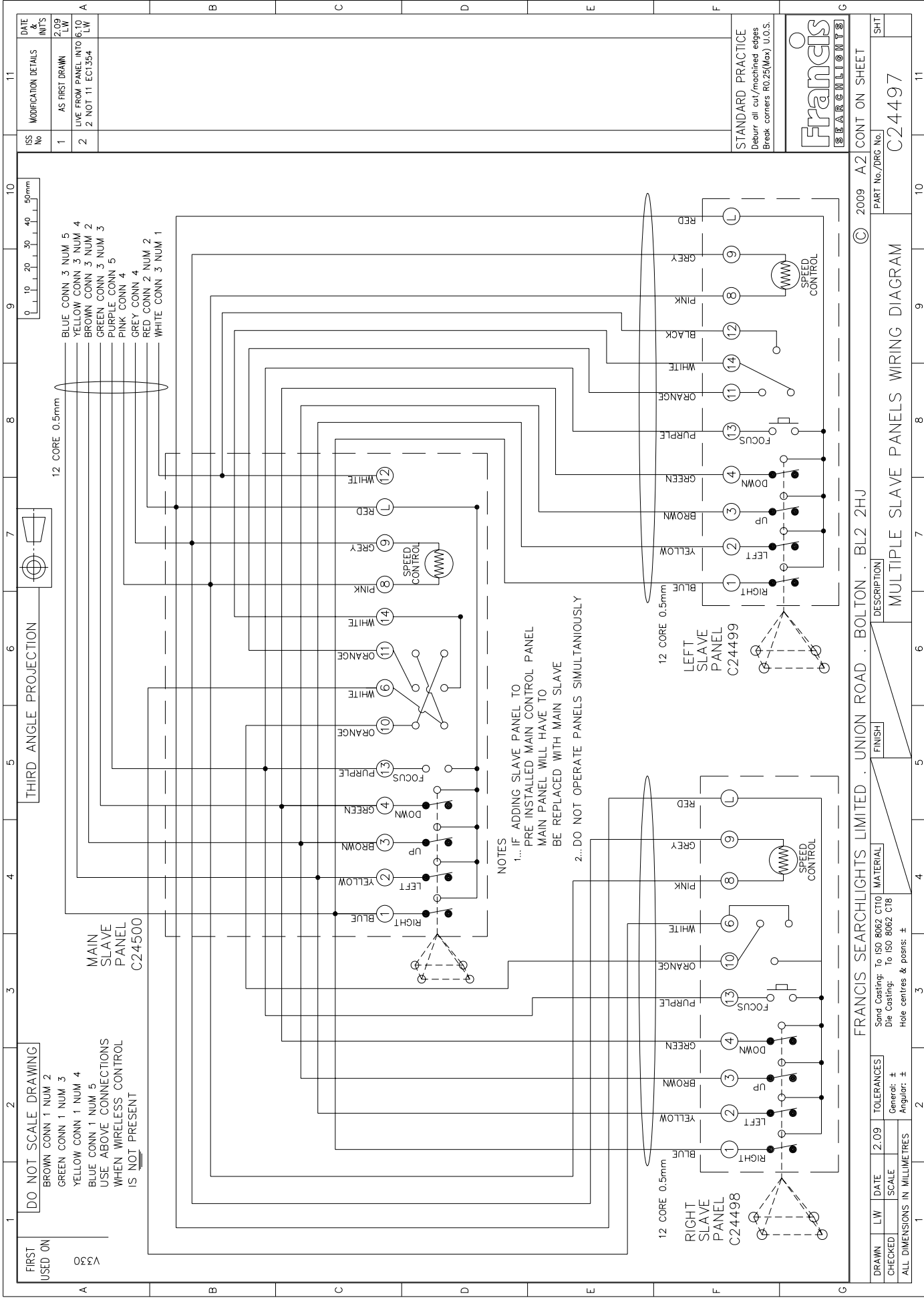
3 CORE 0.5mm

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ISS No	MODIFICATION DETAILS	DATE INTS
1	AS FIRST DRAWN	2.09 LW
2	LIVE FROM PANEL INTO 6:10	2 NOT 11 EC1354 LW

STANDARD PRACTICE Debur all cut/machined edges Break corners R0.25(Max) U.C.S.	
Francis SEARCHLIGHTS	

© 2009 A2 CONT ON SHEET
PART No./DRG No. C24497
SHT

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	DESCRIPTION
FINISH	MATERIAL
Send Casting: To ISO 8062 CT10	Die Casting: To ISO 8062 CT8
TOLERANCES	General: ±
DATE 2.09	Angular: ±
SCALE	Hole centres & posns: ±
DRAWN LW	ALL DIMENSIONS IN MILLIMETRES

ISS No	1	DATE & INITS	4.07 LW
MODIFICATION DETAILS	AS FIRST DRAWN		

STANDARD PRACTICE	Deburr all cut/machined edges Break corners R0.25(Max) U.O.S.		
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FRANCIS	SEARCHLIGHTS		
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DESCRIPTION	VOYAGER 330 HV & LV GA
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FINISH	
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MATERIAL	
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TOLERANCES	4.07
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General	±
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Angular	±
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ALL DIMENSIONS IN MILLIMETRES	
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FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	
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Some Casting: To ISO 8062 CT10	
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Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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DO NOT SCALE DRAWING	
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THIRD ANGLE PROJECTION	
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Scale	0 10 20 30 40 50mm
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PART No./DRG No.	A2645
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DESCRIPTION	VOYAGER 330 HV & LV GA
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MATERIAL	
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TOLERANCES	4.07
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General	±
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Angular	±
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Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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DO NOT SCALE DRAWING	
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THIRD ANGLE PROJECTION	
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TOLERANCES	4.07
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General	±
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ALL DIMENSIONS IN MILLIMETRES	
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Die Casting: To ISO 8062 C18	
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THIRD ANGLE PROJECTION	
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ALL DIMENSIONS IN MILLIMETRES	
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Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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THIRD ANGLE PROJECTION	
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DESCRIPTION	VOYAGER 330 HV & LV GA
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FINISH	
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MATERIAL	
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TOLERANCES	4.07
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General	±
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ALL DIMENSIONS IN MILLIMETRES	
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Die Casting: To ISO 8062 C18	
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DESCRIPTION	VOYAGER 330 HV & LV GA
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FINISH	
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MATERIAL	
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TOLERANCES	4.07
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General	±
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Angular	±
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ALL DIMENSIONS IN MILLIMETRES	
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FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	
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Some Casting: To ISO 8062 CT10	
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Scale	0 10 20 30 40 50mm
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SEARCHLIGHTS	
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DESCRIPTION	VOYAGER 330 HV & LV GA
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FINISH	
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MATERIAL	
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TOLERANCES	4.07
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General	±
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Angular	±
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ALL DIMENSIONS IN MILLIMETRES	
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Some Casting: To ISO 8062 CT10	
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Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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THIRD ANGLE PROJECTION	
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Scale	0 10 20 30 40 50mm
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FRANCIS	
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SEARCHLIGHTS	
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CONT ON SHEET	2007 A2
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PART No./DRG No.	A2645
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DESCRIPTION	VOYAGER 330 HV & LV GA
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FINISH	
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MATERIAL	
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TOLERANCES	4.07
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General	±
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Angular	±
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ALL DIMENSIONS IN MILLIMETRES	
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FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	
--	--

Some Casting: To ISO 8062 CT10	
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Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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DO NOT SCALE DRAWING	
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THIRD ANGLE PROJECTION	
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Scale	0 10 20 30 40 50mm
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FRANCIS	
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SEARCHLIGHTS	
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CONT ON SHEET	2007 A2
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PART No./DRG No.	A2645
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DESCRIPTION	VOYAGER 330 HV & LV GA
-------------	------------------------

FINISH	
--------	--

MATERIAL	
----------	--

TOLERANCES	4.07
------------	------

General	±
---------	---

Angular	±
---------	---

ALL DIMENSIONS IN MILLIMETRES	
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FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	
--	--

Some Casting: To ISO 8062 CT10	
--------------------------------	--

Die Casting: To ISO 8062 C18	
------------------------------	--

Hole centres & posns: ±	
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DO NOT SCALE DRAWING	
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THIRD ANGLE PROJECTION	
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Scale	0 10 20 30 40 50mm
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FRANCIS	
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SEARCHLIGHTS	
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CONT ON SHEET	2007 A2
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PART No./DRG No.	A2645
------------------	-------

DESCRIPTION	VOYAGER 330 HV & LV GA
-------------	------------------------

FINISH	
--------	--

MATERIAL	
----------	--

TOLERANCES	4.07
------------	------

General	±
---------	---

Angular	±
---------	---

ALL DIMENSIONS IN MILLIMETRES	
-------------------------------	--

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU	
--	--

Some Casting: To ISO 8062 CT10	
--------------------------------	--

Die Casting: To ISO 8062 C18	
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Hole centres & posns: ±	
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DO NOT SCALE DRAWING	
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THIRD ANGLE PROJECTION	
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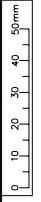
Scale	0 10 20 30 40 50mm
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FRANCIS	
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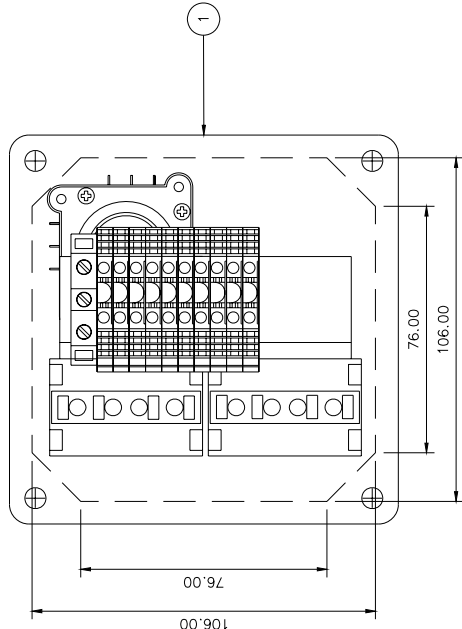
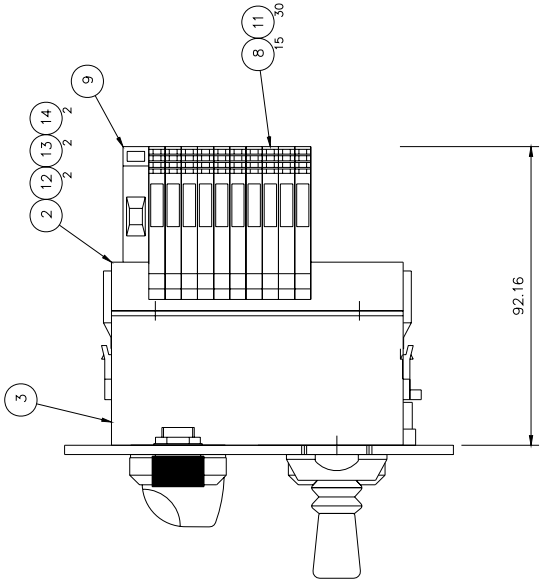
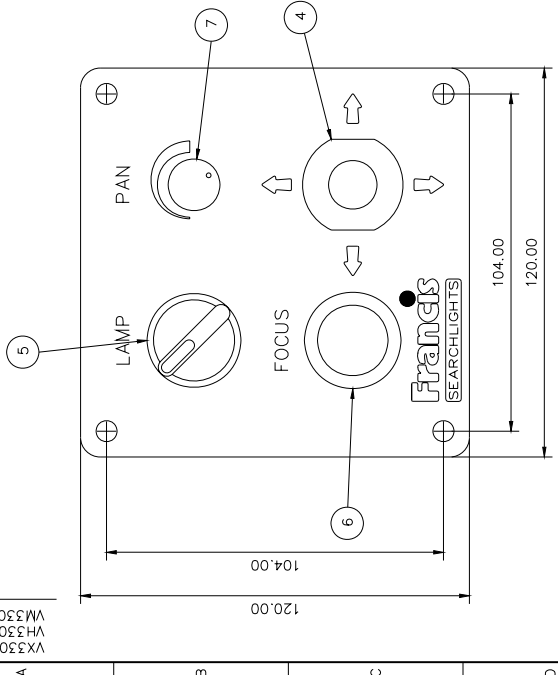
SEARCHLIGHTS	
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DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION



ISS No	MODIFICATION DETAILS	DATE & INITS
1	AS FIRST DRAWN	8.07 LW



ITEM PART No.	DRG No.	DESCRIPTION	QTY
1	C23990	CONTROL PANEL	1
2	C23992	DIN RAIL	1
3	C23970	DIN RAIL BRACKET	1
4	C14444	JOYSTICK	1
5	C14143	SELECTOR SWITCH 10 AMP	1
6	C14142	PUSH BUTTON	1
7	C24078	PAN SWITCH	1
8	C14400	TERMINAL	10
9	C14379	EARTH TERMINAL	1
10	C14139	END COVER	1
11	C15411	CABLE MARKERS	20
12	C13351	M5 x 10 HEX HD SCREW	2
13	C09231	M5 S/C SPRING WASHER	2
14	C08352	M5 FULL NUT	2

STANDARD PRACTICE
Debur all cut/machined edges
Break corners R0.25(Max) U.O.S.



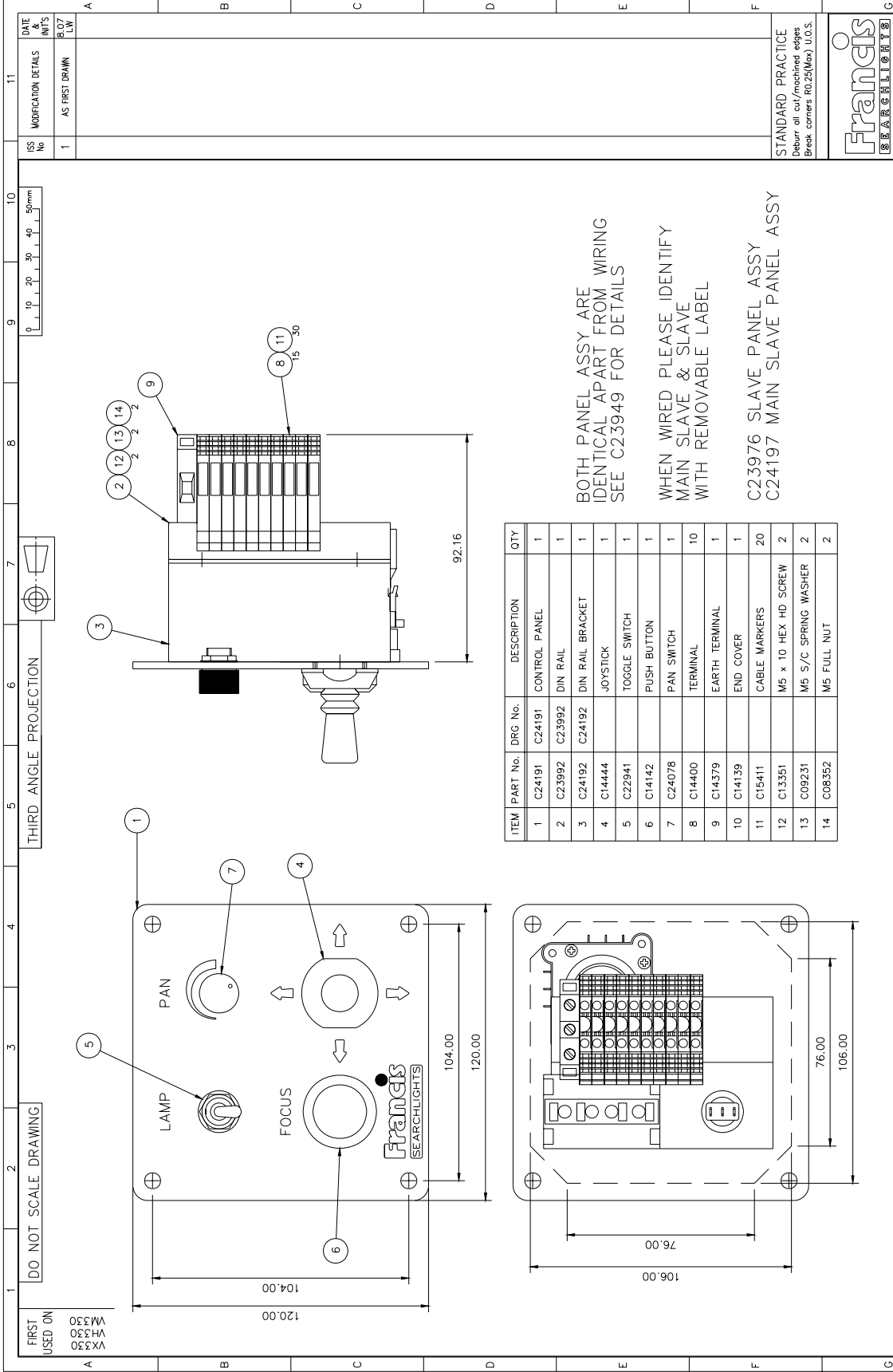
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PART No./DRG No. C23991
SHT 1

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU

DRAWN	LW	DATE	B.07	TOLERANCES	FINISH	MATERIAL
CHECKED				General: ± 0.2 Angular: ±		To ISO 8062 C110 To ISO 8062 C18
ALL DIMENSIONS IN MILLIMETRES						

DESCRIPTION CONTROL PANEL ASSEMBLY

11 10 9 8 7 6 5 4 3 2 1



ITEM	PART No.	DRG No.	DESCRIPTION	QTY
1	C24191	C24191	CONTROL PANEL	1
2	C23992	C23992	DIN RAIL	1
3	C24192	C24192	DIN RAIL BRACKET	1
4	C14444		JOYSTICK	1
5	C22941		TOGGLE SWITCH	1
6	C14142		PUSH BUTTON	1
7	C24078		PAN SWITCH	1
8	C14400		TERMINAL	10
9	C14379		EARTH TERMINAL	1
10	C14139		END COVER	1
11	C15411		CABLE MARKERS	20
12	C13351		M5 x 10 HEX HD SCREW	2
13	C09231		M5 S/C SPRING WASHER	2
14	C08352		M5 FULL NUT	2

BOTH PANEL ASSY ARE IDENTICAL APART FROM WIRING SEE C23949 FOR DETAILS

WHEN WIRED PLEASE IDENTIFY MAIN SLAVE & SLAVE WITH REMOVABLE LABEL

C23976 SLAVE PANEL ASSY
C24197 MAIN SLAVE PANEL ASSY

DATE & INTS	8.07	DATE	11
MODIFICATION DETAILS	AS FIRST DRAWN	SS No	1
LW			

STANDARD PRACTICE
Deburr all cut/machined edges
Break corners R0.25(Max) U.I.O.S.



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DRAWN	LW	DATE	8.07
CHECKED	SCALE	TOLERANCES	General: ± 0.2
ALL DIMENSIONS IN MILLIMETRES	1:1	Generals: ± 0.2	Angular: ±
FINISH	DESCRIPTION	PART No./DRG No.	C23976 1
SLAVE PANEL ASSEMBLY		SHT	11

FRANCIS SEARCHLIGHTS LIMITED . UNION ROAD . BOLTON . BL2 2HU

Sand Casting: To ISO 8062 CT10
Die Casting: To ISO 8062 C16
Hole centres & posns: ±

DO NOT SCALE DRAWING

FIRST USED ON
VX330
VM330

ISS No	MODIFICATION DETAILS	DATE IN T'S
1	AS FIRST DRAWN	2.08 L.W.
2	NEW PSU (EC1472)	3.13 D.S.

50mm

IN 2 POSN'S

49 46 37 31 30

3 3 3 3 3

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

FIRST USED ON

VOYAGER 300W A2646/49

FOR WIRING USE ITEMS

27 28 29 23

IN 4 POSN'S

40 18 20 21 22

50 48 47 18 41 47 48

IN 4 POSN'S

19 20 21 22

IN 2 POSN'S

49 46 37 31 30

3 3 3 3 3

THIS WAY UP

WARNING

POS'N ON LID

POS'N ON LID CENTRAL NEAR THE GLANDS

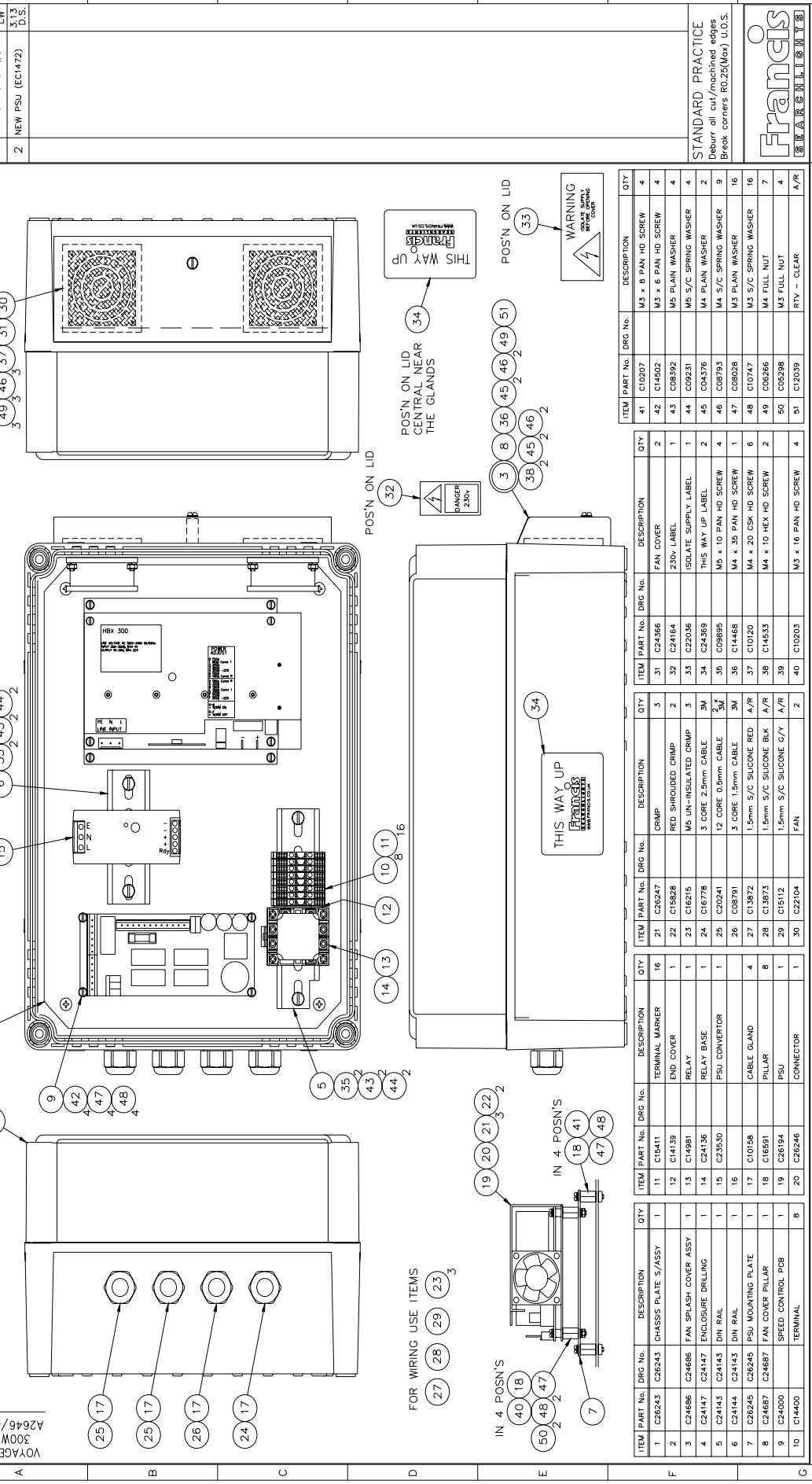
POS'N ON LID

WARNING

POS'N ON LID

WARNING

POS'N ON LID



ITEM PART No.	DRG No.	DESCRIPTION	QTY	ITEM PART No.	DRG No.	DESCRIPTION	QTY	ITEM PART No.	DRG No.	DESCRIPTION	QTY	ITEM PART No.	DRG No.	DESCRIPTION	QTY
1	C26243	CHASSIS PLATE S/ASSY	1	21	C26247	GRIMP	3	31	C24366	FAN COVER	2	41	C10207	M5 x 8 PAN HD SCREW	4
2	C24686	FAN SPLASH COVER ASSY	1	22	C18228	RED SHROUDED GRIMP	2	32	C24164	230V LABEL	1	42	C14602	M5 x 6 PAN HD SCREW	4
3	C24447	ENCLOSURE DRILLING	1	23	C16215	M5 UN-INSULATED GRIMP	3	33	C22036	ISOLATE SUPPLY LABEL	1	43	C08392	M5 PLAIN WASHER	4
4	C24143	DIN RAIL	1	24	C16778	3 CORE 2.5mm CABLE	3M	34	C24369	THIS WAY UP LABEL	2	44	C09231	M5 S/C SPRING WASHER	4
5	C24143	DIN RAIL	1	25	C20241	1/2 CORE 0.5mm CABLE	2	35	C09895	M5 x 10 PAN HD SCREW	4	45	C04376	M4 PLAIN WASHER	2
6	C24144	DIN RAIL	1	26	C08791	3 CORE 1.5mm CABLE	3M	36	C14468	M4 x 35 PAN HD SCREW	1	46	C08793	M4 S/C SPRING WASHER	9
7	C26245	PSU MOUNTING PLATE	4	27	C18772	1.5mm S/C SILICONE RED	A/R	37	C10120	M4 x 20 CSK HD SCREW	6	47	C08028	M3 PLAIN WASHER	16
8	C24687	FAN COVER PILLAR	8	28	C18773	1.5mm S/C SILICONE BLK	A/R	38	C14533	M4 x 10 HEX HD SCREW	2	48	C10747	M3 S/C SPRING WASHER	16
9	C24000	SPEED CONTROL PCB	1	29	C18112	1.5mm S/C SILICONE G/Y	A/R	39	C05286	M4 FULL NUT	4	49	C05286	M4 FULL NUT	4
10	C14400	TERMINAL	8	30	C22104	FAN	2	40	C10203	M5 x 16 PAN HD SCREW	4	50	C05288	M4 FULL NUT	4
															A/R

ITEM PART No.	DRG No.	DESCRIPTION	QTY	ITEM PART No.	DRG No.	DESCRIPTION	QTY
11	C16411	TERMINAL MARKER	16	41	C10207	M5 x 8 PAN HD SCREW	4
12	C14139	END COVER	1	42	C14602	M5 x 6 PAN HD SCREW	4
13	C14981	RELAY	1	43	C08392	M5 PLAIN WASHER	4
14	C24136	RELAY BASE	1	44	C09231	M5 S/C SPRING WASHER	4
15	C23530	PSU CONVERTOR	1	45	C04376	M4 PLAIN WASHER	2
16	C24143	DIN RAIL	1	46	C08793	M4 S/C SPRING WASHER	9
17	C10158	CABLE GLAND	4	47	C08028	M3 PLAIN WASHER	16
18	C16591	PILLAR	8	48	C10747	M3 S/C SPRING WASHER	16
19	C26194	PSU	1	49	C05286	M4 FULL NUT	4
20	C26246	CONNECTOR	1	50	C05288	M4 FULL NUT	4
				51	C12039	RIVY - CLEAR	A/R

STANDARD PRACTICE
Debur all cut/machined edges
Break corners R0.25(Max) U.O.S.

Francis
SEARCHLIGHTS LIMITED

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DESCRIPTION (NO WIRELESS CONTROL)
PSU ENCLOSURE ASSY VX330 300W XENON

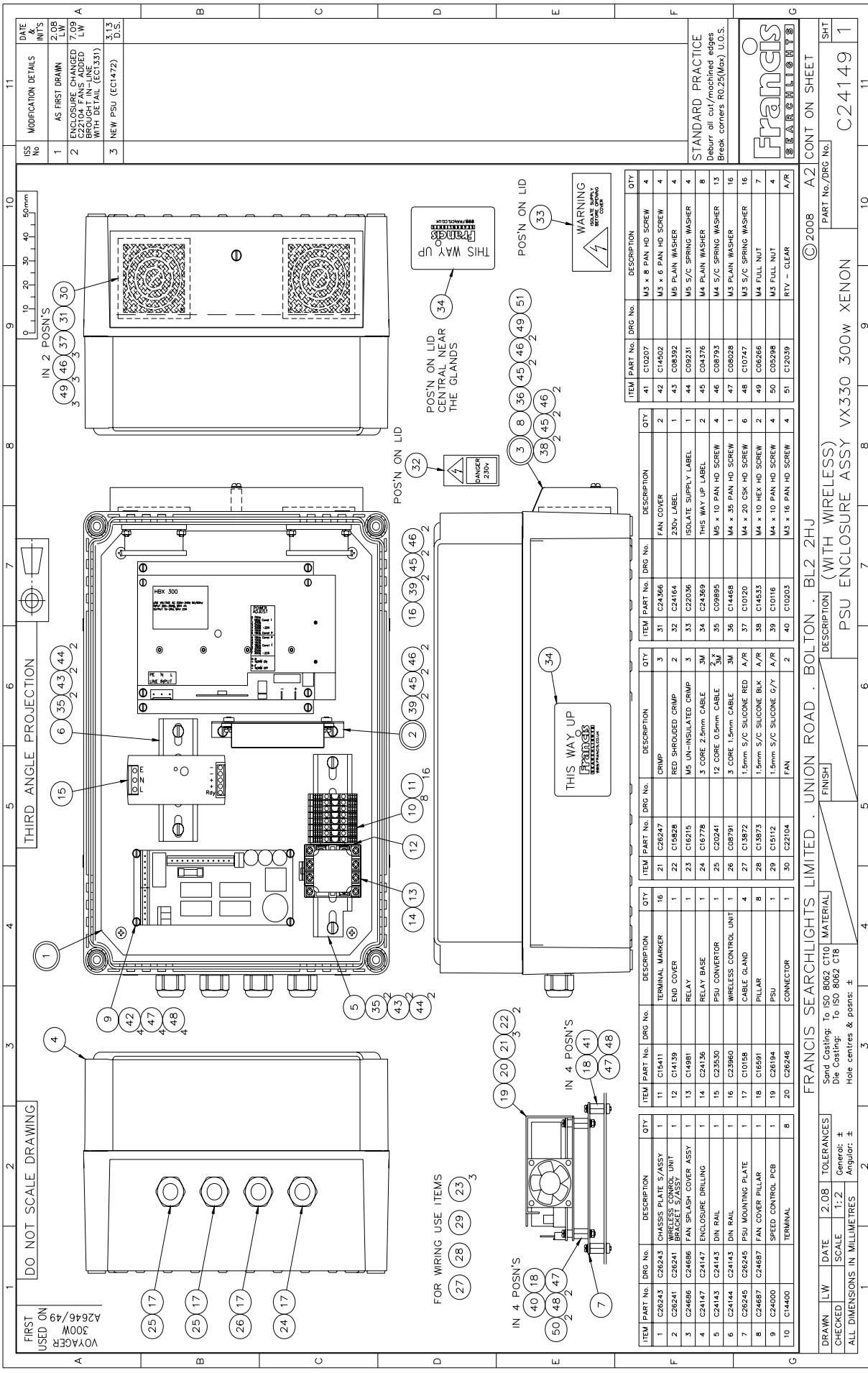
FINISH

DRAWN LW DATE 7.09 TOLERANCES
Sand Casting: To ISO 8062 CT10 MATERIAL
Die Casting: To ISO 8062 CT8

CHECKED SCALE 1:2 Generat: ±
ALL DIMENSIONS IN MILLIMETRES Angular: ±

PART No./DRG No. C24685 1

SHT 1



ISS No	MODIFICATION DETAILS	DATE & INT'S
1	AS FIRST DRAWN	2.08 LW
2	ENCLOSURE CHANGED FROM 300W TO 300W Brought in-line with detail (ECT1331)	7.09 LW
3	NEW PSU (EC1472)	3.13 D.S.

STANDARD PRACTICE
 Deburr all cut/machined edges
 Break corners R0.25(Max) U.O.S.

Francis
 富蘭西電器有限公司

ITEM PART No.	DRG No.	DESCRIPTION	QTY
41	C10207	M3 x 8 PAN HD SCREW	4
42	C14502	M3 x 6 PAN HD SCREW	4
43	C08392	M5 PLAIN WASHER	4
44	C09251	M5 S/C SPRING WASHER	4
45	C04376	M4 PLAIN WASHER	8
46	C08793	M4 S/C SPRING WASHER	13
47	C08828	M5 PLAIN WASHER	16
48	C10747	M3 S/C SPRING WASHER	16
49	C08286	M4 FULL NUT	7
50	C08298	M3 FULL NUT	4
51	C12039	RTV - CLEAR	4/R

ITEM PART No.	DRG No.	DESCRIPTION	QTY
31	C24666	FAN COVER	2
32	C24164	230V LABEL	1
33	C22036	ISOLATE SUPPLY LABEL	1
34	C24669	THIS WAY UP LABEL	2
35	C09895	M5 x 10 PAN HD SCREW	4
36	C14468	M4 x 35 PAN HD SCREW	1
37	C10120	M4 x 20 CSK HD SCREW	6
38	C14533	M4 x 10 HEX HD SCREW	2
39	C10116	M4 x 10 PAN HD SCREW	4
40	C10203	M3 x 16 PAN HD SCREW	4

ITEM PART No.	DRG No.	DESCRIPTION	QTY
21	C26247	CRIMP	3
22	C15828	RED SHROUDED CRIMP	2
23	C16215	M5 UN-INSULATED CRIMP	3
24	C16778	3 CORE 2.5mm CABLE	3M
25	C20241	12 CORE 0.5mm CABLE	2M
26	C08791	3 CORE 1.5mm CABLE	3M
27	C13872	1.5mm S/C SILICONE RED A/R	A/R
28	C13873	1.5mm S/C SILICONE BLK A/R	A/R
29	C15112	1.5mm S/C SILICONE G/Y	A/R
30	C22104	FAN	2

ITEM PART No.	DRG No.	DESCRIPTION	QTY
11	C18411	TERMINAL MARKER	16
12	C14139	END COVER	1
13	C14981	RELAY	1
14	C24136	PSU CONVERTOR	1
15	C23530	WIRELESS CONTROL UNIT	1
16	C23660	CABLE GLAND	4
17	C10158	PILLAR	8
18	C16591	PSU	1
19	C26194	CONNECTOR	1
20	C26246	CONNECTOR	1

ITEM PART No.	DRG No.	DESCRIPTION	QTY
1	C26243	CHASSIS PLATE S/ASSY	1
2	C26241	WIRELESS CONTROL UNIT BRACKET S/ASSY	1
3	C24686	FAN SPLASH COVER ASSY	1
4	C24147	ENCLOSURE DRILLING	1
5	C24143	DIN RAIL	1
6	C24144	DIN RAIL	1
7	C26245	PSU MOUNTING PLATE	1
8	C24687	FAN COVER PILLAR	1
9	C24000	SPEED CONTROL PCB	1
10	C14400	TERMINAL	8

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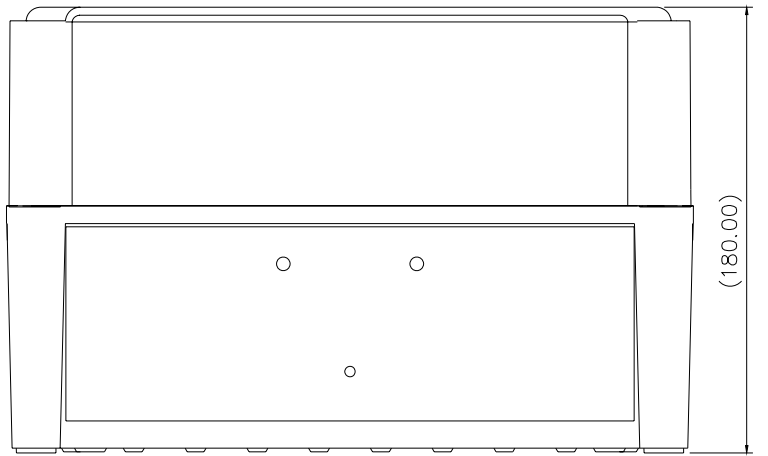
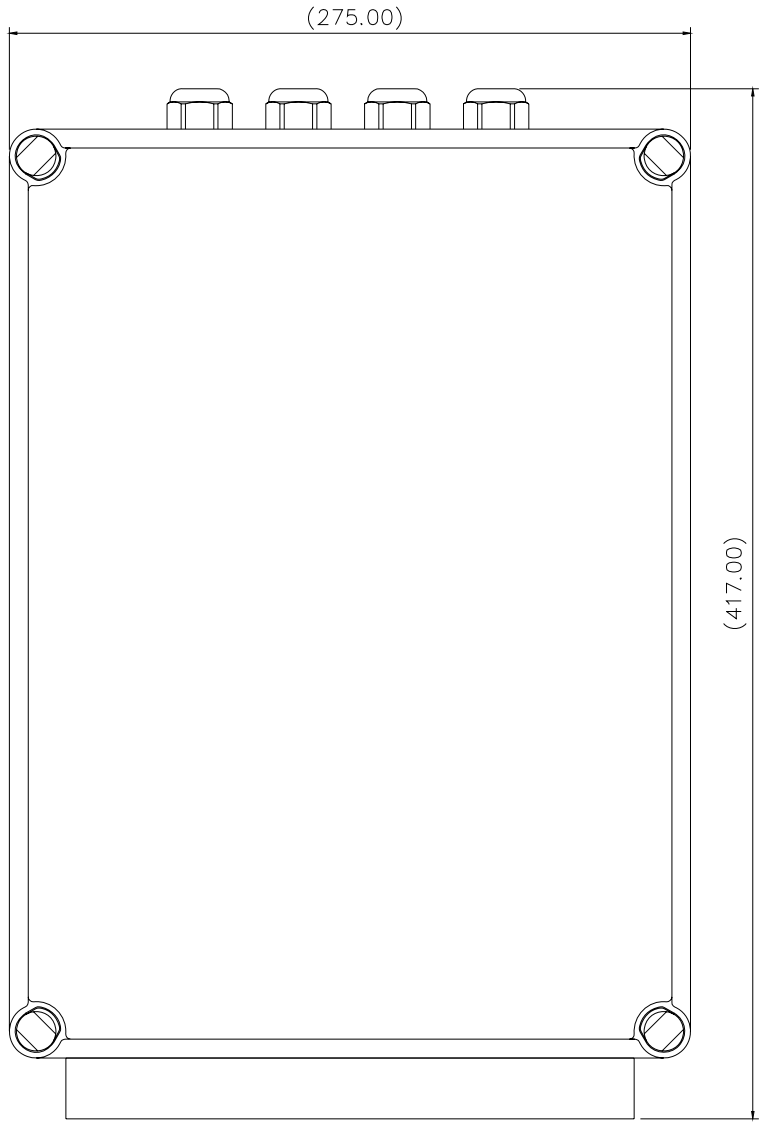
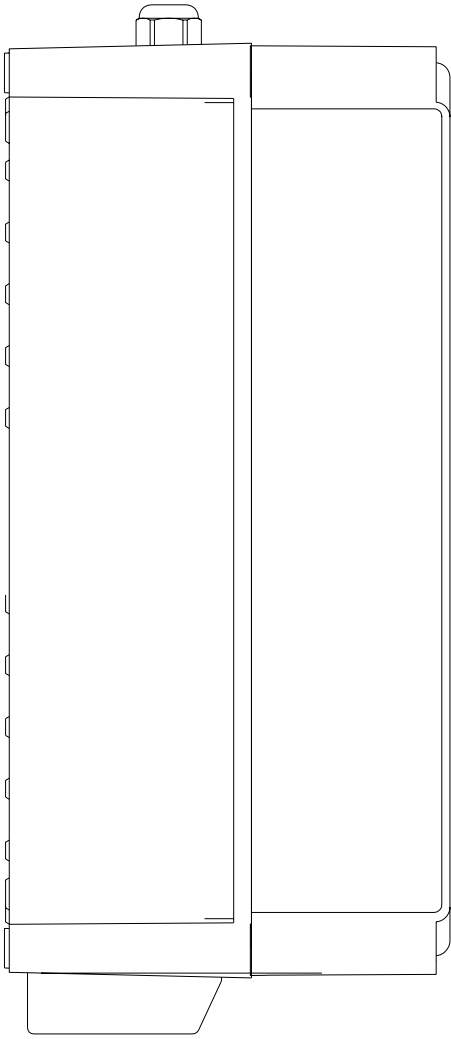
Part No./DRG No. C24149 1

PSU ENCLOSURE ASSY VX330 300W XENON

FINISH: Sand Casting: To ISO 8062 CT10 MATERIAL: Die Casting: To ISO 8062 CT8

TOLERANCES: General: ± Angular: ±

ALL DIMENSIONS IN MILLIMETRES



[Back To Top](#)

10 - Spare Parts List

The following spare parts can be ordered directly from the manufacturer:

Part Number	Description
D21908	300w Xenon Lamp
C23002-00	Switch 20A - On/Off
C14142-00	Switch – Focus
C14444-00	Joystick
C24078-00	Switch (Controller/Speed)
C23803-00	Front Glass
C08835-00	Front Glass Gasket
C16410-00	24v Motor – Focus and Tilt
C23802-00	Reflector
C22268-01	Breather Assy
C23960-00	Wireless Control Unit
C24089-01	Pan Motor Assy
C22382-00	Microswitch with lever
C24000-00	Speed Controller
C23805-00	Relay (Housing)
C23969-01	Sensor Block Assembly
C26194-00	PSU
C26195-00	Igniter
C22104-00	Fan (Junction Box)
C21567-00	Searchlight Heater
C23530-00	PSU Converter
C14981-00	Relay
C23961-01	Wireless Key Pad
C24079-00	Mounting Base Gasket

In order to prolong the life and performance of your product, we recommend that you only specify Francis Searchlights spare parts. This will ensure that any warranties on your equipment will not be invalidated.

When ordering spare parts please contact the Sales Department at Francis Searchlights Limited. Please quote searchlight model and serial number at all times. This will enable a fast response to your spares' requirements.



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