

## Constant Current Regulator Type XR400



### Application

The constant current regulator XR400 is a proven, robust and reliable regulator for the lighting intensity control of airfield ground lighting series circuits, for high, medium and low intensity systems.

First introduced in 1989 the XR400 has been continuously updated to meet the requirements for today's markets and to provide a reliable easy to use regulator suitable for most environments.

### Standard features

- 7 stages of brightness individually pre-settable
- Remote control by standard control switch, microprocessor controller or two wire system
- Accurate current control with fluctuating supply voltage compensation
- Current flowing back indication
- Ammeter for RMS output current
- Total hours run meter
- Variable load facility
- Fully set up and commissioned at the CCR

### Performance

Output current accuracy  $\pm 1\%$  with input voltage within  $+6\%$  and  $-10\%$  and load variation from rated load to 50% of rated load with up to 30% of lamp filaments failed.

Ambient temperature range  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  (natural ventilation, no fans)

Tapped output transformer for close matching of output rating to load and double wound for electrical isolation.

Two stage over current protection - First stage phases back current to zero then automatically ramps up to reset to correct output level: Second stage trips input isolator with manual reset.

User selectable (enable/disable) first stage phase back over current protection.

Output open circuit detection with manual reset trips input isolator within 100ms

7 local and remote multi-wire brightness stages or step-less 2-wire remote control.

Step-less remote control allows as many stages of brightness as required.

Local brightness selector switch on CCR front panel.

Each local and multi-wire brightness step is individually adjustable by internal potentiometer.

Local/standby/remote control selector switch on CCR front panel.

### Appropriate specifications

ICAO – Aerodrome Design Manual, Part 5, Para 3.2.1.4 to 3.2.1.6

CAP168 – Chapter 6, Para 12.5.1.

FAA – AC 150/5345-10E

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### Construction

A free standing, drip proof, ventilated cubicle, finished in light grey to RAL 7032, is provided with removable lifting eye bolts. Other finishes are available at customer's request. Cable connections are via the bottom gland plate, or to suit customer's special requirements. Electronic components are mounted in a withdrawable tray. Setting adjustments are accessible with the tray withdrawn to the maintenance position.

### Optional features

The following features are available by customer request:-

- 6.6A or 12A output
- 380/450V AC or 200/250V AC 50/60Hz input
- Internally mounted output circuit selectors, up to 5 simultaneous or 2 alternate circuits.
- Internally mounted output lighting arrestors
- Earth leakage detector
- Lamp filament failure detector
- 50V DC internal power supply for remote control
- Castors (add 130mm to overall height)
- Very low temperature operation
- Two wire remote brightness control through an externally mounted relay interface unit
- XR405 model, designed to comply with PSA (RAF) requirements
- FAA L-829 monitor

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### Brief Specifications

Type	Solid State Thyristor Control
Ratings available:	1.5, 2.7, 4, 5, 7.5, 10, 12.5, 15, 20, 25, 30kW
Input Voltage:	Single Phase 200-250V 50/60Hz (1.5-20kW)
	Single Phase 380-450V 50/60Hz (1.5-30kW)
Power Factor & Efficiency	Better than 90% at nominal input voltage with resistive matched load
Output Current:	6.6 Amp or 12A
Output Current Accuracy:	±1% of setting for supply variations +6% and -10% and loads from 0-100%
Response Time:	Less than 300mS (soft start on all settings)
Over Current Protection:	Automatic phase back and retry at 103% (selectable) De-energize at 105%
Open Circuit Protection:	De-energize within 100mS
Remote Control:	Selectable 24/48V DC multi-wire and 2 wire 0-10mA
Ventilation:	Natural air cooled
Temperature Range:	-20°C to +55°C (operating)
Humidity:	Max 95% Non-condensing
Altitude:	Zero to 2000m above sea level
Cabinet:	All steel construction to IP21 (IP41 available on request)

### Dimensions and Weights

Rating	Weight
2.7kW	180kg
4kW	185kg
5kW	190kg
7.5kW	210kg
10kW	220kg
12.5kW	240kg
15kW	300kg
20kW	320kg
25kW	360kg
30kW	370kg

All ratings housed in standard cabinet
Cabinet size: -
Height = 1250mm
Width = 575mm
Depth = 645mm
Shipping Volume = 0.71m <sup>3</sup>
Lifting lugs supplied as standard.
Add 60mm to height.
Castors supplied as option.
Add 130mm to height.