

X10282

Variable AC Voltage Regulators

CSR Module

Open / enclosed Regulator 6A, 10A, 15A, 110V & 230V
Complete Compact Phase Angle AC Regulator

CONTACT US:

☎ 0044 (0) 1704-516 501

✉ enquiries@united-automation.com

🌐 www.united-automation.com



KEY FEATURES:

- ✓ Available in 6, 10, and 15A ratings to suit various load demands.
- ✓ Compact design and user-friendly interface make installation quick and hassle-free.
- ✓ Option for simple installation with or without a heatsink, providing flexibility in setup.
- ✓ Utilises discrete components for high reliability and long-term performance.
- ✓ Cost-effective solution for power regulation needs.

Introducing the **CSR1 (110V) and CSR2 (230V) Power Regulators**, essential components for effective power management in various applications. These regulators are specifically designed to maintain and regulate the output voltage of inductive and resistance loads, ensuring a stable and reliable power supply for electronic devices.

The CSR power regulators are compact yet robust units capable of controlling single-phase mains driven loads of up to 15A. The CSR2 series comes in two configurations: open (type B) and enclosed (type E), with the enclosed version featuring its own integrated heatsink for efficient heat dissipation. With a fully adjustable output voltage ranging from zero to maximum, these regulators offer versatility and adaptability to meet diverse voltage requirements.

APPLICATIONS:

The CSR power regulators find widespread use in a range of resistive and inductive load applications, including:

- Heat lamps.
- Fans.
- Pumps.
- Other AC motor loads.

VARIANTS:

Enclosure Types:

- **Type B (Open):** Suitable for applications where the unit will be installed in an enclosure or control panel.
- **Type E (Enclosed):** Includes an integrated heatsink for improved thermal management and can be used standalone without additional cooling.

TECHNICAL SPECIFICATIONS

Specification	Unit	Product – CSR1 (110V) & CSR2 (230V)					
		6B	6E	10B	10E	15B	15E
Maximum on-state current, I _{max} (tab @ 70°C)	A rms	6	6	10	10	15	15
Peak one cycle surge currents	A	100	100	120	120	150	150
Off – leakage current (maximum)	mA	2					
Minimum holding load current	mA	30					
RMS Input voltage ±10% 50/60Hz	V	110 or 230					
Repetitive peak voltage (tab @ 70°C)	V	400					
Hysteresis	%	5					
Total conduction phase angle (typical)	°	0 to 160					
Controlled phase angle (typical)	°	30 to 160					
Power transfer at I _{max}	%	99					
Tab surface operating range	°C	0 to +75					
Storage temperature	°C	0 to +75					
Insulation withstand capability	V	1500 for 1 min.					
I ² t limiting values for fusing	A ² s	18	18	50	50	100	100
Mounting hole diameter (minimum)	mm	10.3					
Phase Operation	-	Single					

Note: For supply voltages above 120V or 240V AC, the controller may not turn off fully.

YOU MUST READ THIS BEFORE INSTALLATION

 ELECTRICAL SAFETY	 INSTALLATION REQUIREMENTS	 USER RESTRICTIONS	 USAGE ENVIRONMENT	 HOT SURFACE WARNING
WARNING: RISK OF ELECTRIC SHOCK Always consult the Installation & Maintenance Instructions before connecting this product to the power supply. WARNING: Disconnect Power Before Servicing Ensure the electrical supply is safely disconnected before connecting to any supply, load, or control terminals.	WARNING: Installation by Qualified Personnel Only This product must only be installed or fitted by a competent, qualified installer familiar with the relevant electrical standards and installation practices.	WARNING: Not for Use by Vulnerable Individuals This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or instructed by a person responsible for their safety.	WARNING: Industrial Use Only This is an industrial-grade product and is not intended for household use.	WARNING: Hot Surfaces On certain models, surfaces marked with this symbol become hot during use. Avoid direct contact and follow all thermal safety precautions.

CSR Module

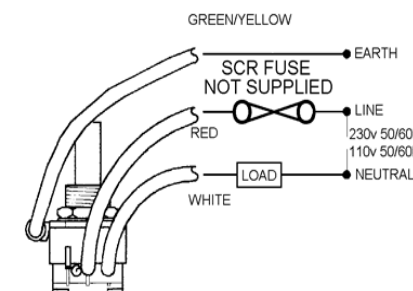
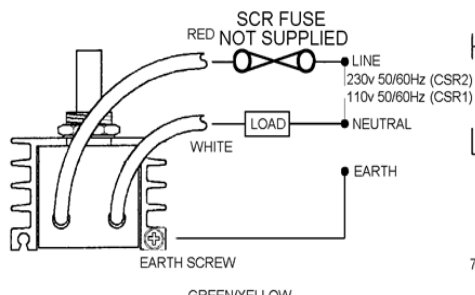
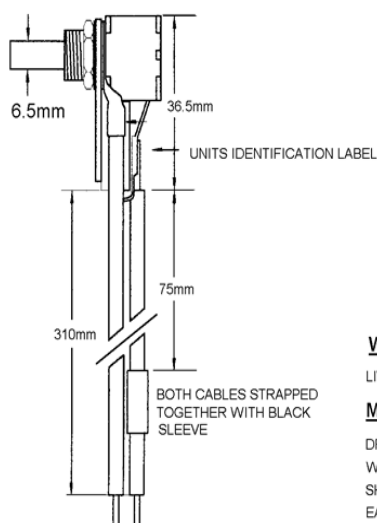
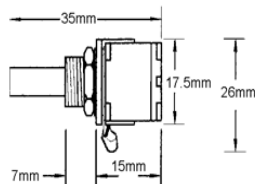
Open / enclosed Regulator 6A, 10A, 15A, 110V & 230V

Complete Compact Phase Angle AC Regulator

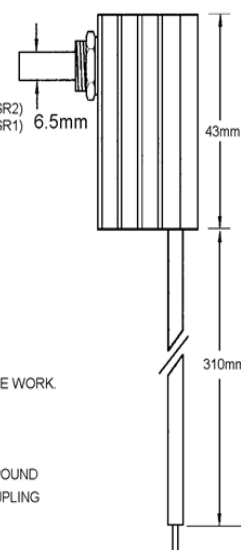
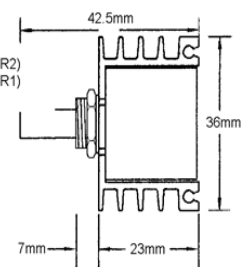
INSTALLATION

DIMENSIONS & CONNECTIONS

CSR2 B SERIES



CSR2 E SERIES



WARNING

LIVE TERMINALS - SWITCH OFF SUPPLY BEFORE COMMENCING ANY SERVICE WORK

MOUNTING INSTRUCTIONS

DRILL A 10.3mm HOLE

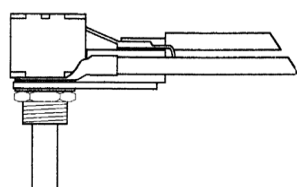
WHEN FIXING CSR TO ADDITIONAL HEATSINK, A SMEAR OF HEATSINK COMPOUND SHOULD BE USED BETWEEN THE BONDED SURFACES TO AID THERMAL COUPLING
EARTH BONDING SHOULD BE ACHIEVED BETWEEN ALL MATING SURFACES

Cooling Requirements

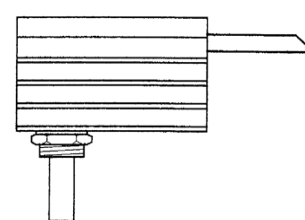
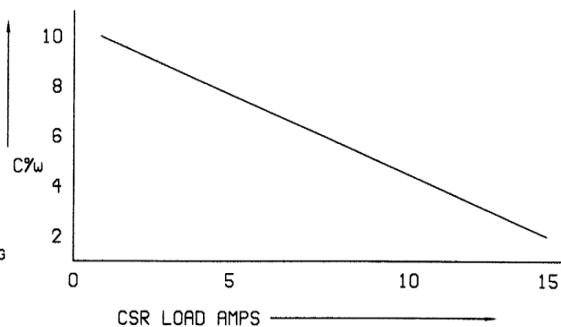
Heatsink Rating against RMS Maximum Current

Stainless steel is typically 15 times less thermally conductive and mild steel which is typically 5 times less thermally conductive.

TO PREVENT IC OVERHEATING, THE CSR SHOULD BE FIXED FLUSH AND TIGHTLY TO A THERMALLY CONDUCTIVE PANEL OR HEATSINK WITH A SMEAR OF HEATSINK COMPOUND TO AID HEAT DISSIPATION



LOAD/AMPS	PANEL/HEATSINK RATING
BELOW 5	8°C/watt
AT 10	4°C/watt
AT 15	2°C/watt



LOAD/AMPS	PANEL/HEATSINK RATING
BELOW 5	NONE
AT 10	4°C/watt
AT 15	2°C/watt

Contact Us:

☎ 0044 (0) 1704-516 501
✉ enquiries@united-automation.com
🌐 www.united-automation.com

CSR Module

Open / enclosed Regulator 6A, 10A, 15A, 110V & 230V

Complete Compact Phase Angle AC Regulator

RECOMMENDATIONS

FUSING

It is recommended to use semiconductor (fast acting) type fuses or circuit breakers (semiconductor - MCB) for unit/device protection. On initial 'switch on' some loads may need an increased Factor of Safety (F of S) for unit and /or unit protection. Integral gate protection is provided) but further appropriate fusing should be integrated into the 12V supply (e.g., HRC F1A) and load circuit. See SRA Datasheet for further information.

DOCUMENTS

Other documents are available on request, which may be appropriate for your applications:

Code	Identity	Description
X10229	RFI	Filtering recommendation – addressing EMC Directive
X10213	ITA	Interaction, uses for phase angle and for burst fire control
X10255	SRA	Safety requirements – addressing the Low Voltage Directive (LVD) including, Thermal Data/Cooling, Live Parts Warning, Earthing requirements, and Fusing recommendations

It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.T. regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding the safety of electrical equipment. For International standards refer STANDARDS on D of C.

OPTIONAL EXTRAS

Product Code	Product Description
N30001	Control Knob RN-113B
L60018	PR DIAL (1 -10) TYPE
Z01062	Heatsink Compound Syringe (Must be applied while fitting)
A-EN2010-6-F*	6A 10 series EMI Single phase Chassis Mount filter
A-EN2010-10-F*	10A 10 series EMI Single phase Chassis Mount filter
A-EN2010-16-F *	16A 10 series EMI Single phase Chassis Mount filter

Note: When ordering a filter, the current at which the CSR is to be used at will be required.

PRODUCT CODE AND RELATED PRODUCT CODE

For 6A

Product Code	Product Description
A01496	6A 110VAC Complete Compact Phase Angle AC Regulator
A01406	6A 230VAC Complete Compact Phase Angle AC Regulator

For 10A

Product Code	Product Description
A01490	10A 110VAC Complete Compact Phase Angle AC Regulator
A01410	10A 230VAC Complete Compact Phase Angle AC Regulator

For 15A

Product Code	Product Description
A01495	15A 110VAC Complete Compact Phase Angle AC Regulator
A01415	15A 230VAC Complete Compact Phase Angle AC Regulator



BMF House - Wight Moss Way,
Southport Business Park
Southport PR8 4HQ
ENGLAND, UNITED KINGDOM

Contact Us:
☎ 0044 (0) 1704-516 501
✉ enquiries@united-automation.com
🌐 www.united-automation.com

