

**PR**  
electronics



**2 2 2 9**

**Switchmode  
voltage regulator**

No. 2229V101-UK

From serial no.: 970063001

**EAC**



- DK** ▶ PR electronics A/S tilbyder et bredt program af analoge og digitale signalbehandlingsmoduler til industriel automation. Programmet består af Isolatorer, Displays, Ex-barrierer, Temperaturtransmittere, Universaltransmittere mfl. Vi har modulerne, du kan stole på i selv barske miljøer med elektrisk støj, vibrationer og temperaturudsving, og alle produkter opfylder de strengeste internationale standarder. Vores motto »Signals the Best« er indbegrebet af denne filosofi - og din garanti for kvalitet.
- UK** ▶ PR electronics A/S offers a wide range of analog and digital signal conditioning devices for industrial automation. The product range includes Isolators, Displays, Ex Interfaces, Temperature Transmitters, and Multifunctional Devices. You can trust our products in the most extreme environments with electrical noise, vibrations and temperature fluctuations, and all products comply with the most exacting international standards. »Signals the Best« is the epitome of our philosophy - and your guarantee for quality.
- FR** ▶ PR electronics A/S offre une large gamme de produits pour le traitement des signaux analogiques et numériques dans tous les domaines industriels. La gamme de produits s'étend des transmetteurs de température aux afficheurs, des isolateurs aux interfaces SI, jusqu'aux modules universels. Vous pouvez compter sur nos produits même dans les conditions d'utilisation sévères, p.ex. bruit électrique, vibrations et fluctuations de température. Tous nos produits sont conformes aux normes internationales les plus strictes. Notre devise »SIGNALS the BEST« c'est notre ligne de conduite - et pour vous l'assurance de la meilleure qualité.
- DE** ▶ PR electronics A/S verfügt über ein breites Produktprogramm an analogen und digitalen Signalverarbeitungsgeräte für die industrielle Automatisierung. Dieses Programm umfasst Displays, Temperaturtransmitter, Ex- und galvanische Signaltrenner, und Universalgeräte. Sie können unsere Geräte auch unter extremen Einsatzbedingungen wie elektrisches Rauschen, Erschütterungen und Temperaturschwingungen vertrauen, und alle Produkte von PR electronics werden in Übereinstimmung mit den strengsten internationalen Normen produziert. »Signals the Best« ist Ihre Garantie für Qualität!

# SWITCHMODE VOLTAGE REGULATOR

Type 2229

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# SWITCHMODE VOLTAGE REGULATOR 2229

- AC/DC input voltage
- Adjustable output 5...24 VDC, max. 40 W
- Adjustable from external potentiometer
- Short-circuit protection
- Thermal overload protection
- Standard 11-pole relay socket

## Applications

General voltage regulator for external transformer used in connection with measurement systems requiring fixed stabilized 24 VDC or supply for any other sensors, transmitters or a general variable voltage regulator in the range 5 to 24 VDC. Used as a power efficient pre-regulator for 5 VDC linear regulator (e.g. from 32 V to 8 V). Used as adjustable power supply controlled from external potentiometer.

## Technical characteristics

The unit is based on switchmode technology enabling an adjustable output with a minimum loss of power. A rectifier bridge in the input allows free choice of polarity for the DC input.

## Mounting

The 2229 is for standard 11-pole socket mounting in all positions. To achieve maximum cooling of the module, mounting in a vertical position at a distance of minimum 10 mm between neighbouring units is recommended.

## Input

AC or DC input voltages in accordance with the specifications.  
Input is not galvanically isolated from output.

## Output

The output is adjustable from front potentiometer in the range 5...24 VDC or from an external potentiometer (potm. 20 k $\Omega$ ). Using external potentiometer the front potentiometer must be adjusted to the maximum wanted output plus 20%. A green LED indicates active output.

Short-circuit protection limits the current to typ. 5.8 Amp. Short-circuit will zero the voltage to minimise the power. When removing the short-circuit, the output will turn back to the adjusted value.

## Electrical specifications

### Specifications range:

-20°C to +60°C

### Common specifications:

Internal consumption max. ....	10 W
Temperature coefficient.....	0.05%/°C
Mains effect ( $\pm 10\%$ ).....	$< \pm 30$ mV
Transient stability (10%-max. load).....	$< 250$ mV
EMC immunity influence.....	$< \pm 0.5\%$
Relative air humidity .....	$< 95\%$ RH (non-cond.)
Dimensions (HxWxD).....	80.5 x 35.5 x 84.5 mm
Protection degree.....	IP50
Weight.....	170 g

### Input:

Input voltage (AC).....	Max. 28 VAC
	Min. VAC = $(V_{out} + 5) / 1.2$
Input voltage (DC) .....	Max. 40 VDC
	Min. VDC = $(V_{out} + 5)$
Frequency .....	50...60 Hz

### Output:

Output voltage .....	4.5...26.4 VDC
Output power.....	Max. 40 W
Output current.....	Max. 2.5 A / 5 VDC
	Max. 2.5 A / 12 VDC
	Max. 2.5 A / 15 VDC
	Max. 1.7 A / 24 VDC
Load effect, (0-max. load).....	$< 1.5\%$ / A
Current limit (short circuit).....	Typ. 5.8 A
Output ripple .....	$< 20$ mVRMS

### Observed authority requirements:

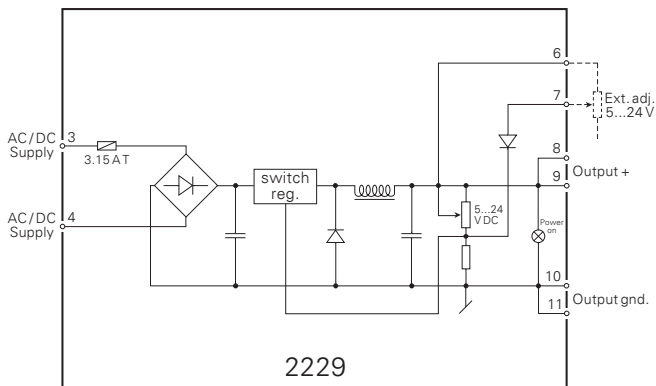
EMC 2004/108/EC .....	EN 61326-1
EAC TR-CU 020/2011.....	EN 61326-1

### Standard:

## Order

Type	Version	Output
2229	AC or DC : A	Special (5...24 V) : 0
		24 VDC : 1
		15 VDC : 2
		12 VDC : 3
		5 VDC : 4

## Block diagram





**Displays** Programmable displays with a wide selection of inputs and outputs for display of temperature, volume and weight, etc. Feature linearization, scaling, and difference measurement functions for programming via PReset software.



**Ex interfaces** Interfaces for analog and digital signals as well as HART signals between sensors / I/P converters / frequency signals and control systems in Ex zone 0, 1 & 2 and for some devices in zone 20, 21 & 22.



**Isolation** Galvanic isolators for analog and digital signals as well as HART signals. A wide product range with both loop-powered and universal isolators featuring linearization, inversion, and scaling of output signals.



**Temperature** A wide selection of transmitters for DIN form B mounting and DIN rail devices with analog and digital bus communication ranging from application-specific to universal transmitters.



**Universal** PC or front programmable devices with universal options for input, output and supply. This range offers a number of advanced features such as process calibration, linearization and auto-diagnosis.







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