PERFORMANCE
MADE
SMARTER

Product manual
2229
Switchmode voltage regulator

TEMPERATURE | I.S. INTERFACES | COMMUNICATION INTERFACES | MULTIFUNCTIONAL | ISOLATION | DISPLAY

No. 2229V102-UK
From serial no.: 219047001

PR electronics

6 Product Pillars
to meet your every need

Individually outstanding, unrivalled in combination

With our innovative, patented technologies, we make signal conditioning smarter and simpler. Our portfolio is composed of six product areas, where we offer a wide range of analog and digital devices covering over a thousand applications in industrial and factory automation. All our products comply with or surpass the highest industry standards, ensuring reliability in even the harshest of environments and have a 5-year warranty for greater peace of mind.

Temperature

Our range of temperature transmitters and sensors provides the highest level of signal integrity from the measurement point to your control system. You can convert industrial process temperature signals to analog, bus or digital communications using a highly reliable point-to-point solution with a fast response time, automatic self-calibration, sensor error detection, low drift, and top EMC performance in any environment.

I.S. Interface

We deliver the safest signals by validating our products against the toughest safety standards. Through our commitment to innovation, we have made pioneering achievements in developing I.S. interfaces with SIL 2 Full Assessment that are both efficient and cost-effective. Our comprehensive range of analog and digital intrinsically safe isolation barriers offers multifunctional inputs and outputs, making PR an easy-to-implement site standard. Our backplanes further simplify large installations and provide seamless integration to standard DCS systems.

Communication

We provide inexpensive, easy-to-use, future-ready communication interfaces that can access your PR installed base of products. All the interfaces are detachable, have a built-in display for readout of process values and diagnostics, and can be configured via push-buttons. Product specific functionality includes communication via Modbus and Bluetooth and remote access using our PR Process Supervisor (PPS) application, available for iOS and Android.

Multifunction

Our unique range of single devices covering multiple applications is easily deployable as your site standard. Having one variant that applies to a broad range of applications can reduce your installation time and training, and greatly simplify spare parts management at your facilities. Our devices are designed for long-term signal accuracy, low power consumption, immunity to electrical noise and simple programming.

Isolation

Our compact, fast, high-quality 6 mm isolators are based on microprocessor technology to provide exceptional performance and EMC-immunity for dedicated applications at a very low total cost of ownership. They can be stacked both vertically and horizontally with no air gap separation between units required.

Display

Our display range is characterized by its flexibility and stability. The devices meet nearly every demand for display readout of process signals and have universal input and power supply capabilities. They provide a real-time measurement of your process value no matter the industry and are engineered to provide a user-friendly and reliable relay of information, even in demanding environments.

Switchmode voltage regulator

2229

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Switchmode voltage regulator
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- 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

Application

- 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 kΩ). 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

Environmental conditions

Operating temperature	-20 to +60°C
Relative air humidity	< 95% RH (non-cond.)
Protection degree	IP50

Mechanical specifications

Dimensions (HxWxD) (D is excl. pins)	80.5 x 35.5 x 84.5 mm
Weight	170 g

Common specifications

Internal consumption max.	10 W
Temperature coefficient.	0.05% / °C
Mains effect (±10%)	< ±30 mV
Transient stability (10%-max. load)	< 250 mV
EMC immunity influence	< ±0.5%

Electrical specifications - 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

Electrical specifications - 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

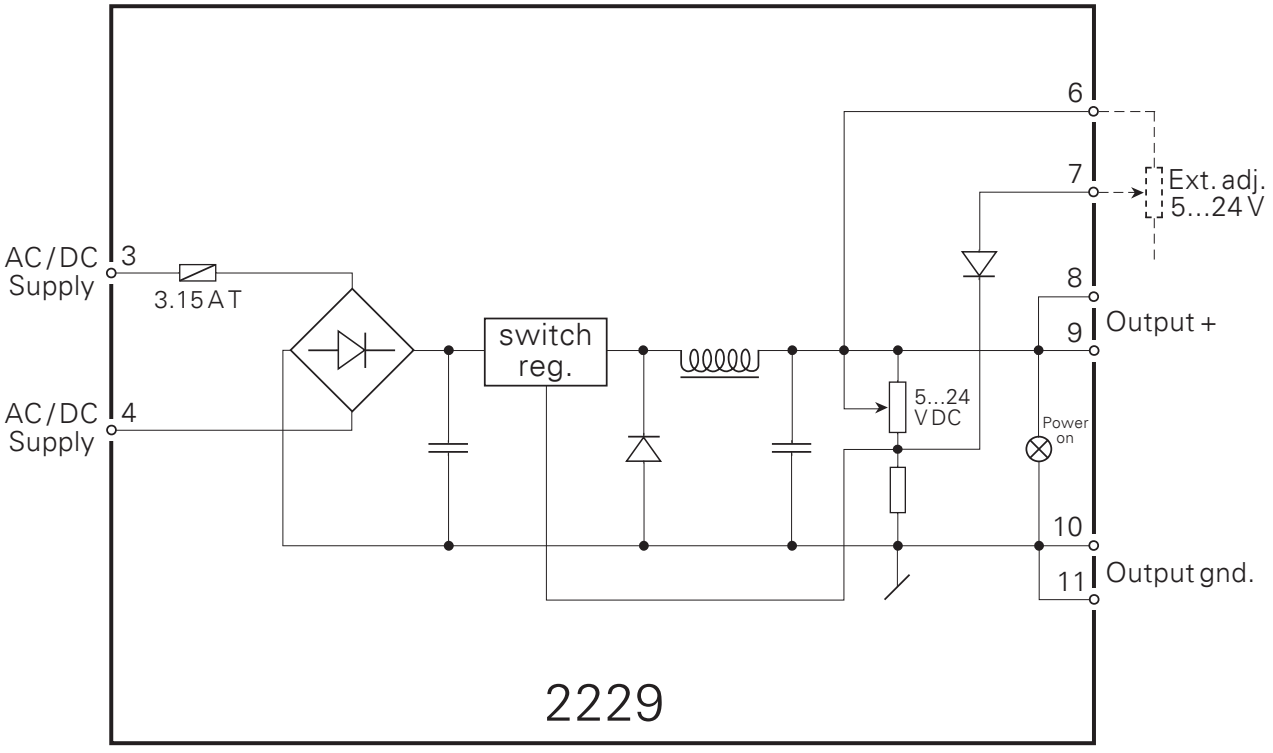
Observed authority requirements

EMC	2014/30/EU & UK SI 2016/1091
RoHS	2011/65/EU & UK SI 2012/3032
EAC	TR-CU 020/2011

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



Document history

The following list provides notes concerning revisions of this document.

Rev. ID	Date	Notes
102	2232	UKCA added.

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All our devices are backed by expert service and a 5-year warranty. With each product you purchase, you receive personal technical support and guidance, day-to-day delivery, repair without charge within the warranty period and easily accessible documentation.

We are headquartered in Denmark, and have offices and authorized partners the world over. We are a local business with a global reach. This means that we are always nearby and know your local markets well. We are committed to your satisfaction and provide PERFORMANCE MADE SMARTER all around the world.

For more information on our warranty program, or to meet with a sales representative in your region, visit prelectronics.com.

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PERFORMANCE MADE SMARTER

PR electronics is the leading technology company specialized in making industrial process control safer, more reliable and more efficient. Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. This dedication continues to set new standards for products communicating, monitoring and connecting our customers' process measurement points to their process control systems.

Our innovative, patented technologies are derived from our extensive R&D facilities and from having a great understanding of our customers' needs and processes. We are guided by principles of simplicity, focus, courage and excellence, enabling some of the world's greatest companies to achieve PERFORMANCE MADE SMARTER.