Euro Series

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Features

- **High operating temperature**
- **Hot pluggable**
- **Wide input voltage range**
- **Battery charging facilities**
- **Wide output voltage range**
- **IEC255-6, IEC801-4-5, level 3**

Specifications

INPUT	
Input voltage	See table. Units will turn off, with under or over input voltage
No-load input current	3% of full load current typical
Inrush current	AC input limited by thermistor
Reverse polarity protection	Optional on DC input models
OUTPUT	
Output voltage	See table
Output current	See table
Ripple & noise	⩽ 1% + 30mVpp
Line regulation (±10%)	0.1%
Load regulation (10%–90%)	0.2% typical
Load transient (20%–100%–20%)	6% typical
Response time to ±1%	2mS typical
Temperature coefficient	0.02% per °C typical
Overvoltage protection	Standard on single output models and main output on multi output units OVP switches off module with automatic return
Overload protection	Current limited at 105%–110% of full load
Holdup time	Depends on input voltage (typ. 2mS at 12VDC, rises to typ. 15mS at 220VAC)
Rise time	100mS typical
Remote sensing	Standard on main output
ADDITIONAL OUTPUTS with linear regulators	
Voltage & current rating	See tables of models
Ripple & noise	0.5% typical
Line regulation (±10%)	0.1%
Load regulation (10%–90%)	2% typical
Overload protection	Yes, current limit

OPERATING	
MTBF	Approx. 100,000 hrs at 40°C
Efficiency at full load	70%–90%, depending on model
Switching frequency	Approx. 33kHz/20kHz
Parallel operation	Yes, current balancing with decoupling diode, option "cs"
Series operation	Yes, ask for details
Redundant operation	Yes, for decoupling diodes, option "dd"
ENVIRONMENTAL	
Operating temperature	-20°C to +75°C
Load derating	Derate 2.5% per °C, from +55°C to 75°C
Cooling	Convection cooled
Storage temperature	-40°C to +85°C
STANDARDS AND APPROVALS	
Bursts, high-energy pulses	IEC1000-4-4 (level 3)
Spikes	EN50142 (level 3)
Isolation	To EN60950 class 1
EMI standards	EN61000-4-2, EN61000-4-4, EN61000-4-5
C-Tick	AS/NZS CISPR11: 2002 Group1 Class A
Safety standard	VDE0160, EN60950, CE LVD 73/23/EEC
MECHANICAL	
Dimensions	See tables
Connector	DIN 41612 H15

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Euro Option Spec

Options

INPUT

Option “i” (inrush current limiting): A thermistor is connected in series with the input lines which changes its resistance from high to low when it gets hot. It does not reduce the current surge if the input power is interrupted for a short period of time not allowing the thermistor to cool down. Thermistor are fitted as standard to all mains input models except for 1-phase input of models > 2.5kW. Thermistors are available up to 45A. For higher input current an electronic inrush current limitation can be offered.

Option “**ie**” electronic inrush current limiting An electronic circuit limits the inrush current.

Option “**sd**” (series diode): A series diode protects the module against input voltage of wrong polarity (additional power losses).

Option “**ad**” (anti-parallel diode): To avoid the power losses of a series diode a diode is provided with opposite polarity in parallel to the input blowing an internal or external fuse if the module is connected to a supply with wrong polarity.

Option “**au**” (auto-ranging) For standard dual AC input models the range of 115/230Vac is to be selected by connecting the input line to different pins on the connector. With auto-ranging the unit senses the input voltage and provides automatically the correct connection.

Option “**p**” (power fail): A signal (logic or relay) is given if the input voltage (AC or DC) drops below the specified limit. In AC input units we sense the rectified input voltage so that a power fail alarm will not be triggered if at light loads mains power returns before the input capacitors are substantially discharged.

Option “**r**” (relay): A relay instead of a logic signal is provided for failure indication.

OUTPUT

Option “**dd**” (decoupling diode): For redundant operation the outputs of two or more units are paralleled behind de-coupling diodes so that an internal fault of one module does not affect the operation of the others. These diodes cause power losses.

Option “**cs**” (active current sharing): An additional control circuit provides active current sharing via an interconnecting wire between converters that operate in parallel. Active current sharing should be used for multi-output units operating in parallel.

Option “**csi**” (current sharing interrupt): Option “csi” will effect the removal of the “cs” signal. Should there be an instance where a unit is not supplying the load, then the effect of its “cs” signal is removed, and the load voltage is unaffected by this condition.

Option “**h1**” (inhibit): A terminal connected to the negative input line also shuts off the converter. This can also be used in conjunction with a thermal trip which shuts the unit down.

Option “**h2**” (inhibit): Operation of the unit is inhibited if a voltage signal (5V/10mA) is applied in reference to the negative line of the (main) output.

Option “**rco**” (reducing current limiting at over temperature) A circuit reduces the current limiting level at higher temperature (to be specified).

Option “**d**” (DC-ok, one output): A logic signal is given if the output voltage (main output in multi-output systems) is below the specified limit.

Option “**m**” (DC-ok, all outputs): In multi-output systems a logic signal is provided if the voltage of any output is below the specified limit.

Option “**ac**” (AC ok) A logic signal connected to relay contacts is given if the output voltage of an inverter is below the specified limit.

Option “**y**” (sys-reset): This logic signal is a combination of power fail and DC-ok as specified for VME systems.

Option “**r**” (relay): A relay instead of a logic signal is provided for failure indication.`

Programming & Monitoring

Programming series 200-5800, 6600		
Of output voltage from 0 to 100%	By external signal, 0-10Vdc	**eu1**
	By external signal, 4-20mA	**eu2**
	By 270° potentiometer	**eu3**
	By 10 turn potentiometer	**eu4**
Of output current from 0 to 100%	By external signal, 0-10Vdc	**ei1**
	By external signal, 4-20mA	**ei2**
	By 270° potentiometer	**ei3**
	By 10 turn potentiometer	**ei4**
Isolating amplifier for programming		**iso**
Programming via interface RS232 or IEEE488		

Monitoring series 200-5800, 6600		
Of output voltage from 0 to 100%	By external signal, 0-10Vdc	**mu1**
	By external signal, 4-20mA	**mu2**
Of output current from 0 to 100%	By external signal, 0-10Vdc	**mi1**
	By external signal, 4-20mA	**mi2**
Isolating amplifier for programming		**iso**
Programming via interface RS232 or IEEE488		

Charger programming (all series)		
Temperature compensated charging voltage(sensor not included)		**tc**
Temperature sensor	Not interchangeable due to fixed resistor values	**ts1**
	Interchangeable, IC controlled	**ts2**
Automatic selection of charging characteristic (float / equalize charge) with timer		**ch1**
Additionally: Manual selection of charging characteristic		**ch2**
Additionally: Boost charge operation (manually activated with time delayed return to normal operation)		**ch3**

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Programming / Monitoring- Series 6400		
Programming of output voltage and current from 0-100% including isolation	By external signal, 0-10Vdc	**e1**
	By external signal, 4-20mA	**e2**
Programming of output voltage from 0-100%	By 270° potentiometer	**eu3**
	By 10 turn potentiometer	**eu4**
Programming of output current from 0-100%	By 270° potentiometer	**ei3**
	By 10 turn potentiometer	**ei4**
Monitoring of output voltage and current from 0-100% including isolation	By external signal, 0-10Vdc	**m1**
	By external signal, 4-20mA	**m2**
Remote on/off programming and monitoringof output voltage and current from 0-100% including isolation	By external signal, 0-10Vdc	**em1**
	By external signal, 4-20mA	**em2**
	Via RS232 and IEEE488	**em3**
Improved tolerance	Between reference (external signal) and measured value / between measured value and displayed signal: voltage 0.2% and current 0.5%.	**tol**

ENVIRONMENT

Option "**t**" (tropical protection):The unit is given additional protection by a heavy coat of varnish on theprinted circuit board(s) and components.

Option "**c**" (extended temperature range):The circuit is designed and tested for operation at an ambient temperature as low as –40 °C.

Option "**ms**" (increased mechanical strength): Screws are secured by Locktite and heavy components are fastened by ties and/or glue. Modules with the "ms" option meet the standard EN61373 regarding shock and vibration.

MECHANICS

Standard mounting "**Eurocassette**" pluggable module for 19" sub-racks 84TE

Option "**w**" (wall mounting): Module is screwed against a mounting plate for installation in a cabinet. The load connections are typically a terminal block.

Option "**cha**" (chassis mount) Module is designed for installation to a structure or within cabinet. Screw type connectors are supplied with the module.

Option "**din**" (DIN rail mount) Module is designed for DIN rail mounting to a structure or within Cabinet. Screw type connectors are s