

Application Note

1606-XLP25A with 5V DC/25 W



- Mounted and connected in record time, no tools required
- World-wide approvals (  ) for industry
- Tiny: WxHxD = 45 x 75 x 91mm
- Adjustable output voltage up to DC 5.5V
- 100...240V Wide Range Input

• Input

Input voltage	AC 100...240V (Wide Range), 47...63Hz Admiss. limits: AC 85...264V (DC 85...370V)
Input current	<0.6A (@ AC 100V, 25W P _{out}) <0.35A (@ AC 196V, 25W P _{out})
External fusing	Unit has internal (not accessible) input fuse. No other protection required. In order to meet local requirements, please consult local codes and regulations for proper installation.
Transient immunity	Transient resistance acc. to VDE 0160 / W2 (750V / 1.3ms), over entire load range
Hold-up time (see diagram below)	>19ms @ AC 100V, 5.1V / 5A >107ms @ AC 196V, 5.1V / 5A >170ms @ AC 230V, 5.1V / 5A

• Efficiency, Reliability

Efficiency	>80% (AC 230V, 5.1V / 5A) (see also diagram below)
Losses	typ. 6W (AC 230V, 5.1V / 5A)
MTBF (Reliability)	600.000h acc. to Siemensnorm SN 29500 (5.1V / 5A, AC 230V, T _{amb} = +60°C)

Prior to shipment, *every* unit undergoes the following tests in order to isolate any defective units which might suffer an early failure:

- Run-in/ burn-in (Full load, T_{amb} = +60°C, on/off cycle)
- Functional test (100 %)

• Construction, Mechanics, Installation

Robust plastic housing (US Patent No. D442, 923S), fine ventilation grid on three housing sides to keep out small parts (e.g. screws), IP20

Dimensions and weight

- W x H x D 45mm x 75mm x 91mm (+ DIN Rail)
Depth incl. terminals: 98 mm (+ DIN Rail)

- Weight 240g

Mounting orientation  (cf. 'Output')

Ventilation/Cooling Normal convection, no fan required

- Free space f. cooling recommended: 25mm on sides with ventilation grid

Easy snap-on mounting onto the DIN-rail (TS35/7,5 or TS35/15).

Unit sits safely and firmly on the rail; no tools required even to remove

Connection by Spring Clamp terminals; uniformly firm hold, vibration-resistant and maintenance-free:
2 terminals per output

- Wire strip length 6mm (0.24in) recommended
- Wire Size Input/Output Stranded 28...12 AWG (0.3...2.5 mm²),
Solid 28...12 AWG (0.3...4 mm²)

Design details – for your advantage:

- All terminals are easy to reach as mounted on the front panel.
- Input and output are strictly apart from each other (input below, output above) and so cannot be mixed up

- **Mounting and connection do not require any screwdriver**

→ Easy, quick, durable and reliable installation

• Output

Output voltage	DC 5...5.5V; adj. by front panel potentiometer
• preset	5.1V $\pm 0.5\%$ @ 5A
Voltage regulation	static $<2\%$ V_{out} dynamic $\pm 5\%$ V_{out} over all
Ripple/Noise	$<50\text{mV}_{pp}$ (20MHz bandwidth, 50 Ω measurement)
Overvoltage prot. (OVP)	$<6.5\text{V}$
Output noise suppression	Radiated EMI values below EN50081-1, even when using long ($>2\text{m}$), unscreened output cables
Rated continuous loading	$I_{out} = 5\text{A}$ @ $V_{out} = 5.1\text{V}$ (convection cooling); details see derating diagram below
• power reserve	20%...35% (depending on V_{in}); for details see diagram 'output characteristic' below
Overload behavior	Straight V/I characteristic (depending on V_{in}); details see diagram 'output characteristic' below
Protection	Unit is protected against (also permanent) short-circuit, overload and open-circuit.
Derating	depending on built-in orientation; details see diagram below
Power back immunity	10V
Operating indicator	Green LED

• Environmental Data, EMC, Safety

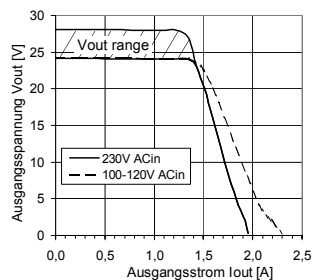
Ambient temperature range (measured 25mm below unit)	
• storage/transport	$-25^{\circ}\text{C} \dots +85^{\circ}\text{C}$
• operation	$-10^{\circ}\text{C} \dots +70^{\circ}\text{C}$ (for derating see diagram below)
Humidity	max. 95% (without condensation)
Electromagnetic emissions (EME)	EN 50081-1 (includes EN 50081-2) Class B (EN 55011, EN 55022) incl. Annex A thanks to noise suppression
Electromagnetic immunity (EMI)	EN 61000-6-2 (includes EN 55024)
Safe low voltage:	SELV (EN60950, VDE0100/T.410), PELV (EN50178)
Prot. class/degree:	Class I (EN60950) / IP20 (EN60529)

The PSU complies with all major **safety approvals** for EU (EN 60 950, EN 60204-1, EN 50178), USA (UL 60950, E137006, UL508 LISTED, E198865), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]).

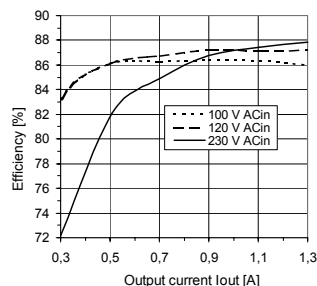
Operation on IT networks: The unit is designed to operate on IT networks. The unit may still deliver a hazardous voltage after the fuses are tripped.

• Diagrams

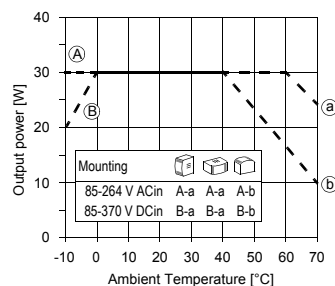
Output characteristic V_{out}/I_{out} (min.)



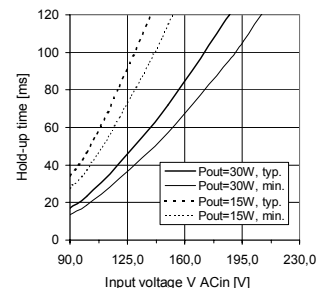
Efficiency (@ $V_{out} = 24\text{V}$, typ.)



Derating of output power



Hold-up time with ACin (@ $V_{out} = 24\text{V}$, typ. + min.)



Specifications valid for 230V AC input voltage, $+25^{\circ}\text{C}$ ambient temperature, and 5 min run-in time, unless otherwise stated. They are subject to change without prior notice.

www.rockwellautomation.com

Corporate Headquarters

Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414.212.5200, Fax: (1) 414.212.5201

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36-BP 3A/B, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Headquarters for Dodge and Reliance Electric Products

Americas: Rockwell Automation, 6040 Ponders Court, Greenville, SC 29615-4617 USA, Tel: (1) 864.297.4800, Fax: (1) 864.281.2433

Europe: Rockwell Automation, Brühlstraße 22, D-74834 Elztal-Dallau, Germany, Tel: (49) 6261 9410, Fax: (49) 6261 1774

Asia Pacific: Rockwell Automation, 55 Newton Road, #11-01/02 Revenue House, Singapore 307987, Tel: (65) 351 6723, Fax: (65) 355 1733