

GAL300W POWER SUPPLY- SHORT MANUAL

AU448A2 and AU1024A2 references identify power supply units belonging to GAL300W series, designed to be used as power units with energy reserve to supply fire safety systems in accordance with Construction Products Regulations CPR 305/2011.

The electrical and mechanical construction of such products complies with the following directives:

EMC Directive 2014/30 / EU 26/02/2014, LVD Directive 2014/35 / UE 26/02/2014, RoHS Directive 2011/65 / EU 08/06/2011

The following standards are used for declared compliance:

EN 54-4: 1997 + A1: 2002 + A2: 2006⁽¹⁾, EN12101-10: 2005 + AC :2007, EN50130-4:2011, EN 61000-6-3: 2007 + A1: 2011, EN62368-1:2014

The units must be installed in a safe environment (dry and stable), between -5 °C and +40 °C with a maximum humidity of 93% without condensation (Environmental Class 1 - EN12101-10).

Models and features:

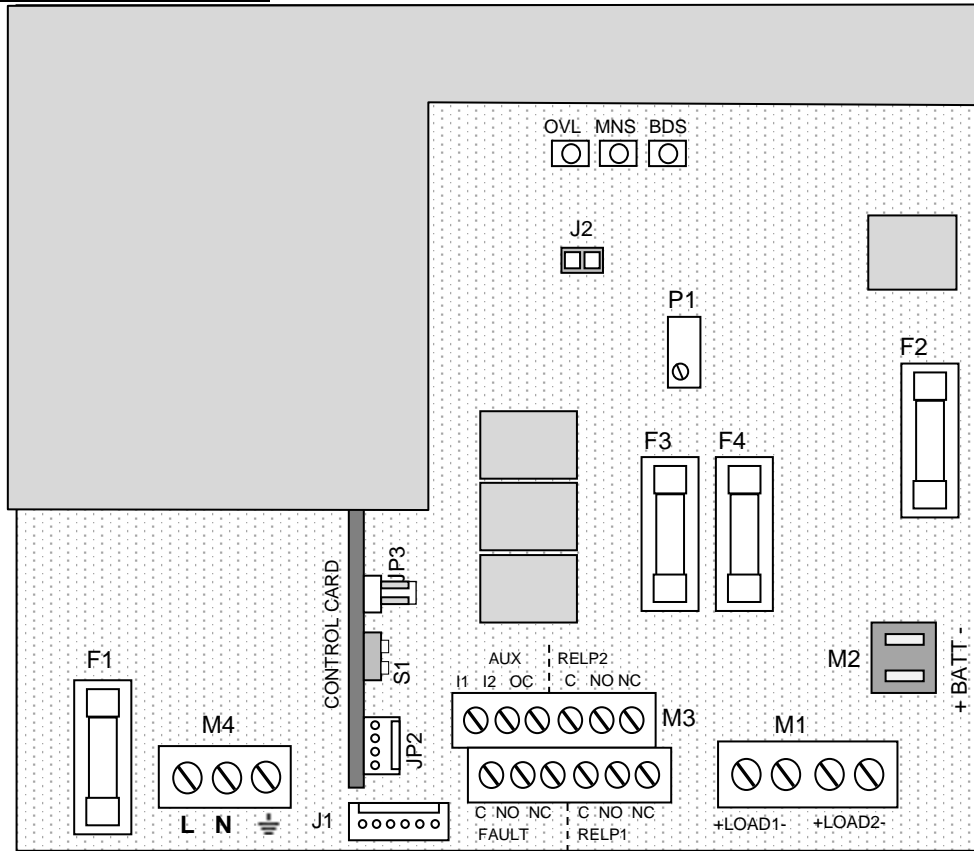
Model	Case type	Dimensions - Weight	Batteries can be housed
AU1024A2	CM02 : metallic box, epoxy coating, IP30 protection degree	L385 x H405 x P160 mm 7,5Kg	2x17Ah – 2x27Ah
AU448A2			4x12Ah
AU1024A2/3	CM03 : metallic box, epoxy coating, IP30 protection degree	L425 x H505 x P205 mm 9,75Kg	2x17Ah - 2x42Ah
AU448A2/3			4x12Ah - 4x27Ah
AU1024A2/R	Rack 3U: metallic drawer. This version is planned to house the batteries outside of the drawer, in the cabinet.	Drawer rack 19", 3U, to be included in the rack. 4,25kg	2x17Ah - 2x42Ah
AU448A2/R			4x12Ah - 4x27Ah

ELECTRICAL CHARACTERISTICS		
SALE REFERENCE	AU1024A2 (27,5V$\overline{\text{---}}$ 10A)	AU448A2 (55,0V$\overline{\text{---}}$ 4A)
MAINS INPUT VOLTAGE	230V +10% / -15%	
MAINS FREQUENCY	50Hz sinusoidal +/-10%	
MAX CURRENT CONSUMPTION	2A	1,8A
NUMBER OF AVAILABLE POWER OUTPUTS	2 outputs individually protected by fuse	
RATED OUTPUT VOLTAGE	27,5V $\overline{\text{---}}$	55V $\overline{\text{---}}$
OUTPUT VOLTAGE MIN/MAX	min = selectable to 21,6V or 23V $\overline{\text{---}}$, max = 28,5V $\overline{\text{---}}$	min = selectable to 43,2V or 45V $\overline{\text{---}}$, max=57,6V $\overline{\text{---}}$
	Output voltage available in normal operating conditions. NOTE: following a deep discharge of the batteries to their final voltage, reconnection of the main power supply will result in a voltage of the user outputs lower than the minimum voltage declared. During this short period, the power supply will indicate a fault status via the signalling and the associated output	
OUTPUT RIPPLE	TYPICAL MAX	200mVpp (0,8%) <2%
MINIMUM OUTPUT LOAD	0 mA	
BATTERY DISCONNECTION THRESHOLD	23V (default) or 21,6V	45V (default) or 43,2V
MAX AVAILABLE TOTAL CURRENT FOR OUTPUTS AND TO RECHARGE BATTERY	10A (-0/+18%)	4A (-0/+18%)
MAX AVAILABLE CONTINUOUS CURRENT FOR OUTPUTS	8A (total divided between two outputs) NOTE: the maximum current to each single output is limited by 6A fuse	3A (total divided between two outputs)
MAX AVAILABLE CURRENT FOR BATTERY RECHARGE	2A (-0/+30%)	1A (-0/+30%)
RELAY OUTPUTS	3 outputs 30V $\overline{\text{---}}$ 1A, two profiles programmable by dip-switch	
MAX CURRENT DRAWN FROM UNIT WITHOUT MAINS	35mA \pm 5% (24V – relay profile 1)	20mA \pm 5% (48V – relay profile 1)
BATTERY TYPE	Series of 2 sealed lead acid batteries, valve-regulated 12V 17 \div 42Ah, class HB or better. Recommended type: FIAMM FG24204 or YUASA NP38-12I	Series of 4 sealed lead acid batteries, valve-regulated 12V 12 \div 27Ah, class HB or better. Recommended type: FIAMM FG22703 or YUASA NP24-12I
AUTONOMY WITHOUT MAINS	To calculate the autonomy without mains, refer to the NTGAL300W technical installation and operating manual	

⁽¹⁾ Only the AU1024A2/3 model with Yuasa NP38-12I battery is also LPCB approved for this standard.

MAX ADMISSIBLE RESISTANCE FOR BATTERY AND ASSOCIATED CIRCUITRY	0,2Ω	0,6Ω
PROTECTION AGAINST BATTERIES POLARITY INVERSION	Diode and fuse + software preventive protection managed by control card	

Module power supply connections:



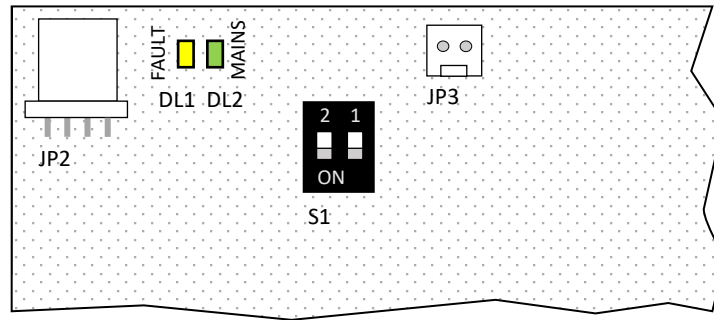
M1	OUTPUT n°1 (+)	27,5V \pm 2% nominal at 20°C. The output is protected by fuse F3	55V \pm 2% nominal at 20°C. The output is protected by fuse F3
	OUTPUT n°1 (-)	Output negative	
	OUTPUT n°2 (+)	27,5V \pm 2% nominal at 20°C. The output is protected by fuse F4	55V \pm 2% nominal at 20°C. The output is protected by fuse F4
	OUTPUT n°2 (-)	Output negative	
M2	BATTERY CONNECTION (+)	27,5V \pm 2% (nominal at 20 °C with batteries charged at 100%). The output can be disconnected by relay RL1 under battery fault condition. The battery connection is protected by fuse F2.	55V \pm 2% (nominal at 20 °C with batteries charged at 100%). The output can be disconnected by relay RL1 under battery fault condition. The battery connection is protected by fuse F2.
	BATTERY CONNECTION (-)	Battery negative	
M3	AUX CONNECTION	11, 12 e OC connections are reserved. Do not use.	
	FAULT RELAY (general fault)	Common contact (COM)	
		Normally open contact (N.O.)	
		Normally closed contact (N.C.)	
	RELEAY RELP1 (mains fault)	Common contact (COM)	
		Normally open contact (N.O.)	
Normally closed contact (N.C.)			
RELEAY RELP2 (battery fault)	Common contact (COM)		
	Normally open contact (N.O.)		
	Normally closed contact (N.C.)		
M4	L, N	INPUT MAINS 230V \sim +10%/-15% 50Hz	
	⊕	EARTH CONNECTION	

F1: MAINS FUSE T3,15AH 250V.

F2: FUSE FOR BATTERIES PROTECTION T10A 250V for AU1024A2 or T6,3A 250V for AU448A2

- F3, F4:** FUSE FOR OUTPUT PROTECTION 1 and 2 T6,3A 250V for AU1024A2 or T3,15A 250V for AU448A2
- J1:** CONNECTOR FOR FRONT PANEL LEDS.
- J2:** JUMPER SELECTION OF CURRENT BATTERY CHARGER: open=2A (default), closed=1A. The jumper is available only for AU1024A2 and allows to limit the battery charging current. **DO NOT CLOSE FOR BATTERIES WITH CAPACITY GREATER THAN 17Ah.**
- OVL:** OVERLOAD LED. If lit on indicates that the power supply is providing the maximum current available.
- MNS:** MAINS PRESENCE LED: If lit on indicates presence of the mains (primary converter is active). It turns off for a short time during battery test.
- BDS:** BATTERY DISCONNECTED LED: if lit on it indicates that battery is disconnected (while mains is present).
- P1:** Output voltage adjusting trimmer (factory adjusted, **DO NOT MODIFY**).

Control board:



JP2: CONNECTION FOR DISPLAY/MAINTENANCE TOOL TLC

JP3: CONNECTION FOR BATTERY TEMPERATURE PROBE. The NTC probe must be attached to the batteries using the metal label provided to allow correct battery charging.

S1: DIP-SWITCH DI PROGRAMMING.

S1-1	RELAY PROGRAMMING	OFF (factory setting)	REL1 = Mains fault	REL2 = Batteries fault
		ON	REL1 = Output 1 fault	REL2 = Output 2 fault
S1-2	Selection of battery disconnection voltage without mains	OFF (factory setting)	Disconnection with output voltage at 23V for AU1024A2 and at 45V for AU448A2	
		ON	Disconnection with output voltage at 21,6V for AU1024A2 and at 43,2V for AU448A2	

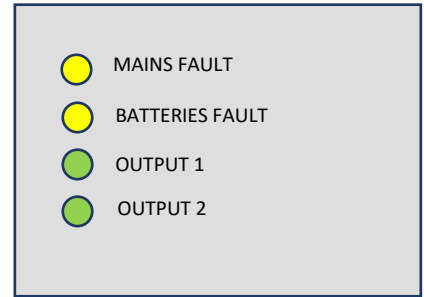
DL1-2: Control board LED. The two LEDs on the control board provide additional information about the conditions of the unit, according to the following table:

DL1 green LED MAINS	DL2 yellow LED FAULT	STATE UNIT
●	○	Normal operation. Mains present. No faults.
●	⊙	Mains present. Battery disconnected or ineffective. x 1 flash/pause → General battery fault. x 2 flash/pause → High battery resistance Fast regular flashing → Maintenance test RI7 in progress
⊙	●	Mains present. Output voltage fault (over/under voltage). x 1 blink/pause → Vout1 fault x 2 blinks/pause → Vout2 fault x 3 blinks/pause → Aux fault
⊙	⊙	Mains present. Hardware fault x 1 blink/pause → General fault x 2 blinks/pause → PFC fault x 3 blinks/pause → Overload fault I Out x 4 blinks/pause → Firmware fault
○	●	Mains fault (mains off for at least 20 min) or fault output voltage
○	○	Fault off and battery low or disconnected, Inefficient unit.

Legend: ●= ON ○= OFF ⊙= Blinking

Front panel signalizations:

Power supply status is shown by green and yellow LEDs on front panel as described in the following table.



YELLOW LED MAINS FAULT	STATUS
○	Mains present.
◉	Slow blinking → Mains failure, battery operation (no mains for less than 20min). Regular and simultaneous flashing of battery fault LED → System fault.
●	Mains failure. Battery operation (no mains for more than 20min).

YELLOW LED BATTERY FAULT	STATUS
○	No fault batteries.
◉	Blinking simultaneous with mains fault → System fault.
●	Battery fault.

GREEN LEDs OUTPUTS 1 and 2	STATUS
○	Output voltage missing.
◉	Slow blinking → Output voltage fault (under voltage). Fast blinking → Output voltage fault (over voltage). Long regular blinking and simultaneous with LED 1 and 2 → Aux fault.
●	Output voltage present and regular.

Legend: ●= ON ○= OFF ◉= Blinking

NOTE: All LEDs off means no mains and battery, or disconnected. Power supply unit out of service.

Marking and Identification of the certified product:

On power supply units AU1024A2 and AU448A2, externally and on the right side of the box, is applied a marking label which uniquely identifies the model, essential information and the CE certification in compliance with Regulation CPR.

A representation of label templates is shown below:

Mod. AU448A2		Lot YYMM/X<nLot>	
Mains: 230V~ 50Hz		Ser. <nSer> RC	
Max mains current: 1,8A		EN12101-10	
Nominal output voltage: 55,0V ~ (20°C)		Electrical power supply equipment	
Total current : 4A I _{max.a} : 3A		Class: A	
Reference document: NTGAL300W		Environmental class: 1	
		Interruption time: 0s	
		C _{max} battery: 12Ah	
EN54-4	Delta Erre Safe S.r.l.		
	Via Ticino, 9A/B – S.G.Lupatoto – Verona - Italy		
0333	11		
	0333 - CPR – 075390		

Mod. AU1024A2		Lot YYMM/X<nLot>	
Mains: 230V~ 50Hz		Ser. <nSer> RC	
Max mains current: 2A		EN12101-10	
Nominal output voltage: 27,5V ~ (20°C)		Electrical power supply equipment	
Total current : 10A I _{max.a} : 8A		Class: A	
Reference document: NTGAL300W		Environmental class: 1	
		Interruption time: 0s	
		C _{max} battery: 27Ah	
EN54-4	Delta Erre Safe S.r.l.		
	Via Ticino, 9A/B – S.G.Lupatoto – Verona - Italy		
0333	11		
	0333 - CPR – 075389		

Refer to the technical manual NTGAL300W for full product use and installation information.