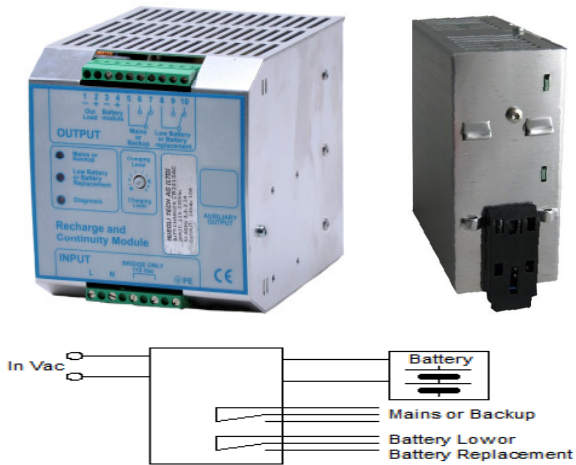


# HT-C2410A Battery Charger



- Input: Single-phase 115 ÷ 230 Vac
- Output: Battery charging 24 Vdc; 10 A
- Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status. Charging curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 Vdc  
Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over Load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 - DIN rail



## Technical features

The HT-C series is a “Switching technology” and “Battery Care philosophy”, since years parts of the core know-how at Huegli Tech, led to the development of this advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation.

The Real Time Auto-diagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective

## General Data

Insulation voltage (In /Out)	<b>3000 Vac</b>
Insulation voltage (In / PE)	<b>1605 Vac</b>
Insulation voltage (Out / PE)	<b>500 Vac</b>
Protection Class (EN/IEC 60529)	<b>IP20</b>
Protection class	<b>I, with PE connected</b>
Reliability: MTBF IEC 61709	<b>&gt; 300.000 h</b>
Pollution Degree Environment	<b>2</b>
Connection Terminal Blocks screw Type	<b>2,5mm(24-14AWG)</b>
Protection class (PE Connected)	<b>I, with PE</b>
Dimensions (w-h-d)	<b>100x115x135 mm</b>
Weight	<b>0.85 Kg approx</b>

## Climatic Data

Ambient temperature (operation)	<b>-25 ÷ +70 °C</b>
De Rating Ta > 50 °C	<b>- 2.5%(In) / °C</b>
Ambient temperature Storage	<b>-40 ÷ +85 °C</b>
Humidity at 25 °C no condensation	<b>95% to 25 °C</b>
Cooling	<b>Auto Convection</b>

## Norms and Certifications

Conforming to:

- IEC/EN 60335-2-29
- EN60950/UL1950,Electrical safety
- 89/336/EEC,EMC Directive
- 2006/95/EC (Low Voltage)
- DIN41773 (Charging cycle)
- Emission: IEC 61000-6-4
- Immunity: IEC 61000-6-2.CE

## Signal Output (free switch N°2 contact)

Main or Backup Power	<b>Yes</b>
Low Battery	<b>Yes</b>
Fault Battery	<b>Yes</b>

## Type of Signal Output Contact

Max. current can be switched (EN60947.4.1):	<b>Resistive load</b>
Max. DC1: 30 Vdc 1 A; AC1: 60 Vac 1A	<b>Min. load</b>
Min.1mA at 5 Vdc	

## Input Data

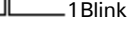
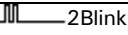
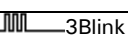
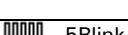
Nominal Input Voltage (2 x Vac)	<b>115 – 230</b>
Input Voltage range (Vac)	<b>90 – 135 / 180 - 264</b>
Inrush Current (Vn and In Load) I2t	<b>≤ 16 A ≤ 5 msec.</b>
Frequency	<b>47 – 63 Hz ±6%</b>
Input Current (115 – 230 Vac)	<b>3.3 – 2.2 A</b>
Internal Fuse	<b>6.3 A</b>
External Fuse (recommended)	<b>16 A (MCB curve B)</b>

## Battery Output (Battery Care)

Boost charge (25 °C) (Typ. at In)	<b>28.8 Vdc</b>
Max. time Bust Charge (tpy. At In)	<b>15 h</b>
Min. time Bust Charge (tpy. At In)	<b>1 min.</b>
Trickle charge (25 °C) (Typ. at In)	<b>27.5 Vdc</b>
Jumper Configuration battery type (V cell) Ni-Cd (optional)	<b>2,23;2,25;2,27;2,3; 1,41-1,5 (20 elem.)</b>
Recovery Charge	<b>2 – 18 Vdc</b>
Charging. Max Ibatt (In)	<b>10 A ± 5%</b>
Efficiency (50% of In)	<b>88%</b>
Charging current limiting Iadj	<b>20 ÷ 100 % / In</b>
Quiescent Current	<b>≤ 5 mA</b>
Charging Curve automatic: IUoUo	<b>3 stage</b>
Detection of element in short circuit	<b>Yes</b>
Short-circuit protection)	<b>Yes</b>
Over Load protection	<b>Yes</b>
Over Voltage Output protection	<b>Yes</b>
Adjustable charging current (% In)	<b>20 ÷ 100</b>

## Charging

An automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging it is Voltages and current stabilized IUoUo. The state of charging battery and Auto-diagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

	State	Diagnosis LED	Battery Fault LED
Charging Type	Trickle	1 Blink/sec	<b>OFF</b>
	Boost	2 Blink/sec	<b>OFF</b>
	Recovery	5 Blink/sec	<b>OFF</b>
Auto diagnosis	Reverse polarity	 1Blink	<b>ON</b>
	Battery No connect	 2Blink	<b>ON</b>
	Element in Short C.	 3Blink	<b>ON</b>
	Replace Battery	 5Blink	<b>ON</b>

