



Rectifier – Battery Charger

DOUBLE BRANCH RECTIFIER, OUTPUT +/-1%

Special solution with flooded batteries or NiCd with output voltage 110 or 220 Vdc up to 500 A

ADBR



Industrial applications:

Oil&Gas (Petrochemicals Offshore, Onshore, Pipelines);
Energy & Power Generation (Transmission, Distribution);
Transportations (Rail, Airport, Shipping);
Water (Desalination, Treatment);
Instrumentation & Process control
(Chemical, Mining, Steel, Paper);
All industrial applications;



ADBR series is a double branch rectifier particularly suitable when Pb flooded batteries and NiCd are required and to ensure, at the same time, a tolerance of the output voltage within +/-1%.

The typical characteristic of the double branch rectifiers is the physical separation of battery and load in outputs. Because flooded and NiCd need 3 levels of charge as maintenance, boost and manual charge, equalizing. During the operation the DC voltage window is wide, from the minimum battery voltage to manual charge. Too variable for connecting the load directly to the battery branch. The split outputs are mandatory to divide the charger from the load! The aim of the SEE Lever series is provide two SCR rectifiers one for battery charge and one more stable as DC load power supply. Battery charger we usually call BATTERY BRANCH, the power supply called SYSTEM BRANCH. Battery branch charges the batteries by typical voltage needing, and the system branch supplies load independently to the battery with tolerance

General characteristics

Mains supply voltage 3ph 400Vca $\pm 10\%$
(other voltage can be chose)
Input frequency 50/60 Hz 5%
Output rated voltage 110 or 220Vdc
($\pm 1\%$ with present mains)



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+/- 1% when mains is present (110Vdc or 220Vdc +/-1%). Through an appropriate change over, the battery will be connected to the load in case of failure of the mains or failure of one of the two rectifiers.

Battery branch (SCR technology)

Type: total controlled SCR 6pulse
Charge current: following chart of model
Ripple: 1%
Operation: Automatic, recharge wave
"IU" DIN 41773
Static stabilization: ± 0,5%

System branch (SCR technology)

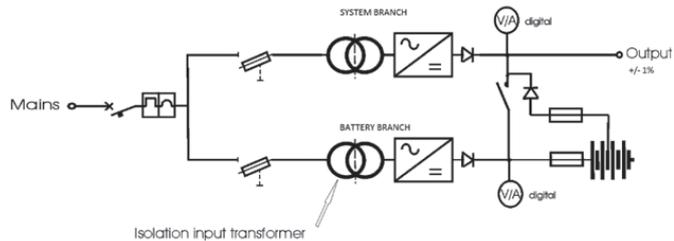
Type: total controlled SCR 6pulse
Output current: following chart of model
Output tolerance: ± 1%
Static stabilization: ± 0,5%
The rectifier is suitable to recharge the following types of battery:
- PB FLOODED BATTERY TYPE
- NICD BATTERIES

Main components

A.C. input Circuit Breaker MCB
N°2 Three-phase power input transformer, one of each branch
N°2 Converter SCR 6 pulse totally-controlled Thyristor Bridge.
The electronic control board of the Thyristor Bridge can be predisposed in Test Operation (it is usable for verifying the various thresholds of voltage)
L-C filter
Battery circuit breaker

Environment characteristics

Acoustic Noise dBA < 60 to 1 mt
Cabinet Cooling NATURAL
Environment temperature °C 0 ... +50
Storage temperature °C -20 a +70
Relative humidity ≤ 95% without condensing
Altitude 1000 mt Above Sea Level



The rectifier provides the system AMPERIS "AEES" (Emergency Exchange System) > The maximum reliability of operation <

ADBR rectifier series includes two units of AC/DC conversion which work independently when input power is present. The converter "battery branch" charges the battery independently from the load; contemporarily the "system branch" will independently supply the load to a voltage threshold with tolerance ± 1% from the voltage of charge the batteries.

Normal operation

During the normal operation in presence of mains the two converters they are independent. The battery charger rectifier will charge the battery while the system rectifier will supply the load with a stabilized voltage with tolerance ± 1%.

Operation in black-out

In case of total black-out of the mains or failure of both rectifiers, it's automatically activated a sequence which provides the direct connection of load to the battery.

Failure of Load Branch

In case of failure of the system branch it will be activated, in automatic, the exchange that will give the assignment to the branch battery to feed both the load and contemporary charge of the battery with an emergency threshold voltage $V_n + 10\%$ (adjustable).

Failure of Battery Branch

In case of failure of battery branch it will be activated, in automatic, the exchange that will give the assignment to the system branch to feed both the load and contemporary charge of the battery with an emergency threshold voltage $V_n + 10\%$ (adjustable). When mains restores, the system in automatic will return to work leaving to each converters its own operation.