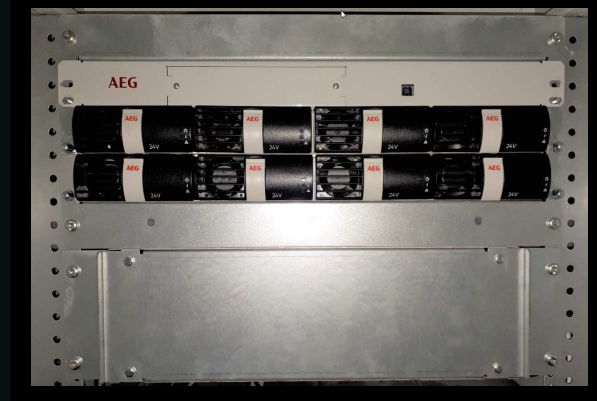


PROTECT RCS MIP^e NEW GENERATION

Replacement kit for Industrial and
Telecom power cores



State of the art switch mode technology, N+1 redundant **Protect RCS MIP^e** rectifier system is designed to be scalable, simple to use and easy to maintain with hot swappable rectifier modules. It allows you to benefit from low electromagnetic pollution and high efficiency, resulting in a cost effective system with reduced operating costs, short delivery time and prepared for possible future power expansion.

Typical applications

Replacement of AEG brand power cores on old industrial MIP and telecom systems in :

- Power generation
- T&D
- Oil & Gas
- Petrochemical and chemical
- Heavy industry
- Mining industry
- Transportation and signaling

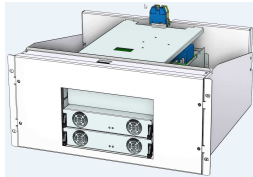
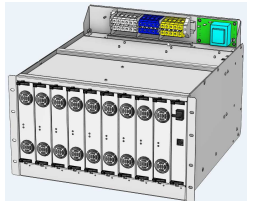
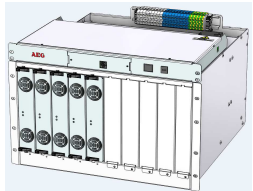

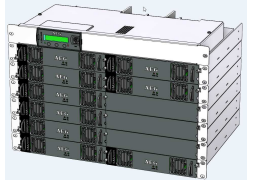
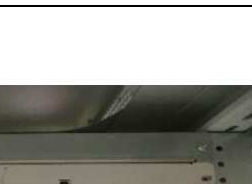
FEATURES

- Full hardware and functional compatibility with old standard systems
- Allows to replace only the power cores of old systems at site to extend their lifetime and to solve obsolescence problems
- System power up to 32kW, 24V to 220VDC
- Technical advantages of MIP^e new generation:
 - Low input current harmonics and high power factor, high efficiency redundancy of rectifier modules
 - Low MTTR due to modular design
 - Low DC voltage ripple for an optimized battery life time
 - Power increase possibility on site
 - Digital processing and setting of all parameters
 - Monitoring of all parameters via the front panel display (available as option)
 - Built-in intelligent battery management
 - Temperature-compensated charge voltage regulation
 - Manual or automatic high rate charge
 - Larger alarm and event logger, with a date and time-stamped event log memory
 - Large communication facility options
 - Inbuilt programmable logic control to provide a wide range of interaction possibilities with external systems

BENEFITS

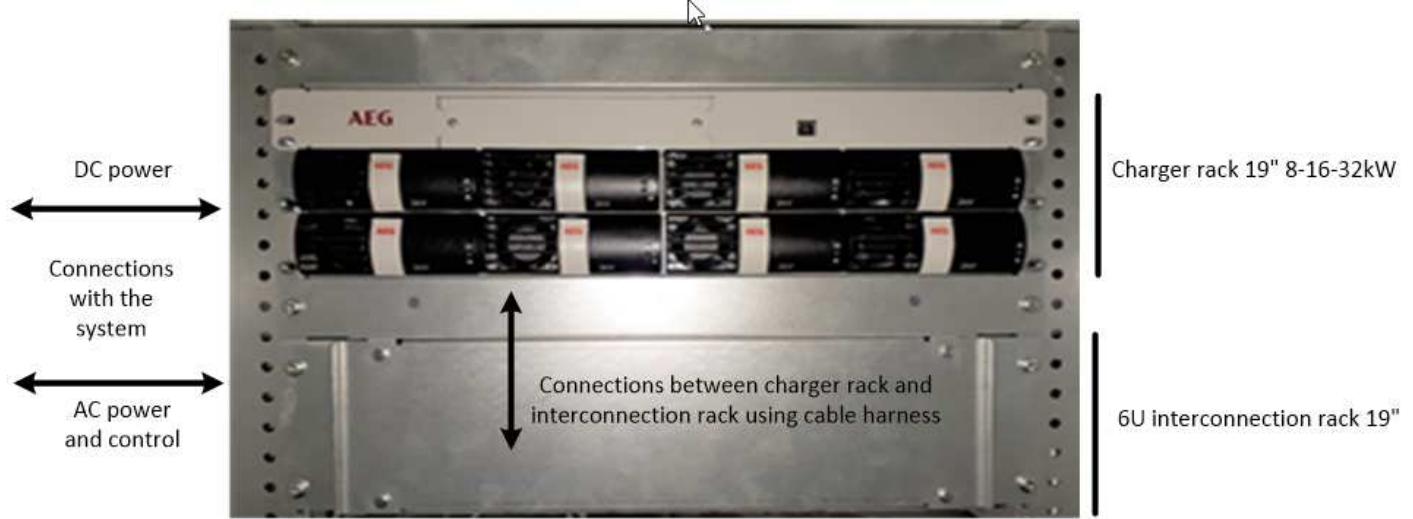
- Existing pre-defined configurations to permit reduced lead times
- Fully adaptable to configurations at site - hardware and software
- Increase the system reliability and technical performances
- Compatible with all industrial battery types (lead acid, NiCd) and Li-Ion
- Compatible with MIP^e DC/DC converters (PMC range)
- Reduces capital and operational expenses (CAPEX & OPEX)
- Ease of installation, start-up & maintenance, low Mean Time To Repair (MTTR)
- International service support

Protect RCS MIPE replacement kit - compatibility with old systems

Old system type	Controller type	Replacement kit type	Code	Picture of old system
MIP 3 rectifier 24V-48V-110V-220VDC	GCAU	8kW + MIP interconnection rack - 10U	8kW-3R 20014173	
MIP 9 rectifier 24V-48V-110V-220VDC	GCAU vertical	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U	8kW-9R.VERT 20014176 16kW-9R.VERT 20014177	
MIP 9 rectifier 24V-48V-110V-220VDC	GCAU-1U	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U	8kW-9RV1/V2 20014191 16kW-9RV1/V2 20014192	
MIP 18 rectifier 24V-48V-110V-220VDC	GCAU-1U	16kW + MIP interconnection rack - 11U 32kW + MIP interconnection rack - 13U	16kW-18RV1/V2 20014193 32kW-18RV1/V2 20014194	
Telecom SM1300 24VDC	NRC50	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U 32kW + MIP interconnection rack - 13U	Available Q2/2023	
Telecom SM2000 48VDC	NRC50	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U 32kW + MIP interconnection rack - 13U	Available Q2/2023	
Telecom SM1300 24VDC	ACM1000	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U 32kW + MIP interconnection rack - 13U	Available Q2/2023	
Telecom SM2000 48VDC	ACM1000	8kW + MIP interconnection rack - 10U 16kW + MIP interconnection rack - 11U 32kW + MIP interconnection rack - 13U	Available Q2/2023	

Example of replacement Inside a system :





Protect RCS MIPE replacement kit - technical data sheet

SYSTEM	24 V	48 V	110 / 120 V	220 V	
INPUT					
Nominal input voltage	230 V single phase $\pm 20\%$ (+20% -60% functional) or 400 V three phase with neutral $\pm 20\%$ (+20% -60% functional)				
Frequency	50 Hz or 60 Hz, $\pm 5\%$				
Current consumption	8 kW-4 rectifiers rack 16 kW-8 rectifiers rack 32kW-16 rectifiers rack	37 A single phase mains – 24 A three phase with neutral – nominal mains voltage 74 A single phase mains – 36 A three phase with neutral – nominal mains voltage 72A three phase with neutral – nominal mains voltage			
Inrush current	1.5 nominal peak current				
THDI	<5 %				
Power factor	0.99				
Mains connections	Integrated mains terminal block compatible for single phase and three phase + neutral mains - Wires capacity 35mm ²				
OUTPUT					
Maximum output current	8 kW – 4 rectifiers rack 16 kW – 8 rectifiers rack 32kW - 16 rectifiers rack	200 A 400 A 800 A	160 A 320 A 640 A	64 A 128 A 256 A	32 A 64 A 128 A
Voltage range	20 – 32.4 V				
Commissioning voltage	33 V				
System earth	Floating/positive or negative output connected to earth				
Static voltage regulation	<1 %				
Dynamic voltage regulation	Load change 10 – 90 %, 90 % – 10 % – deviation 5 %				
Current regulation	0 to +6 %				
Ripple voltage	Max. 0.2 % rms typical on rectifier output, battery not connected				
Output connections	Power connection to DC load and to battery through battery shunt 400 A max				
MANAGEMENT					
Common alarm connection	1 Form C relay contact – Rating 60 VAC @ 2 A, 24 VDC @ 2 A & 60 VDC @ 0.1 A				
Control panel (option)	Multi-functional LCD with 2 LEDs indicate the system status (delivered loose with a 2m cable for cabinet front door installation)				
PROTECTION					
Input/battery/load	The existing one in the cabinet can be used				
Soft start	Yes				
Protection	The rectifier has built-in protection functions against short circuit, over and under AC input voltage, over and under DC output voltage as well as high temperature				
Decoupling fuse	Yes – within rectifier				
MECHANICAL					
Degree of protection	Standard IP20 from front after integration inside cabinet				
Equipment color	RAL 7035, powder coated, textured paint (special colors as option)				
Dimensions (H x W x D) & weight	19" compatible – Height : 10U (444.5 mm) for 8 kW rack / 11U (489.0 mm) for 16 kW rack / 13U (577.9mm) for 32kW rack 600mm or 480mm depth versions - weights with rectifiers 8kW=22kg/16kW=32kg/32kW=63kg				
Acoustic noise @ 1 m	≤ 65 dBA				
Connections	DC power : on the 19" MIPE rack connection bars AC power and control : on the interconnection rack using the same connectors present on the old system				
ENVIRONMENTAL					
Type of cooling	Rectifier modules are forced air cooling with electronic speed control				
Operating temperature	0 °C to +40 °C with a de-rating of 1.25 %/°C between 40 °C and 55 °C				
Storage temperature	-25 °C to +70 °C				
Operating humidity	10 % to 95 % R H non-condensing				
Installation height	0 to 1000 m – de-rating @ 1 % per 100 m above 1000 m up to 3000 m				
STANDARDS					
Safety	EN 60950-1				
EMC	EN 55022 Level B, EN 61000.6-1,2,3,4, EN 61000.3-2, EN 61000.3-3, EN21000, EN 50121-3-2/IEC 62236-3-2 - EN 50121-4/IEC 62236-4 - EN 50121-5/IEC 62236-5 - IEC 60146-1-1 Class B 2kV				
Environment	ROHS WEEE				
Approvals & certification	CE				

Protect RCS MIPe replacement kit

STANDARD SYSTEM

The Protect RCS MIPe replacement kit has been pre-configured with a number of the most commonly requested features built-in as standard. These systems are available “off-the-shelf” with standard drawings and standard user documentation.

- Single system or dual system
- Input voltage configuration 1 or 3 phase +N
- 19" sub-rack with up to 16 - 2kW hot swappable rectifier modules
- Digital control card
- Tropicalized control electronics boards
- Common fault remote alarm
- Power and control cable marking
- Low smoke – halogen free wires and cables
- Replacement kit content :
 - ✓ 19" charger rack 8-16 or 32kW
 - ✓ Rectifier modules 24V-48-110V or 220VDC
 - ✓ 3U Interconnection rack for full Compatibility of AC and control Cables present on the old system To be replaced
 - ✓ New rack cable harness
 - ✓ Parameter setup adapted to Existing charger configuration at site
 - ✓ System up-dated drawings with the New solution
 - ✓ Installation manual

OPTIONS

The standard system can be enhanced by additional options. The system specific drawing packages and user documentation will be automatically generated to reflect the actual option configuration.

To provide exact solutions for each application, we offer a wide range of options:

Alarms/Signaling/Measurement

- Multi-functional LCD display with 2 LEDs indicate the system status
- Relay card (8 free contacts each), LED Box
- Alarms on protection devices
- Remote commands via analog and digital inputs, e.g. boost charge, battery room fan, remote shutdown
- High rate interlock (automatic and manual)
- Battery cell fault alarm

Communication

- RS232/RS485 interface
- RS232/RS485 Modbus protocol
- TCP/IP interface
- Protocol converters (Profibus DP, J-bus DNP3, IEC 61850)
- Monitoring and management software

Battery options

- Battery presence and battery autonomy test
- Battery temperature probe

Mechanical options

- Fixing brackets
- Module slot blanking plate

Additional options are available upon request.

AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on: www.aegps.com