



Product Range Power Supplies



2020 / 12



DC / DC Power Supplies 48 V DC Output

type numbers: 00791 | 00845
00846 | 00847



DC / DC Power Supplies 12 V DC Output

type numbers: 01310



DC / DC Power Supplies 12 V DC Output

type numbers: 01268



DC / DC Power Supplies 12 V DC Output

type numbers: 01313



DC / DC Power Supplies 19 V DC Output

type numbers: 00122 | 00906



AC / DC Converter for Field Applications
230 V AC to 24 (28) V DC / 100 A

type number 00888



Power Supply / Battery Charger
24 (28) V DC 70 A

type numbers: 00424 | 00426



Power Supply / Battery Charger
24 (28) V DC / 100 A to 120 A

type number 00441



Power DC / AC Supply 700 VA
Pure Sine Wave Inverter

type number 00886



Power DC / AC Supply
Pure Sine Wave Inverter

type number 01279



DC / DC Power Supply 12 V DC Output

type number 01346



DC / DC Power Supply 21 V DC Output

type number 01341



Modular Power System acc. VG 96916-20
„MoFess“ Module for Military Ground Vehicles



Connector Box 230 V AC

type number 00865

DC / DC Power Supplies 12 V DC Output

type numbers: 00791 | 00845
00846 | 00847



type number
00791 +
00845



type number
00846 +
00847

type number 00791 + 00846

Input voltage:	18.0 V DC to 36.0 V DC
Consumption:	0.05 A to 5.0 A at 24 V DC
Output voltage:	12.0 V DC
Output current:	8.0 A
Connector in / out:	SJT / PG (type number 00791) SJT / SJT (type number 00846)

type number 00845 + 00847

Input voltage:	11.0 V DC to 36.0 V DC
Consumption:	0.05 A to 2.5 A at 24 V DC
Output voltage:	12.0 V DC
Output current:	4.0 A
Connector in / out:	SJT / PG (type number 00845) SJT / SJT (type number 00847)

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Main Feature:

This family of DC / DC power supplies is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions:	194 x 101 x 40 mm (W x D x H)
Weight:	approx. 1 kg
Ground terminal:	M8
Finish / color:	Powder coating, green RAL 6031 HR or TBD
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 -5
Voltage accuracy:	± 1.0 % max
Temperature coefficient:	± 0.05 % / °C max
Ripple & noise, 20 MHz BW:	60 mV RMS
max.:	150 mV PP
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461E or TBD

Environmental Data (acc. to MIL-STD-810F):

Temperature:	-40 °C to +85 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Option:

Remote control for electronically switch on and off.

DC / DC Power Supplies 48 V DC Output

type number: 01310



type number
01310

Picture shows custom specific cable treatment

type number 01310

Input voltage:	10.0 V DC to 36.0 V DC
Consumption:	0.07 A to 2.5 A at 24 V DC
Output voltage:	48 V DC
Output current:	1.56 A max
Connector in / out:	SJT / PG

Main Feature:

This family of DC / DC power supplies is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions:	194 x 101 x 40 mm (W x D x H)
Weight:	approx. 1 kg
Ground terminal:	M8
Finish / color:	Powder coating, green RAL 6031 HR or TBD
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 -5
Voltage accuracy:	± 1.5 % max
Temperature coefficient:	± 0.03 % / °C max
Ripple & noise, 20 MHz BW:	200 mV RMS
max.:	400 mV PP
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461E or TBD

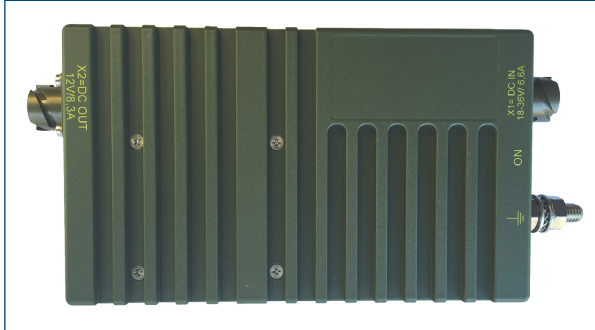
Environmental Data (acc. to MIL-STD-810F):

Temperature:	-40 °C to +85 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

DC / DC Power Supply 12 V DC Output

type numbers: 01268



type number 01268

Input voltage:	18.0 V DC to 36.0 V DC
Consumption:	0.05 A to 5.0 A at 24 V DC
Output voltage:	12.0 V DC
Output current:	8.3 A
Connector In:	VG95234A-10SL-3PN A = VCC, B = GND, C = housing
Connector Out:	VG95234A-10SL-3SN A = VCC, B = GND, C = housing

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Main Feature:

This DC / DC power supply is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions:	194 x 101 x 40 mm (W x D x H)
Weight:	approx. 1 kg
Ground terminal:	M8
Finish / color:	Powder coating, green RAL 6031 HR or TBD
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 –5
Voltage accuracy:	± 1.0 % max
Temperature coefficient:	± 0.05 % / °C max
Ripple & noise, 20 MHz BW:	60 mV RMS
max.:	150 mV PP
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461E or TBD

Environmental Data (acc.to MIL-STD-810F):

Temperature:	-40 °C to +85 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Option:

Remote control for electronically switch on and off.

DC / DC Power Supply 12 V DC Output

type numbers: 01313



type number 01313

Input voltage:	18.0 V DC to 32.0 V DC
Consumption:	0.05 A to 9.7 A at 24 V DC
Output voltage:	12.0 V DC
Output current:	15 A, max. 16.5 A
Connector In:	VG95234A-10SL-3PN
Connector Out:	VG95234A-10SL-3SN

Note: if permanent operation with full load, additional cooling may be necessary!

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Main Feature:

This DC / DC power supply is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions Case:	214 x 101 x 65 mm (W x D x H)
Weight:	approx. 1.7 kg
Ground terminal:	M8
Finish / color:	green RAL 6031 HR
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 -5
Temperature coefficient:	± 1.0 % / °C max
Ripple & noise, 20 MHz BW:	60 mV RMS
max.:	240 mV pk-pk
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461G Navy / Air Force fixed

Environmental Data (acc.to MIL-STD-810G):

Temperature:	-40 °C to +65 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Option:

Remote control for electronically switch on and off.

DC / DC Power Supplies 19 V DC Output

type numbers: 00122 | 00906



type number
00122



type number
00906

Main Feature:

This family of DC / DC power supplies is designed for automotive applications to be used under harsh environmental conditions. It operates as buck converter at a frequency of 80 kHz.

General features:

Input according to:	VG 96916 -5
Safety according to:	EN 60950-1
Isolation Voltage:	200 V DC In-Out
Isolation resistance:	10 ⁷ Ω
Dimensions:	175 x 113 x 58 mm (W x D x H)
Weight:	approx. 1 kg

By courtesy of roda mildef GmbH

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Technical Data:

Input voltage:	16.0 V DC to 34.0 V DC
Consumption:	0.02 A to 3.0 A at 24 V DC
Output voltage:	19.0 V DC ± 0.2 V DC indicated by LED on top
Output current:	max. 4.2 A
Connector in / out:	SJT / SJT
Efficiency:	typ. > 83 % at 24 V DC
Protected against:	<ul style="list-style-type: none"> ■ input reverse polarity ■ over voltage ■ short-circuit ■ no-load
Ripple & noise:	< 20 mV RMS at 20 MHz

Environmental Conditions:

Protection:	IP 65 (EN 60529)
EMC: VG 95373:	LA01; SA02; SA04; LF01; LF02; LF03; LF05; SF03; SF01
MIL-STD 461E:	CE102; CS101; CS114; CS115; CS116; RE101; RE102; RS101; RS 103

Conditions according to MIL-STD-810F:

Temperature:	-40 °C to +85 °C (operating) -46 °C to +90 °C (storage)
Temp. shock:	-40 °C to +70 °C (ΔT < 1 min)
Humidity:	up to 95 % rel.
Low pressure (altitude):	up to 4500 m operating
Vibration:	1.5 g, 60 Hz to 400 Hz 1.0 g, 400 Hz to 2000 Hz
Shock :	10 g, 6 ms (operating)

Option:

Output: 24 V DC / 4.0 A

AC / DC Converter for Field Applications 230 V AC to 24 (28) V DC / 100 A

type number 00888



Main Feature:

This Power AC / DC Converter was designed for open air field applications, to be supportive for battery charge for mobiles from line voltage with high power.

The provided stands allows a stable distance to the earth and the required ventilation of the converter.

Input is electrically isolated from output according to EN 60950-1.

Technical data:

Input voltage:	230 V AC \pm 15 %, 50 Hz.
Consumption:	max. 16 A sinusoidal conform to EN 61000-3-2
Output voltage:	28 V DC +3, -5 % for 85 A, 24 V DC +3, -5 % for 100 A
Output current:	max. 100 A 20 °C, limited for overload or increased temperature
Output release:	only after proved connection with vehicles supply system
Output protection:	no-load proof short-circuit proof
Inrush current:	< 30 A PK at 230 V AC
Efficiency:	typ. 83 % at 230 V AC and 20 to 80 % load

By courtesy of Rheinmetall Landsysteme GmbH

Ask for further technical information!

Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Isolation voltage:	floating output in accordance to VDE 0554
MTBF:	> 15.000 h at 25 °C
Dimensions:	300 x 480 x 191 mm, (W x D x H) with stands
Weight:	\leq 15 kg
Housing:	<ul style="list-style-type: none"> ■ made of cast G-AlSi12 (DIN 1725) ■ two carrying handles integrated in the heat sink ■ captive connector covers ■ ground terminal M8 on rear ■ four pierced holes a' Φ 25 mm for a steel cable as anti-theft device
Protection:	IP 66 (EN 60529)

Environmental Data: MIL-STD-810F

Operating temp.:	-46 °C to +63 °C
Humidity:	95 % rel. with thawing
Salt fog:	5 % at 35 °C
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms
EMI / EMC:	MIL-STD-461C respectiv. D
ESD.:	EN 61000-4-2
Lightning protect.:	STANAG 4145 / AEP4, annex a (Land) /07.1990
NEMP:	STANAG 4236, Issue 2

Accessories: Connecting cables:

1) 3 m screened lead, 230 V AC with integrated 16 A PRCD-S guard circuit (TBD) and CEE – 230 V respectively Souriau Series 847 connectors.

2) 5 m screened lead (power supply to mobile) with VG 95234 connectors of type M-24-12PN, respectively 24-125 N

Power Supply / Battery Charger 24 (28) V DC / 70 A

type numbers: 00424 | 00426



type number
00424



Rear view



type number
00426

Main Feature:

This range of modular AC / DC-Power-supplies is designed for charging batteries and battery back-up applications for harsh environments and mobile applications.

Electrical Data:

Input:

Nominal voltage:	230 V AC \pm 15 %
Line frequency:	45 Hz - 60 Hz
Consumption:	< 12 A (depending on model)
Inrush current:	< 30 A
Harmonics (current):	Power factor corrected to EN 61000-3-2
Power factor:	> 0.95

Output:

Output voltage:	28 V DC (intern. adj. 26 V DC - 28 V DC)
Output tolerance:	-4 % / + 0 % (0 – 100 % load)
Output current:	30 A / 40 A / 50 A / 60 A (depending on model)
Output protection:	Current limit (110 % of I_{Nom}) Short circuit protection Over voltage shutdown (125 %) Over temperature shutdown with automatic recovery
Minimum load:	no minimum load required
Efficiency:	typ. 85 % – 88 % at 230 V AC
Isolation:	Input-output: 3000 V AC Input-chassis: 1500 V AC Output-chassis: 200 V DC
Safety:	EN 60950-1

Signals / Alarms:

Display:	Green LED: Power-on-signal Red LED: Alarm (batt-low)
Alarms (Relay contact):	Power ok, Battery-low



Power Supply / Battery Charger 24 (28) V DC / 70 A

type numbers: 00424 | 00426

Connectors:

Line input:	ECTA 133, 3-pin-connector
DC-output:	High current studs (M8)
Alarms:	SJT00RT, 6-pin-connector
Ground terminal:	Studs M8 on front or rear

Environmental Data:

Protection:	IP 65 (EN 60529)
Cooling:	Convection cooling Automatic temperature controlled fan above +50 °C heatsink temperature

Environmental Data (acc. to MIL-STD-810F):

Operating temp. range:	-32 °C to +63 °C
Operating temp. optional:	-46 °C to +85 °C
Derate power:	2.5 % / °C above 50 °C ambient for Version 40 A - 60 A
Humidity:	0 % to 100 % rel.
Salt fog:	5 % at 35 °C
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Mechanical Specifications:

Dimensions:	360 x 350 x 124 mm (W x D x H) (overall, without connectors)
Weight:	< 10 kg (depending on model)
Material:	Aluminium
Finish / Color:	Powder coating, green RAL 6031

Available Options:

Line Input Voltages:	Single Phase 110 V AC 60 Hz or 95 V AC - 264 V AC, 50 / 60 Hz (wide range input)
Connectors:	(input / output) others on request
Color:	Black or white or on request
Line Filter / EMC:	FCC / EN / VG / MILstandards / TBD
RoHS-Compliance:	On request

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

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Power Supply / Battery Charger 24 (28) V DC / 100 A to 120 A

type number 00441



Rear view

Main Feature:

This range of modular AC / DC-Power-supplies is designed for charging batteries and battery back-up applications for harsh environments and mobile applications.

Electrical Data:

Input:

Nominal voltage:	400 V AC \pm 10 % (3 phase) and 230 V AC \pm 15 % (1 phase)
Line frequency:	50 Hz - 60 Hz
Consumption:	< 13 A at 230 V AC
Inrush current:	< 30 A
Harmonics (current):	Power factor corrected to EN 61000-3-2 for 230 V AC
Power factor:	typ. 0.95 (1 phase with PFC) typ. 0.80 (3 phase)

Output (single phase powered):

Output voltage:	28 V DC (int. adj. 24 V DC - 28 V DC)
Output tolerance:	+0 % / -4 % / (0 % - 100 % load)
Output current:	80 A at 24 V DC
Output power:	> 1900 W max.

Output (three phase powered):

Output voltage:	28 V DC (int. adj. 24 V DC - 28 V DC)
Output tolerance:	+0 -4 % / (0 - 100 % load)
Output current:	120 A for 24 V DC
Output power:	2880 W max.

General Features:

Safety:	EN 60950-1
Output protection:	Current limit (120 % of I_{Nom}) Short circuit protection Over voltage shutdown (125 %) Over temperature shutdown with automatic recovery
Minimum load:	no minimum load required
Efficiency:	typ. 88 % at 400 V AC typ. 83 % at 230 V AC
Isolation:	Input-Output: 3000 V AC Input-Chassis: 1500 V AC Output-Chassis: 200 V DC

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Power Supply / Battery Charger 24 (28) V DC 100 A to 120 A

type number 00441

Connectors:

Line input 230 V AC:	ECTA 133, 3-Pin-Connector
Line input 400 V DC:	ECTA 133, 5-Pin-Connector
DC-output:	High current studs (M8)
Alarms:	SJT00RT, 6-Pin-Connector
Ground terminal:	Studs M8 on front or rear

Environmental Data:

Protection:	IP 54 (EN 60529)
Cooling:	Convection cooling temperature controlled fan above +50 °C heatsink temperature

Environmental Data (acc. to MIL-STD-810F):

Operating temp. range:	-40 °C to +70 °C
Derate power:	2 % / °C for $T_{amb} > 50$ °C
Humidity:	0 % to 100 % rel.
Salt fog:	5 % at 35 °C
Vibration.:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Signals / Alarms:

Display:	Green LED: Power-on-Signal Red LED: Alarm (Batt-low)
Alarms (relay contact):	Power ok, Battery-low

Mechanical Specifications:

Dimensions:	360 x 500 x 124 mm (W x D x H) (overall, without connectors)
Weight:	approx. 16 kg
Material:	Aluminium
Finish / Color:	Powder coating, green RAL 6031 or TBD

Options:

Line input voltages:	Single Phase 110 V AC 60 Hz or 95 V AC - 264 V AC, 50 Hz / 60 Hz (Wide Range Input)
Line filter / EMC:	FCC / EN / VG / MILStandards / TBD
RoHS-compliance:	On request

Ask for further technical information!
Functional or interface modifications can be realized on
request. Each configuration change causes a new type
number.

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Power DC / AC Supply Pure Sine Wave Inverter

type number 00886



Performances:

This pure sine wave inverter was built to supply 230 V AC for electrical equipment of ground vehicles from the vehicle electrical system voltage of 24 V DC.

- Pure sine wave output (THD < 3 %)
- Power save function
- Standby function
- 93 % efficiency at full load
- Driving highly reactive & capacitive load at start moment
- LED Indication for input voltage, output load level and failure status
- Output controlled by residual current device
- Reverse polarity protection by special coded connector
- Output frequency can be fixed internally on 50 Hz or 60 Hz
- Other performances on request

Technical Data:

Continuous output power:	700 VA
Maximum output power (3 Min.):	800 VA
Surge rating:	1400 VA
Input voltage (nominal):	24 V DC
Input voltage:	21 V DC to 30 V DC
Output voltage:	230 V AC +/- 3 %
Output frequency:	50 Hz +/- 0.05 %
Output waveform:	Pure sine wave (THD <3 %)
Efficiency (full load):	93 %
No load current:	0.6 A
Standby current:	0.15 A
Input level indicator:	Red / orange / green LED
Load level indicator:	Red / orange / green LED
Failure indicator:	Red LED
Protection:	Overload, short circuit, over- / under- input voltage, over temperature, residual-current-operated protective device (RCD)
Safety:	EN60950
EMC:	EN55022:1997, EN55024:1997, EN61000-3-2:1998, EN61000-3-3:1995
Electrical isolation input / output:	Isolation test voltage 500 V DC
Temperature:	-10 °C to +40 °C (operating) -32 °C to +70 °C (storage)
Cooling:	Convection
Dimensions:	426 x 160 x 141 mm (W x D x H)
Weight:	approx. 7.5 kg
Protection:	IP 55

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Power DC / AC Supply Pure Sine Wave Inverter

type number 01279



Performances:

This pure sine wave inverter was built to supply 230 V AC for electrical equipment of ground vehicles from the vehicle electrical system voltage of 24 V DC.

- Pure sine wave output (THD < 5 %)
- Power save function
- Standby function
- 89 % efficiency at full load
- Driving highly reactive & capacitive load at start moment
- LED Indication for input voltage, output load level and failure status
- Output controlled by residual current device
- Reverse polarity protection by special coded connector
- Output frequency can be fixed internally on 50 Hz or 60 Hz
- Other performances on request

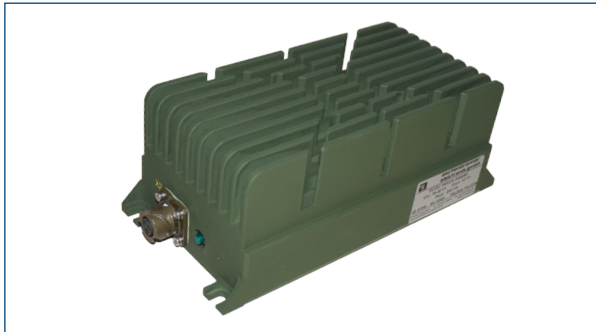
Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Technical Data:

Continuous output power:	1000 VA
Maximum output power (1 min.):	1150 VA
Surge rating (1 sec.):	1750 VA
Input voltage (nominal):	24 V DC
Input voltage:	21 V DC to 33 V DC
Output voltage:	230 V AC +/- 5 %
Output frequency:	50 Hz +/- 0.5 %
Output waveform:	Pure sine wave (THD < 5 %)
Efficiency (full load):	89 %
No load current:	< 0.8 A
Standby current:	< 0.05 A
Input level indicator:	Red / orange / green LED
Load level indicator:	Red / orange / green LED
Failure indicator:	Red LED
Protection:	Overload, short circuit, over- / under- input voltage, over temperature, residual-current device (RCD) +40 °C to +60 °C derating 400 VA max.
Safety:	EN60950
EMC:	EN55022, EN55024, EN61000-4-2, 3, 4, 5, 6, 8, 11 EN6100-3-2, -3-3, MIL-STD461G, CE102 (Basic Curve), RE102-4 (Navy Fixed & Air Force)
Electrical isolation input / output:	Isolation test voltage 500 V DC
Temperature:	-31 °C to +40 °C (operating) -40 °C to +70 °C (storage)
Cooling:	Convection
Dimensions:	420 x 180 x 86 mm (W x D x H)
Weight:	approx. 7.5 kg
Protection:	IP 65

DC / DC Power Supply 12 V DC Output

type numbers: 01346



type number 01346

Input voltage:	18.0 V DC to 32.0 V DC
Consumption:	0.05 A to 9.7 A at 24 V DC
Output voltage:	12.0 V DC
Output current:	15 A, max. 16.5 A
Connector In:	VG95234A-10SL-3PN
Connector Out:	VG95234A-10SL-3SN

Note: if permanent operation with full load, additional cooling may be necessary!

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Main Feature:

This DC / DC power supply is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions Case:	214 x 101 x 80 mm (W x D x H)
Weight:	approx. 1.9 kg
Ground terminal:	M8
Finish / color:	green RAL 6031 HR
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 -5
Temperature coefficient:	± 1.0 % / °C max
Ripple & noise, 20 MHz BW:	60 mV RMS
max.:	240 mV pk-pk
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461G Ground Army

Environmental Data (acc.to MIL-STD-810G):

Temperature:	-40 °C to +65 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Option:

Remote control for electronically switch on and off.



DC / DC Power Supply 21 V DC Output

type number: 01341



type number 01341

Input voltage:	18.0 V DC to 32.0 V DC
Consumption:	0.05 A to 9.7 A at 24 V DC
Output voltage:	21 V +/-5 %
Output current:	max. 9 A
Connector In:	VG95234A-10SL-3PN
Connector Out:	VG95234A-10SL-3SN

Note: if permanent operation with full load, additional cooling may be necessary!

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

Main Feature:

This DC / DC power supply is designed for automotive applications to be used under harsh environmental conditions.

Mechanical Specifications:

Material:	Aluminium
Dimensions Case:	214 x 101 x 65 mm (W x D x H)
Weight:	approx. 1.7 kg
Ground terminal:	M8
Finish / color:	green RAL 6031 HR
Protection:	IP 66 (EN 60529)

Electrical Data:

Input according to:	VG 96916 -5
Temperature coefficient:	± 1.0 % / °C max
Ripple & noise, 20 MHz BW:	100 mV RMS
max.:	240 mV pk-pk
Safety according to:	EN 60950-1
EMC / EMI:	MIL-STD-461G Navy / Air Force fixed requirement: shielded cables for INPUT and OUTPUT

Environmental Data (acc.to MIL-STD-810G):

Temperature:	-40 °C to +65 °C (operating) -46 °C to +90 °C (storage)
Humidity:	0 % to 100 % rel.
Vibration:	Fig. 514.5C3 for wheeled vehicles
Shock:	10 x 10 g / 6 ms

Option:

Remote control for electronically switch on and off.

Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles



This new modular **Power System for Military Ground Vehicles** based on a standard box incorporating up to three different power modules. The power inlet module (230 V AC) includes line filter, lightning protection (optional) and also an engine immobiliser and automatic kick-off connector. Another module is generating a clean and isolated line voltage of 230 V AC up to 12 A. This revolutionary concept is based on a new innovative high frequency transformer which saves about 70 % weight and volume compared to a conventional 50 Hz-transformer.

The clean 230 V AC-line is protected via a fault current protection switch (RCD) and can now be used for any consumer in the car like battery charger, computer a.s.o.

Another available module is a AC / DC-power back-up system with battery charger which is able to charge lead acid batteries up to 60 A (optional 100 A) at 24 V DC / 28 V DC.

More intermediate bus converter modules according to the new German military standard VG 96916-20 are available and all can be plugged into this standard power box system.

- Safe power for military ground vehicles (tanks, trucks, containers)
- Output power 1 kVA - 3 kVA
- Automatic power line disconnection at alarm start
- Input from distorted power lines and 230 V AC-emergency-generators
- Light weight high-frequency transformer
- Modular design for versatile use
- Flexible plug-in modules
- AC / AC-converter module
- Battery charger module up to 100 A
- DC / DC-modules acc. to VG-96916
- Lightning protection (up to 20 kA)
- EMI: MIL-Std 461 (optional)
- Protection class II (reinforced Isolation)
- High isolation 4 kV (DIN / EN61558)
- Input-output Isolation EN60950
- Protection degree IP 54 (or IP 65)
- Operating: -46 °C bis +85 °C

Higher power systems (up to 14 kVA) available with 3-phase input

Features:

- AC / AC and DC / DC power supply
- Connection to unknown 110 V AC / 230 V AC line systems (TN, TT-Systems) and generators
- Battery back-up + charging
- Intermediate bus voltage generation 400 V DC - 650 V DC
- Power line filter and lightning protection

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.



Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles

Available Modules:



Module NA-230-AW

Power Line Connection Module with Standard CEE-Plug and automatic disconnection and / or engine immobiliser
Option FI: EMI-Filter and Lightning Protector (build-in in Module NA)

type number 00992



Module NA-230

Power Line Connection Module with Standard CEE-Plug (230 V AC single Phase)

type number 01021



Module AC-TT

AC / AC High-Frequency-Isolation-Transformer
Output Power 2,5 kVA (Class II equipment)

type number 01020



Module DC-BAT

Battery-Back-Up Supply and Charger
28 V DC / 60 A (80 A pk) Input: 400 V DC

type number 00996



Module AC-BAT

Back-Up Power Supply and Charger 28 V DC / 60 A
Input: 230 V AC with reinforced isolation (Class II)

type number 01022



Module DC-TT

AC / DC High-Frequency-Transformer 2,5 kVA
(230 V AC into 400 V DC – Intermediate Bus)

type number 01023



Power Box „MoFess“

Enclosure Box for up to 3 Modules

type numbers: 00991 | 00994
| 01029 | 01030



Module SV-1224

DC / DC Intermediate Bus Voltage Converter
Dual Output: 12 V DC / 20 A and 24 V DC / 10 A
(Consult Factory for other Voltages / Currents)

type number 01024



Module NA-230-ST

Stand-alone Power Line Connection Module with Standard CEE-Plug (no enclosure required)

type number 01025

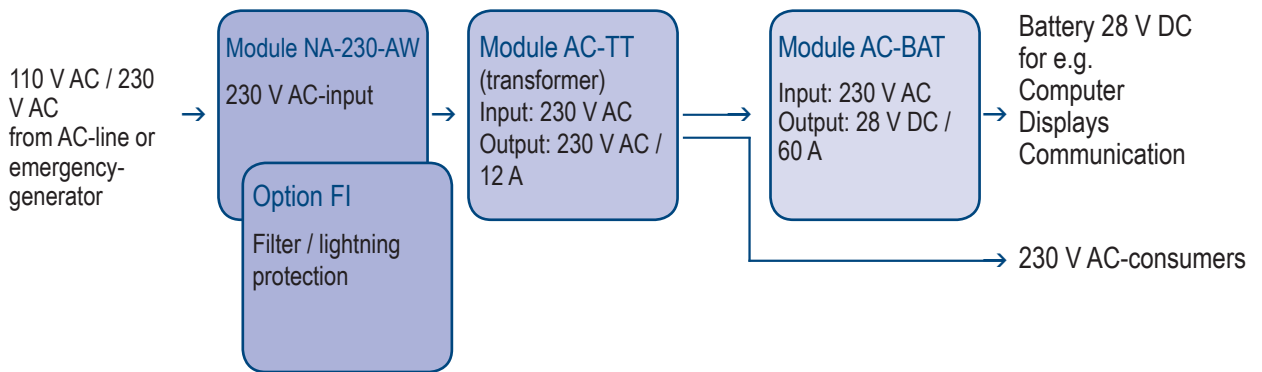


Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles

Block Diagram

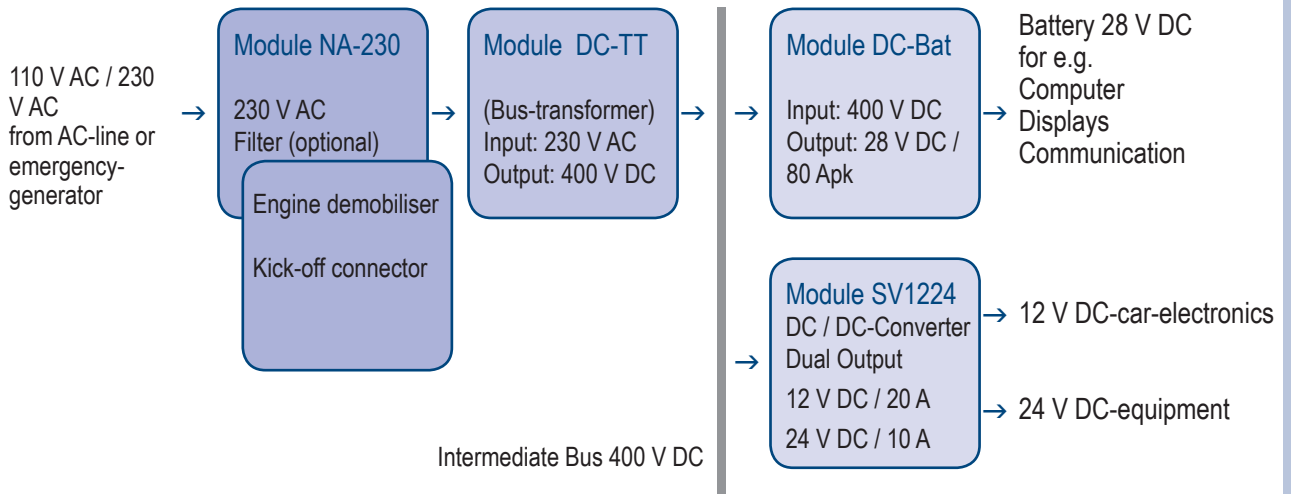
Modular Energy Generation and Distribution System

Typical application: AC-line input-module with EMC-Filter / lightning protection, high-isolation AC / AC-transformer and battery charger



Typical application with Intermediate Bus Voltage:

AC-line Input-Module with automatic kick-off-Connector, EMC-Filter / Lightning protection, AC / DC-Bustransformer and Battery charger



Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles



Module NA-230-AW: type number 00992
Module NA-230: type number 01021
(AC-Line connection Module 230 V AC)

Technical Specifications:

- AC-connector according to VG (3pole)
- Engine immobiliser
- NA-230-AW: automatic kick-off for power connector at engine start
- Manual connector release
- Water proof box to meet IP 54 - IP 65
- Protection Class II
- Weight appr. 5 kg

Option FI (EMC-Filter and Lightning Protection)

- Line filter acc. to MIL810 (VG or other MIL-Std. on request)
- Lightning protection up to 20 kA
- NEMP / tempest-line filter
- Weight: approx. 1 kg



Module AC-TT High Frequency AC / AC-Transformer type number 01020

Build to meet:	VDE / EN61558 (Isolation transformer)
Input voltage:	230 V AC (-15 +10 %) / 45 Hz - 400 Hz (optional: 115 V AC)
Harmonics:	Power factor corrected to EN / DIN 61000-3-2 (PFC)
optional:	Wide Input 95 V AC - 264 V AC / 50 Hz - 60 Hz
Inrush current:	< 30 A

Fuse:	16 AT
Safety-isolation:	5000 V DC / prim-sec. acc. to VDE 0100-410
Protection class:	II (no protective earth)
Safety:	EN 60950
EMC / EMI:	filtered to meet EN55022 / A MIL810 (optional others) EN61000-4-2
Transients:	EN61000-4-4, and 61000-4-5
Output power:	2.4 kVA at 230 V AC 1.4 kVA at 115 V AC
Output voltage:	230 V AC / 50 Hz -15 % to +10 % (optional 60 Hz)
Current:	Version 1: 8 A Version 2: 12 A
Fault current protection:	RCD-Protector optional
Weight:	approx. 4 kg
CE-conformity:	Manufacturers declaration

Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles



Module DC-BAT
Battery Back-up Power Supply and Charger
type number 00996

Technical Specifications:

Input (AC-BAT):	230 V AC / 50Hz - 400 Hz (-15 % to +10 %)
Input (DC-BAT):	400 V DC (from intermediate bus)
Fuse:	16 A (magn. tripped)
Output voltage:	24 V DC to 28 V DC
Tolerance:	-0.5 V DC to +0.0 V DC
Current (charger):	60 A / 80 A pk (Derating above +50 °C)
Overcurrent:	short circuit protected
No load:	no minimum load
Current limit:	typ. 110 %
Battery type:	Lead acid batteries up to 200 Ah
Weight:	approx. 3.5 kg



Module DC-TT
High Frequency AC / DC-Converter
type number 01023

Technical Specifications:

Input:	230 V AC / 50 Hz - 400 Hz (-15 % to +10 %)
Optional:	Wide input 110 V AC to 230 V AC
Fuse:	16 A
Output voltage:	400 V DC
Current:	8 A
Overcurrent:	short circuit protected
No load:	no minimum load
Current limit:	typ. 110 %
Optical indicator:	Input AC ok Overload DC-Out ok
Weight :	approx. 4 kg

Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles



Module SV-1224 Dual Output Power Supply
type number 01024

Technical Specifications:

Input:	400 V DC (from intermediate bus) (optional AC-input)
Fuse:	16 A (magn. tripped)
Output 1:	12 V DC up to 20 A
Output 2:	24 V DC to 28 V DC up to 10 A
Overcurrent:	short circuit protected
No load:	no minimum load
Current limit:	typ. 110 %
Weight:	approx. 3.5 kg

Typical application:



AC-line input-module with automatic kick-off-connector,
EMC-filter / lightning protection, high-isolation AC / AC-
transformer and one blank panel



AC-line input-module with engine immobiliser and high-
isolation batterycharger (SELV)

Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles



Rear View: Box with 80 A power-connector (left) and signal connectors

Power Box Mxx *)

For direct assembling in car bodies (standard box system)

Optional Signals:

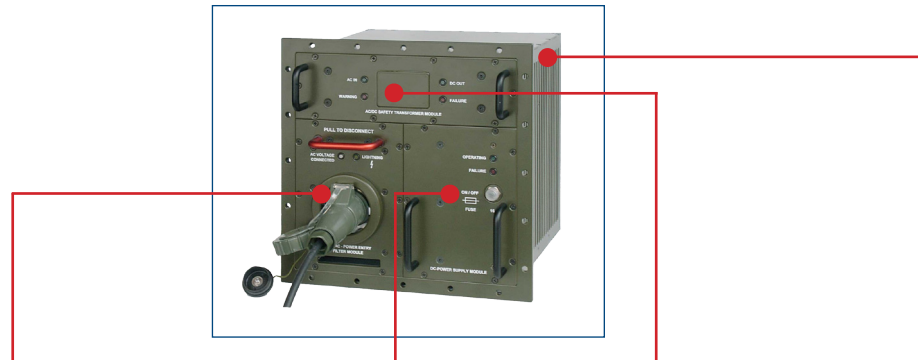
- Alarm
- Power ok
- Battery low
- Power disconnect

Technical Specifications:

Protection:	IP 54 (optional to IP 65)
Temperature operating:	-20 °C to +70 °C optional: -46 °C to +70 °C
Dimensions:	353 x 353 x 298 mm (W x H x D) Depth may vary up to 400 mm depending on backplane-version
Weight:	approx. 4 kg (without modules)
Connectors:	depend on used options
Ground terminal:	2 Bolts M8
Signals:	6 pin Connector (female)
Mounting:	20 screws (M6)
EMC-gasket:	optional on frontside
Sealing (front):	Rubber sealing (waterproof)
Material / Color:	Aluminium / RAL 6031 green
Shock / Vibration:	acc. to MIL810G

*) Final version varies on customers requests (power level, number of used modules, type of connectors a.s.o.)

Modular Power System acc. VG 96916-20 „MoFess“ Module for Military Ground Vehicles Overview of possible Modul combinations



01026
Modul NA-230-LD
CEE Connector
+ Lightning
Detection

01021
Modul NA-230
CEE Connector

00996
Modul DC-BAT
400 V DC →
24 (28) V DC

00995
Modul AC-TT-RCD
with RCD- prot.
230 V AC →
230 V AC

00991
Power Box
configured with
connectors for
X-Pwr, P-Out, P-In
Control & Signal

01027
Modul NA-230-
AW-LD
CEE Connector
+ Lightning
Detection

00992
Modul NA-230-AW
CEE Connector

01022
Modul AC-BAT
230 V AC →
24 (28) V DC

01020
Modul AC-TT
without RCD- prot.
230 V AC →
230 V AC

00994
Power Box
configured with
connectors for
Pwr-Out, Pwr-In,
Control & Signal

01032
Modul NA-400-
AW-LD
CEE Connector
+ Lightning
Detection

01031
Modul NA-400-AW
CEE Connector

01024
Modul SV-1224
400 V DC
↳ 24 (28) V DC
↳ 12 V DC

01023
Modul DC-TT
AC / DC Converter
230 V AC →
400 V DC

01029
Power Box
configured with
connectors for
X-Pwr, Pwr-In,
Control & Signal

01025
Modul NA-230-ST
CEE Connector
Stand alone /
Case

01028
Dummy Panel

01030
Power Box
configured with
connectors for
Power-In,
Control & Signal



Connector Box 230 V AC

type number 00865



Power adapter box with self-release-connector & lightning protection for military applications

Ask for further technical information!
Functional or interface modifications can be realized on request. Each configuration change causes a new type number.

By courtesy of Rheinmetall Landsysteme GmbH