

DC/DC Converter

Series GWL Single Output Galvanic Isolated



Input voltage 24 - 220 V
Output power up to 2400 W
Voltage regulated
High efficiency
Up to 15 units to be connected in parallel with current sharing
For 5xGWL 1 fan chassis or forced cooling necessary



Option: For ruggedized applications
Additional available operational modes:
parallel and n + 1 redundant

Input:

Input voltage (DC) 24 V, 48 V-60 V, 110 V
220 V ±30%
Inrush current limiting standard (not for 24 V, 48 V-60 V)
Input current max. $I_{in} = \frac{1,8 \times P_{OUTnom}}{U_{INnom}}$
Dimension input cable and prefuse Use ext. fuse at least one band higher with delay characteristic, Ensure effective cross-sectional area of cable is acc. VDE 0100, check temperature, limit cable run and note voltage drop especially at low input voltages
Fuse Input option (rear side)
Decoupling diode option (rear side)

Output:

Output voltage (DC) see table
Output current (DC) see table
Output power see table
Decoupling diode option (rear side)
Efficiency > 80 - 90%
depending on model

Regulation:

Line regulation ≤ 0,1% U_{out}
(max. source voltage variation)
Load regulation ≤ 0,1% U_{out}
(0 - 100% output load change)
Dynamic response ≤ 1 ms
Ripple and noise < 1%
Temperature coefficient ≤ 0,02%/K

Protection:

Overload protection current limit at $1,1 \times I_{nom}$
short circuit protection
Overvoltage protection standard, adjusted fix +10% U_{out}
Thermal protection temperature regulated
Decoupling diode option (rear side)
Signal relay standard
Shut down at deviation of $U_{in} \pm 30\%$

Environmental conditions:

Operating temperature -25° C - +70° C
Derating 2,5%/K
+50 - +70° C
Power - boost with ext. fan, see table
Cooling free air convection, power-boost with ext. fan (> 1,5 m/s)
Switching frequency 100 kHz

Safety:

Safety standard EN60950-1
Isolation input - output: U_{in} and $U_{out} \leq 60$ V: 500 V_{rms}
 U_{in} 60 - 130 V, $U_{out} \leq 60$ V: 2 kV_{rms}
 U_{in} 130 - 250 V, $U_{out} \leq 250$ V: 3 kV_{rms}
input-ground, output-ground: U_{in} or $U_{out} \leq 60$ V: 500 V_{rms}
 U_{in} or U_{out} 60 - 130 V: 1 kV_{rms}
 U_{in} or U_{out} 130 - 250 V: 1,5 kV_{rms}
disconnect the anti-interference capacitors input-ground and output-ground

EMC:

Input EMI filter EN61000-6-3 / Class B
Input immunity EN61000-6-2

Operating and Control:

Remote sense standard, up to 0,25 V per wire
Ext. ON/OFF standard
Current share standard
Input control signal: Power Fail at -25 % U_{in}
(neg. or pos. Logic)
Output control signal: Power Good
(neg. or pos. Logic)
Indicator "ON" LED green
Adjustment voltage ± 10 %, potentiometer front-panel
Signal Relay

Connectors:

Input U_{in} 24 V, 48-60 V ($I > 30$ A):
input bus bar M8 threaded stud
 U_{in} 110 V, 220 V ($I < 30$ A):
screw - terminal
6 mm² fixed / 4 mm² variable
Output $U_{out} \leq 48$ V ($I > 30$ A):
input bus bar M8 threaded stud
 $U_{out} \geq 60$ V ($I < 30$ A):
screw - terminal
6 mm² fixed / 4 mm² variable
Signals Combicon 12 pole 0,2 - 2,5
female multipoint connector with screw-terminal included with delivery

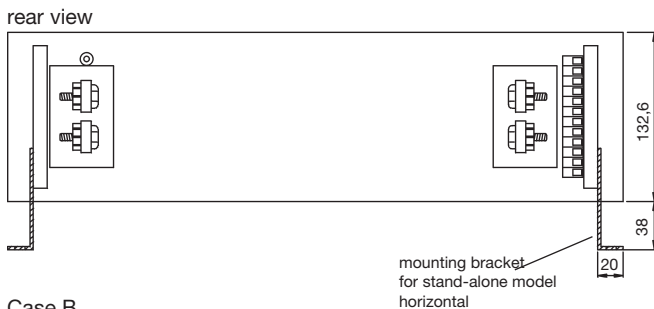
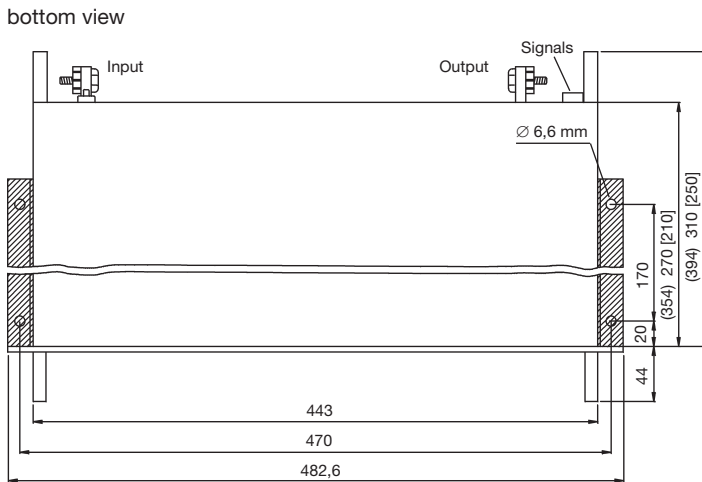
Physical Specification:

Front-panel front-panel mask 19", 3U
Dimensions see table and drawing
Weight Case A: 13,0 kg
Case B: 15,4 kg
Case C: 22,3 kg

Input* Voltage (V)	Output voltage (V) / Current (A)	Power free air convection (ext. Fan) (W)	Case			Model number
			A	B	C	
24	24/35 (40)	850(1000)	x			GWL24/24/35
24	24/55 (65)	1300(1550)		x		GWL24/24/55
24	48/17 (20)	850(1000)	x			GWL24/48/17
24	48/27 (32)	1300(1550)		x		GWL24/48/27
24	60/14 (17)	850(1000)	x			GWL24/60/14
24	60/22 (26)	1300(1550)		x		GWL24/60/22
24	110/8 (9)	850(1000)	x			GWL24/110/8
24	110/12 (14)	1300(1550)		x		GWL24/110/12
24	220/4 (4,5)	850(1000)	x			GWL24/220/4
24	220/6 (7)	1300(1550)		x		GWL24/220/6
48-60, 110, 220	12/65 (85)	800(1000)	x			GWL.../12/65
48-60, 110, 220	12/100 (125)	1200(1500)		x		GWL.../12/100
48-60, 110, 220	15/55 (70)	850(1050)	x			GWL.../15/55
48-60, 110, 220	15/85 (105)	1300(1600)		x		GWL.../15/85
48-60, 110, 220	24/20 (30)	500 (600)	x			GWL.../24/20
48-60, 110, 220	24/40 (50)	1000(1200)	x			GWL.../24/40
48-60, 110, 220	24/60 (75)	1500(1800)		x		GWL.../24/60
48-60, 110, 220	48/10 (12,5)	500 (600)	x			GWL.../48/10
48-60, 110, 220	48/20 (25)	1000(1200)	x			GWL.../48/20
48-60, 110, 220	48/30 (37)	1500(1800)		x		GWL.../48/30
48-60, 110, 220	60/8,5 (10)	500 (600)	x			GWL.../60/8,5
48-60, 110, 220	60/17 (20)	1000(1200)	x			GWL.../60/17
48-60, 110, 220	60/25 (30)	1500(1800)		x		GWL.../60/25
48-60, 110, 220	110/4,5 (5,5)	500 (600)	x			GWL.../110/4,5
48-60, 110, 220	110/9 (11)	1000(1200)	x			GWL.../110/9
48-60, 110, 220	110/13 (16)	1500(1800)		x		GWL.../110/13
48-60, 110, 220	220/2,25 (2,75)	500 (600)	x			GWL.../220/2,25
48-60, 110, 220	220/4,5 (5,5)	1000(1200)	x			GWL.../220/4,5
48-60, 110, 220	220/7 (8)	1500(1800)		x		GWL.../220/7
48-60, 110, 220	48/40 (50)	2000(2400)			x	GWL.../48/40

* AC-input on request
Other types, and modifications on request

Dimensions in mm



Case B
Values in brackets [...] Case A
Values in brackets (...) Case C

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Options:

- Decoupling diode - Output I ≤ 20 A
- Decoupling diode - Output I > 20 A
- Fuse Input
- Front-panel
- Colour RAL 7032
- other colours consult factory
- Mounting bracket for stand-alone model
 - horizontal
 - fixed for ruggedized applications
- Fan insert

Model Number:

replace (...) with the input voltage

Dimensions

Case	Dimensions w x h x d (mm)	Dimensions Dept incl. Contact rail (mm)
A	482,6 x 132,6 x 210	250
B	482,6 x 132,6 x 270	310
C	482,6 x 132,6 x 354	394

Pin Assignment

Combicon 12-pol.	GWL..	C
Signal relay	12	Signal relay
NOC	11	PF NCC
Signal relay	10	Signal relay
NCC	9	Pok NCC
+ Sense	7	
- Sense	6	
Current Share	5	
Common 0 V Output	4	
Ext. On/Off	3	
Output Power Good	2	
Input Power Fail	1	