

50 WBB 024 M27 W00

$V_{I\text{ nom}} = 24\text{ V}$ $V_{O\text{ nom}} = 24\text{ V}$ $I_{O\text{ nom}} = 2\text{ A}$

| SYMBOL | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------|--|--|--|-----|------|---|
| INPUT: | | | | | | |
| V_{IN} | Input voltage range | Continuously | 12.0 | | 40.0 | V_{DC} |
| $V_{IN\text{ Dyn}}$ | Input voltage range dynamic EN 50155 | $V_{IN} = 14.4\text{ V} \dots 16.8\text{ V}$ for $t \leq 0.1\text{ s}$ $V_{IN} = 30.0\text{ V} \dots 33.6\text{ V}$ for $t \leq 1\text{ s}$ | 14.4 | | 33.6 | V_{DC} V_{DC} |
| $V_{IN\text{ Min}}$ | Converter shutdown | | 10 | | 12 | V_{DC} |
| $V_{IN\text{ Max}}$ | Converter shutdown | | 40 | | 45 | V_{DC} |
| I_{IN} | Input current | no load Nominal load Nominal load | $V_{IN} = 40.0\text{ V}, I_{OUT} = 0\text{ A}$ $V_{IN} = 24.0\text{ V}, I_{OUT} = 2.0\text{ A}$ $V_{IN} = 12.0\text{ V}, I_{OUT} = 2.0\text{ A}$ | 2.4 | 40 | mA A A |
| | Input current integral | | | | 10 | A^2s |
| | | | $V_{IN} = 40\text{ V}$ | | | |
| $I_{IN\text{ Max}}$ | Switch on current at $V_{IN} \geq V_{IN\text{ min}}$ | $I_{OUT} = 2\text{ A}$ $\Delta t \leq 200\text{ ms}$ | | | 5 | A |
| | Input Fuse | | 10 A Pico Fuse | | | |
| C_{IN} | Converter input capacitance | | | 30 | 35 | μF |
| | External Line Inductance | | | | 25 | μH |
| | Reverse input protection | parallel diode + input fuse | 1.5KE36A | | | |

OUTPUT: Power Unit

$12.0\text{ V} \leq V_{IN} \leq 40.0\text{ V}$

| | | | | | | |
|---------------------------|--|--|--------------------------------|--------|-----------|-------------|
| $P_{OUT\text{ Nom}}$ | Output power | | | 50 | | W |
| $V_{OUT\text{ Nom}}$ | Output voltage adjustment, factory set | $I_{OUT} = 1.0\text{ A}$ | + 26.9 | + 27.0 | + 27.2 | V_{DC} |
| ΔV_{OUT} | Load regulation static | $0\text{ A} \leq I_{OUT} \leq 2.0\text{ A}$ $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$ | $\pm 2.5\% V_{OUT\text{ nom}}$ | | | V |
| $\Delta V_{O\text{ dyn}}$ | Load regulatin dynamic | Pulse load: 20 - 80 - 20 % $\times I_{OUT}$ | | | ± 200 | mV |
| t_{dyn} | Response time | Pulse load: 20 - 80 - 20 % $\times I_{OUT}$ | | 1 | 2 | ms |
| $V_{O\text{ rms}}$ | Ripple | Nominal load BW 300 kHz | | 100 | 200 | mV |
| $V_{O\text{ pp}}$ | Noise | Nominal load BW 20 MHz | | | 250 | mV |
| t_{on} | Turn on time V_O | $0\text{ A} \leq I_{OUT} \leq 2.0\text{ A}$ resistive load | 25 | | 200 | ms |
| t_h | Hold Up Time Option | $0\text{ A} \leq I_{OUT} \leq 2.0\text{ A}$ | 10 | | | ms |
| | Overvoltage Protection | $0\text{ A} \leq I_{OUT} \leq 2.0\text{ A}$ | Transil Diode 1,5KE27A | | | |
| I_{OUT} | Output current | | | 2.0 | | A |
| | Output current limitation | | 2.1 | | | A |
| I_{AK} | Output short circuit current | short circuit between + V_O and - V_O $12.0\text{ V} \leq V_{IN} \leq 40.0\text{ V}$ | | | 3.0 | A |
| | Sense Lines | no | | | | |
| C_O | Converter Capacitance | Output | | 5 | | mF |

Signals

| | | | |
|---------|--------|------------|--|
| Signals | Input | LED yellow | |
| | Output | LED yellow | |

GENERAL SPECIFICATIONS

| | | | | | | |
|--------|------------------------------|---|--------------|---------|--|--------------|
| f | Switching frequency | $V_{IN} = 24\text{ V}, I_{OUT} = 2.0\text{ A}$ | | 135 | | kHz |
| η | Efficiency | $P_{OUT} \geq 0.7 \times P_{OUT\text{ Nom}}$ | 83 | 87 | | $\%$ |
| | MTBF (SN 29500) | $V_{IN} = 24\text{ V}, I_{OUT} = 2.0\text{ A}, T_A = +40^\circ\text{C}$ | | 500 000 | | h |
| | No load, short circuit proof | | Continuously | | | |

| SYMBOL | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|----------------------------|--|--|---|-----|-----------------------|---|
| SAFETY / DIMENSIONS | | | | | | |
| | Creepage, Clearance PCB FR4 V0 PD 2 | Input – Output Input – Case Output – Case | 2.0 2.0 1.0 | | | mm mm mm |
| | Converter Dielectric Strength Test each unit Ramp function 2 s – 3 s – 2 s Type Test: 1 minute | Input – Output Input – Case Output – Case | | | 2'100 1'500 500 | V _{DC} V _{DC} V _{DC} |
| | Connector | Input, Output, SE: Combicon 5-pins Required femal plug: | DFK-MSTBA 2.5/5-GF-5.08 MSTB 2.5 HC/5-STF-5.08 | | | |
| | Pin Assignment | | see drawing | | | |
| | Protection Class, Protection degree | | I, IP 20 | | | |
| | Dimensions see drawing | w x h x d | 110 x 170 x 52 | | | mm |
| | Assembling | Wall mounting with screws | 4 x M4 | | | |
| | Weight | | | 750 | | g |

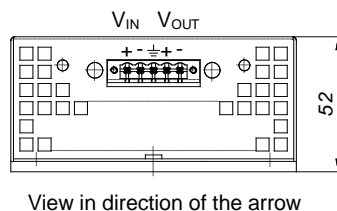
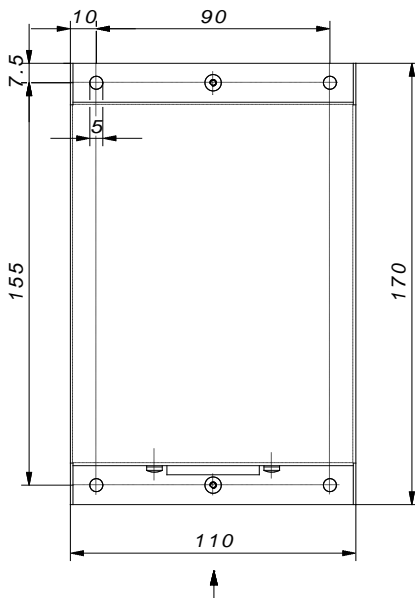
| ENVIRONMENTAL CONDITIONS | | | | | | |
|---------------------------------|-------------------|---|-----------------------------------|--|--------------|----------|
| T _A | Operating Range | Continuously EN 50155 class Tx for 10 Min. | - 40 - 40 | | + 70 + 85 | °C °C |
| T _{Sto} | Storage Range | | - 40 | | + 85 | °C |
| | Cooling | | convection | | | |
| | Humidity | EN 50155, IEC 60571 | 75% averaged year, 95% 30 days | | | |
| | Vibration / Shock | IEC 61373, IEC 68-2-27, EN 50155 Cat. I 3 shocks each Axis | 50 m / s ² , 30 ms | | | |

| EMV | | | |
|------------|---|--|---|
| | Emission | Line conducted and radiated | EN 50121 - 3 - 2: 2006 |
| | Immunity | ESD EN 61000 - 4 - 2 | 6 kV / 8 kV performance criteria - B - |
| | 1400 MHz – 2100MHz 10V/m 2100MHz – 2500MHz 5V/m | High Frequency Field EN 61000 - 4 - 3 | 20 V/m 80 MHz ... 2.5GHz performance criteria - A - |
| | | Burst EN 61000 - 4 - 4 | Level 3 asym., sym. performance criteria - A - |
| | | Surge EN 61000 - 4 - 5 | 2 kV asym. / 1 kV sym. R _i = 42 Ω performance criteria - B - |
| | | HF – Current Injection EN 61000 - 4 - 6 | 10 V _{eff} , R _i = 150 Ω performance criteria - A - |

| STANDARDS | | | | | | |
|--------------------|----------------|-----------------|--------------------|--------------------------|----------------------|--|
| Applied Standards: | EN 50155: 2006 | BN 411 002 | EN 50124 - 1: 2006 | EN 50121 - 3 - 2: 2006 | IEC 60571 | |
| | SN 29 500 | prEN 50 121 - 1 | prEN 50125 - 1 | EN 60068 - 2 - 6, 2...27 | EN 61000 - 4 - 2...6 | |
| | IEC 571 | IEC 61373 | EN 60721 - 3 - 5 | EN 61373 | EN 60529 | |

Technical specifications valid for: - 40° C ≤ T_A ≤ + 70° C, 12.0 V ≤ V_{IN} ≤ 40.0 V, unless otherwise noted.

Dimensions (in mm) and pin assignment



| Function | Wire gauge ** |
|--------------------|-----------------------|
| + V _{IN} | ≥ 1.5 mm ² |
| - V _{IN} | ≥ 1.5 mm ² |
| PE | 2.5 mm ² |
| + V _{OUT} | ≥ 1.5 mm ² |
| - V _{OUT} | ≥ 1.5 mm ² |