

Master-7xx.xx

400 Watt, isolated, single output buck-boost converter

All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 16,5 \text{ ADC}$ and $U_{iNom} = 24\text{VDC}$

ABSOLUTE MAXIMUM RATINGS

| parameter | unit | typ |
|--------------------|------|--------|
| Input peak voltage | VDC | 150.00 |

THERMAL CHARACTERISTICS

| parameter | min to max | typ |
|--|---|-----------------------|
| Ambient temperature range | $-40^{\circ}\text{C} / +85^{\circ}\text{C}$ | |
| Max. case temperature for thermal shut down [$^{\circ}\text{C}$] | | $+90^{\circ}\text{C}$ |
| Storage temperature [device not in operation] | $-10^{\circ}\text{C} / +65^{\circ}\text{C}$ | |
| Relative maximum humidity under storage | | 75% RH |
| Storage under worst conditions [in days] | | 25 |

COMMUNICATION INTERFACE

| parameter | unit | fulfilled | conditions | min to max |
|--|------|-----------|------------|-------------|
| Option shut down [left open for operation] | | ✓ | | |
| Shutdown voltage for transformer | VDC | | I_{oNom} | -0,2 to 2,8 |

SPECIALS

| parameter | unit | fulfilled | conditions | typ |
|--|------|-----------|------------------------|--------------------------|
| Switching frequency | kHz | | | 125 |
| Efficiency at light loads | % | | $0.25I_{oNom}$ | 96.00 |
| Efficiency at medium loads | % | | $0.5I_{oNom}$ | 95.00 |
| Efficiency at full loads | % | | I_{oNom} | 94.00 |
| MTTF | h | | SN29500 @ 70° | 123 456 |
| For active loads or parallel connection | | ✓ | | |
| Drives high capacitive loads | | ✓ | | |
| CC/CV battery load characteristic | | ✓ | | |
| Coupling capacitance input to output | nF | | | transformer winding only |
| Insulation strength primary to secondary | VDC | | | 2100 |
| Insulation strength primary to case | VDC | | | 2100 |

COMPLIANCE

| parameter | fulfilled | notes |
|---|-----------|-------|
| 61000-6-2 [EMC-Immunity standard for industrial environment] | ✓ | |
| 61000-4-2 [immunity against ESD-electrostatic discharge] | ✓ | |
| 61000-4-3 [immunity High frequency electromagnetic fields] | ✓ | |
| 61000-4-4 [immunity against burst – electrical fast transients] | ✓ | |
| 61000-4-5 [immunity against surge - high energy surges] | ✓ | |
| 61000-4-6 [immunity against induced, conducted disturbances] | ✓ | |
| 61000-6-4 [EMC – Emission standard for industrial environment] | ✓ | |

All technical and general information is provided in all conscience. However, completeness and accuracy cannot be guaranteed. Demke recommends to fully test the product in its determined application. Due to permanent improvements to our products, we reserve the right to change specifications at any time and without prior notification and without obligation to update products already supplied. This is a component for professional equipment manufacturers. Read the safety and installation instruction for proper use. Safety aspect and EMC-aspect must be considered in the end application.

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| | |
|------------------|---|
| 55022<A | ✓ |
| 50155 | ✓ |
| Protection class | 1 |

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INPUT

| parameter | unit | conditions | min | typ | max |
|--|------|------------|-----|------|-----|
| Input voltage range | VDC | IoNom | 8 | 24 | 125 |
| No load input current | mA | UiNom | | 30 | |
| Max. input current | A | UiNom | | 30 | |
| Input start up voltage | VDC | UiNom | | 7.5 | |
| Undervoltage lockout | VDC | UiNom | | 5.5 | |
| Input quiescent current in shutdown mode | mA | UiNom | | 0.50 | |

OUTPUT

| parameter | unit | conditions | min | typ | max |
|--|------|------------|-----|------------|-----|
| Output voltage | VDC | IoNom | | 24.0 | |
| No Load output voltage increase | % | UiNom | | 4 | |
| Minimum required load to obtain the specified output voltage | % | UiNom | | 2 | |
| Output voltage accuracy | % | IoNom | | +/-2,00% | |
| Output voltage overshoot at initial switch-on | % | IoNom | | overdamped | |
| Rated output power | W | | | 400 | |

CONTROL

| parameter | unit | conditions | min | typ | max |
|---|------|---------------------|-----|------|-----|
| Static line regulation | % | IoNom/UiMin...UiMax | | 0.10 | |
| Static load regulation | % | IoMin...IoMax/UiNom | | 0.3 | |
| Initial switch on time | ms | IoNom | | 500 | |
| Softstart ramp up time | ms | IoNom | | 30 | |
| Restart time after undervoltage lockout | ms | IoNom | | 50 | |

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MECHANICAL parameter

| parameter | unit | |
|--------------------|------|----------|
| Overall dimensions | mm | 90x90x26 |
| Weight | g | 900 |

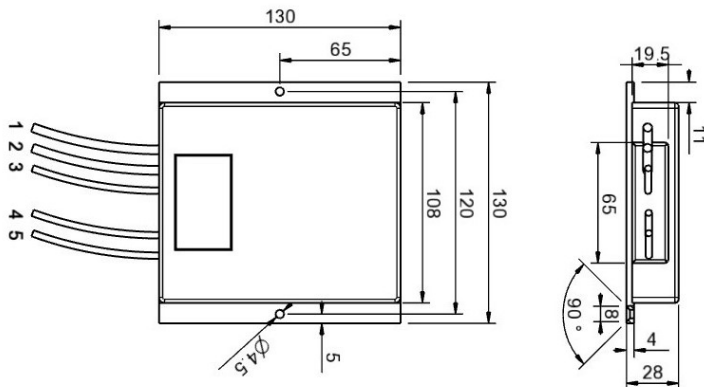
| Pin No. | Function | Electrical Determination |
|---------|----------|--------------------------|
| 1 | Vi+ | Input voltage positive |
| 2 | Vi- | Input voltage negative |
| 3 | SD | Shut down |
| 4 | Vo- | Output voltage negative |
| 5 | Vo+ | Output voltage positive |

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type:

Case: FMC 130x130x28



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