

D1U54P-W-650-12-HBxC Series

54mm 1U Front End AC-DC Power Supply Converter



PRODUCT OVERVIEW

The D1U54P-W-650-12-HBxC series are very high efficiency 650 watt power factor corrected front end supplies with a 12V main output and a 12V Standby. An active (analogue) current share characteristic is provided to allow units to operate in parallel. The power supply may be hot plugged; recovers from overtemperature faults, and has status LEDs on the front panel in addition to hardware signal logic and PMBus™ status signals. The low profile 1U package and 21.4W/cubic inch power density make them ideal for delivering reliable, efficient power to networking equipment, workstations, storage systems and other 12V distributed power architectures.

ORDERING GUIDE

| Part Number | Murata Internal Part Number | Power Output 90 to 264Vac | Main Output | Standby Output | Airflow |
|----------------------|-----------------------------|---------------------------|-------------|----------------|---------------|
| D1U54P-W-650-12-HB3C | M1877 | 650W | 12Vdc | 12Vdc | Front to Back |
| D1U54P-W-650-12-HB4C | M1876 | | | | Back to front |

FEATURES

- 650W output power
- 94% efficiency at 50% load
- 12V main output
- 12V standby output
- 1U height:
- 2.15" x 9.0" x 1.57"
- 54.5mm x 228.6mm x 40mm
- Full digital control
- 21.4 Watts per cubic inch density
- N+1 redundancy capable, including hot plugging
- Active (analogue) current sharing on 12V main output; ORing FET
- Overvoltage, Overcurrent, Overtemperature protection
- Internal cooling fan (variable speed)
- PMBus™/I2C interface with status indicators
- RoHS compliant
- Two Year Warranty

INPUT CHARACTERISTICS

| Parameter | Conditions | Min. | Nom. | Max. | Units |
|--------------------------------------|---------------------------------|------|---------|------|-------|
| Input Source Voltage Operating Range | | 90 | 115/230 | 264 | Vac |
| Input Source Frequency | | 47 | 50/60 | 63 | Hz |
| Turn-on Input Voltage | Ramp up | 74 | | 84 | Vac |
| Turn-off Input Voltage | Ramp down | 70 | | 80 | Vac |
| Maximum current at Vin = 100Vac | 650W | | | 10 | Arms |
| Inrush Current | Cold start between 0 to 200msec | | | 25 | Apk |
| Power Factor | At 230Vac, 100% load | 0.96 | | | |
| | At 230Vac, 50% load | 0.95 | | | |
| | At 230Vac, 20% load | 90 | | | |
| Efficiency (excluding fan load) | At 230Vac, 50% load | 94 | | | % |
| | At 230Vac, 100% load | 91 | | | |

OUTPUT VOLTAGE CHARACTERISTICS

| Nominal Output Voltage | Parameter | Conditions | Min. | Typ. | Max. | Units |
|------------------------|---------------------------------------|--------------------------------------|-------|-------|-------|--------|
| 12V | Output Set Point Accuracy | 50% load; Tamb = 25°C | 11.96 | 12.00 | 12.04 | Vdc |
| | Line and Load Regulation | Setpoint; temperature; line and load | -1.0% | | +1.0 | % |
| | Ripple Voltage & Noise ^{1,2} | 20MHz Bandwidth | | | 120 | mV p-p |
| | Output Current Range | | 0 | | 54.2 | A |
| | Load Capacitance | | 500 | | 4000 | µF |
| 12VSB | Output Set Point Accuracy | 50% load; Tamb = 25°C | 11.96 | 12.00 | 12.04 | Vdc |
| | Line and Load Regulation | Setpoint; temperature; line and load | 11.7 | | 12.3 | |
| | Ripple Voltage & Noise ¹ | 20MHz Bandwidth | | | 120 | mV p-p |
| | Output Current | | 0 | | 2 | A |

¹ Ripple and noise are measured with 0.1 µF of ceramic capacitance and 10 µF of tantalum capacitance on each of the power supply outputs. A short coaxial cable to the measurement 'scope input, is used.

² Measurements assume the use of the minimum load capacitance as specified for the main 12V output and a minimum load of 5%.

Below 5% loading the overall voltage deviation shall be within ±500mV due to zero load "skip" cycle mode of operation.



Available now at: www.murata-ps.com/en/3d/acdc.html



For full details go to www.murata-ps.com/rohs

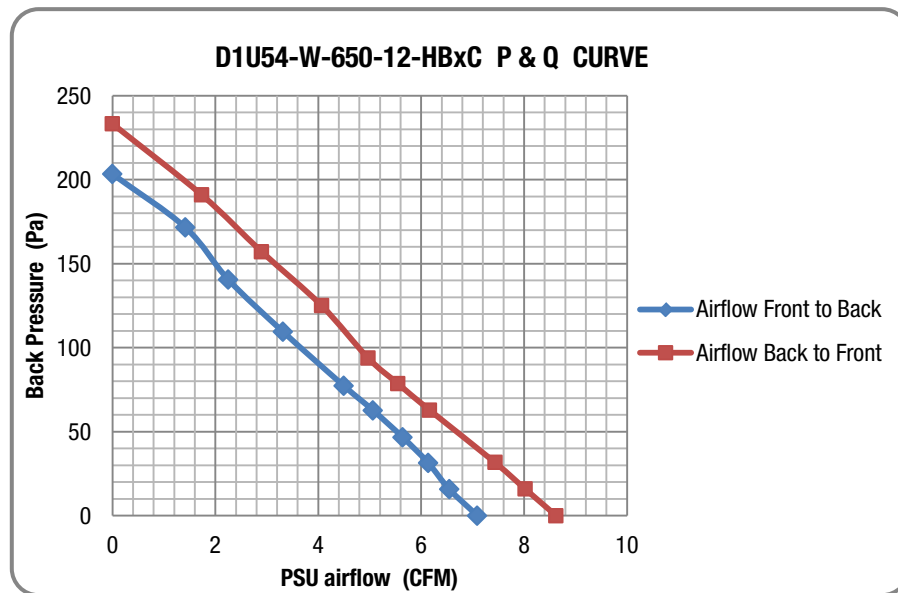


Test Certificate and Test Report

| OUTPUT CHARACTERISTICS | | | | | |
|--|---|------|------|------|-------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Startup Time | AC ramp up Note: Following a "turn off" of the 12V Main output (for any reason whatsoever) the output shall not be allowed to "turn on" again for 1sec (even if all necessary operating conditions are met). | | | 3 | s |
| Transient Response | Main 12V, 50% load step, 1A/μs di/dt | | | ±5 | % |
| | 12VSB, 50% load step, 1A/μs di/dt | | | 500 | μs |
| Current sharing accuracy (Main 12V output) | >10% load; (* percentage of full load) | | | ±5* | % |
| Hot Swap Transients | | | | ±5 | % |
| Holdup Time (Total Effective Hold Up - See Timing Waveforms) | Full AC Input Source Range; full load | 12 | | | ms |

| ENVIRONMENTAL CHARACTERISTICS | | | | | |
|-------------------------------------|--|------|------|------|-------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Storage Temperature Range | | -40 | | 70 | °C |
| Operating Temperature Range | 90V-264Vac, 650W | -5 | | 50 | |
| Operating Humidity | Noncondensing; +45°C | 5 | | 90 | % |
| Storage Humidity | | 5 | | 95 | |
| Altitude (without derating at 40°C) | | | | 3000 | m |
| Shock | 30G non-operating | | | | |
| Operational Vibration | Sine sweep; 5-200Hz, 2G; random vibration, 5-500Hz, 1.11G | | | | |
| MTBF(Target) | Per Telcordia SR-332 M1C1 @40°C | | 576K | | hrs |
| Safety Approvals | CAN/CSA C22.2 No 60950-1-07, Am.1:2011, Am 2:2014 ANSI/UL 60950-1-2014 IEC60950-1:2005 (2nd Ed.), Am 1:2009 + Am 2:2013 EN 60950-1:2006+A11:2009 +A1:2010 +A12:2011 +A2:2013 BSMI CNS14336-1 (099/09/30); CNS13438 ((095/06/01) CCC GB4943.1-2011; GB9254-1-2008; GB17625, 1-2012 | | | | |
| Input Fuse | Power Supply has internal 12.5A/250V fast blow fuse on the AC line input | | | | |
| Weight | 1.63 lbs (0.741 kg) | | | | |

AIRFLOW; PRESSURE VS. FLOW (PQ) CURVES
D1U54P-W-650-12-HB3C & D1U54P-W-650-12-HB4C



Notes:
 1. The above curves represent performance based upon the use of a 20mm thickness fan.
 2. Curves recorded at room ambient (circa 25°C).
 3. Curves generated with internal fan running at 100% duty cycle

| PROTECTION CHARACTERISTICS | | | | | | |
|----------------------------|--------------------------|--|------|------|------|-------|
| Output | Parameter | Conditions | Min. | Typ. | Max. | Units |
| 12V | Overtemperature (intake) | Autorestart with 4°C hysteresis for recovery (warning issued at 70°C) | | 75 | | °C |
| | Overvoltage | Latching | 13.0 | | 14.5 | V |
| | Overcurrent (target) | The output shall shutdown when an overcurrent condition is detected. It will auto restart after 1sec; however if the overcurrent condition is redetected the output will once again shutdown. The output will once again re-start, however if the overcurrent condition persists it will latch of after the fifth unsuccessful attempt. To reset the latch it will be necessary to toggle the PS_ON_L signal (B4) or recycle the incoming AC source. | 60 | | 70 | A |
| 12VSB | Overvoltage | Latching | 13.0 | | 14.5 | V |
| | Overcurrent | The output shall shutdown when an overcurrent is detected. It will auto restart after 2sec; however if the overcurrent is re-detected the output will once again shutdown. This cycle will occur indefinitely while the overcurrent condition | 2.5 | | 3.5 | A |

| ISOLATION CHARACTERISTICS | | | | | |
|---------------------------|------------------------------|------|------|------|-------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Insulation Safety Rating | Input to Output - Reinforced | 3000 | | | Vrms |
| | Input to Chassis - Basic | 1500 | | | Vrms |
| Isolation | Output to Chassis | 500 | | | Vdc |

| EMISSIONS AND IMMUNITY | | |
|---|--|---|
| Characteristic | Standard | Compliance |
| Input Current Harmonics | IEC/EN 61000-3-2 | Complies |
| Voltage Fluctuation and Flicker | IEC/EN 61000-3-3 | Complies |
| Conducted Emissions | FCC 47 CFR Part 15 CISPR 22/EN55022 | Class A with 6dB margin |
| ESD Immunity | IEC/EN 61000-4-2 | Level 4 criteria A |
| Radiated Field Immunity | IEC/EN 61000-4-3 | Level 3 criteria B |
| Electrical Fast Transients/Burst Immunity | IEC/EN 61000-4-4 | Level 3 criteria A |
| Surge Immunity | IEC/EN 61000-4-5 | <ul style="list-style-type: none"> 6kV common mode and differential mode, unit shall fail safely[#]. 4kV common mode and differential mode, unit shall survive; the output may shut down and recover automatically (Criteria B) or require manual intervention (Criteria C)[#]. 2kV common and differential mode, unit passes criteria A (normal performance)* |
| RF Conducted Immunity | IEC/EN 61000-4-6 | Level 3 criteria A |
| Magnetic Field Immunity | IEC/EN 61000-4-8 | 3 A/m criteria B |
| Voltage Dips, Interruptions | IEC/EN 61000-4-11 | 230V _{in} , 80% load, Phase 0°, Dip 100% Duration 10ms (A) 230V _{in} , 50% load, Phase 0°, Dip 100% Duration 20ms (VSB:A, V1:B) 230V _{in} , 100% load, Phase 0°, Dip 100% Duration > 20ms (VSB, V1:B) |

* Impedance is 2 ohms for ±2kV differential and common mode to comply with NEBS GR-1089 limits. Maximum load capacitance is required for these tests.

Tests above ±2kV will be performed for information purposes to IEC/EN6100-4-5 with 12ohm impedance, differential & common mode.

| STATUS INDICATORS | | | |
|-------------------|---------------|---------------------|---|
| LED NAME | LED MODE | LED STATE/OPERATION | DESCRIPTION |
| Input | OK | Solid Green | Input voltage operating within normal specified range |
| Input | OV/UV WARNING | Blinking Green | Input voltage operating in: 1) overvoltage warning, or 2) undervoltage warning range |
| Input | OFF OR FAULT | Off | Input voltage operating: 1) above overvoltage range, or 2) below undervoltage range, or 3) not present |
| Output | POWER GOOD | Solid Green | Main output and standby output enabled with no power supply warning or fault detected |
| Output | STANDBY | Blinking Green | Standby output enabled with no power supply warning or fault detected |
| Output | WARNING | Blinking Amber | Power supply warning detected as per PMBus STATUS_X reporting bytes* |
| Output | FAULT | Solid Amber | Power supply fault detected as per PMBus STATUS_X reporting |

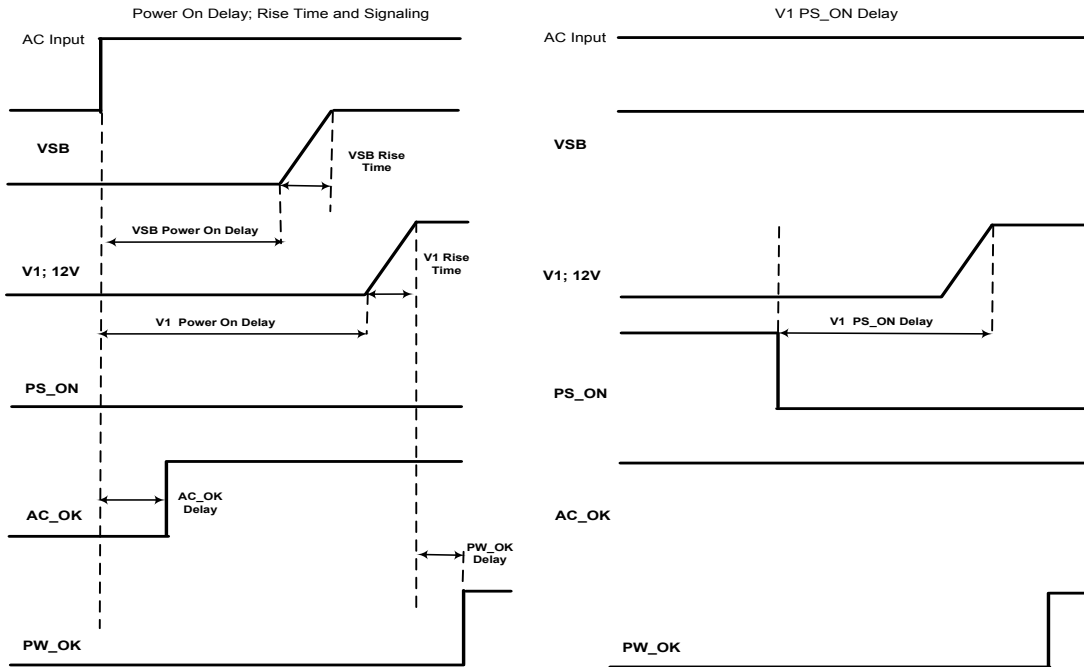
bytes*

*LED fault/warning operation follows PMBus fault/warning reporting status flags but will not be 'sticky';(i.e. if the fault stimulus is removed, even though the actual fault/warning is still showing (still "sticky" and not cleared), the relevant LED will revert to normal (non -fault) operation.

| STATUS AND CONTROL SIGNALS | | | |
|-------------------------------------|-----------------------------|--|---|
| Signal Name | I/O | Description | Interface Details |
| INPUT_OK (AC Source) | Output | The signal output is driven high when input source is available and within acceptable limits. The output is driven low to indicate loss of input power. There is a minimum of 1ms pre-warning time before the signal is driven low prior to the PWR_OK signal going low. The power supply must ensure that this interface signal provides accurate status when AC power is lost. | Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output). |
| PW_OK (Output OK) | Output | The signal is asserted, driven high, by the power supply to indicate that all outputs are valid. If any of the outputs fail then this output will be hi-Z or driven low. The output is driven low to indicate that the Main output is outside of lower limit of regulation (11.4Vdc). | Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output). |
| SMB_ALERT (FAULT/WARNING) | Output | The signal output is driven low to indicate that the power supply has detected a warning or fault and is intended to alert the system. This output must be driven high when the power is operating correctly (within specified limits). The signal will revert to a high level when the warning/fault stimulus (that caused the alert) is removed. | Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output). |
| PRESENT_L (Power Supply Absent) | Output | The signal is used to detect the presence (installed) of a PSU by the host system. The signal is connected to PSU logic SGND within the power module. | Passive connection to +VSB_Return. A logic low <0.8Vdc |
| PS_ON (Power Supply Enable/Disable) | Input | This signal is pulled up internally to the internal housekeeping supply (within the power supply). The power supply main 12Vdc output will be enabled when this signal is pulled low to +VSB_Return. In the low state the signal input shall not source more than 1mA of current. The 12Vdc output will be disabled when the input is driven higher than 2.4V, or open circuited. Cycling this signal shall clear latched fault conditions. | Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Input is via CMOS Schmitt trigger buffer. |
| PS_KILL | Input | This signal is used during hot swap to disable the main output during hot swap extraction. The input is pulled up internally to the internal housekeeping supply (within the power supply). The signal is provided on a short (lagging pin) and should be connected to +VSB_Return. | Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Input is via CMOS Schmitt trigger |
| ADDR (Address Select) | Input | An analogue input that is used to set the address of the internal slave devices (EEPROM and microprocessor) used for digital communications. Connection of a suitable resistor to +VSB_Return, in conjunction with an internal resistor divider chain, will configure the required address. | DC voltage between the limits of 0 and +3.3Vdc. |
| SCL (Serial Clock) | Both | A serial clock line compatible with PMBus™ Power Systems Management Protocol Part 1 – General Requirements Rev 1.1. No additional internal capacitance is added that would affect the speed of the bus. The signal is provided with a series isolator device to disconnect the internal power supply bus in the event that the power module is unpowered, | V _L is 0.8V maximum V _{OL} is 0.4V maximum when sinking 3mA V _H is 2.1V minimum |
| SDA (Serial Data) | Both | A serial data line compatible with PMBus™ Power Systems Management Protocol Part 1 – General Requirements Rev 1.1. The signal is provided with a series isolator device to disconnect the internal power supply bus in the event that the power module is unpowered, | V _L is 0.8V maximum V _{OL} is 0.4V maximum when sinking 3mA V _H is 2.1V minimum |
| V1_SENSE V1SENSE_RTN | Input | Remote sense connections intended to be connected at and sense the voltage at the point of load. The voltage sense will interact with the internal module regulation loop to compensate for voltage drops due to connection resistance between the output connector and the load. If remote sense compensation is not required then the voltage can be configured for local sense by: 1. V1_SENSE directly connected to power blades 6 to 10 (inclusive) 2. V1_SENSE_RTN directly connected to power blades 1 to 5 (inclusive) | Compensation for a up to 0.12Vdc total connection drop (output and return connections). |
| ISHARE | Bi-Directional Analogue Bus | The current sharing signal is connected between sharing units (forming an ISHARE bus). It is an input and/or an output (bi-directional analogue bus) as the voltage on the line controls the current share between sharing units. A power supply will respond to a change in this voltage but a power supply can also change the voltage depending on the load drawn from it. On a single unit the voltage on the pin (and the common ISHARE bus would read 8VDC at 100% load (module capability). For two identical units sharing the same 100% load this would read 4VDC for perfect current sharing (i.e. 50% module load capability per unit). | Analogue voltage: +8V maximum; 10K to +12V_RTN |

TIMING SPECIFICATIONS

Turn-On Delay & Output Rise Time:

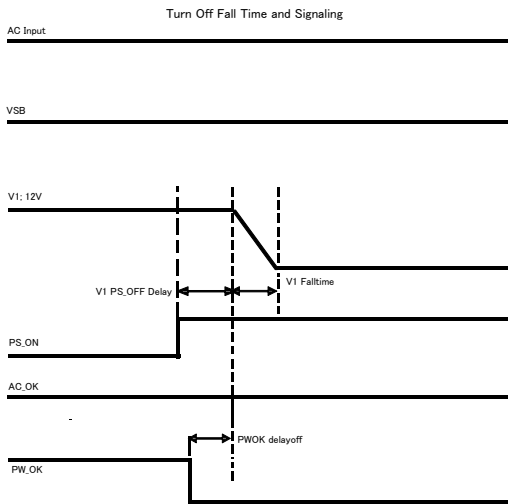


1. The turn-on delay after application of AC input within the operating range shall as defined in the following tables.
2. The output rise times shall be measured from 10% of the nominal output to the lower limit of the regulation band as defined in the following tables.

| Time | Min | Max |
|--------------------|-------|--------|
| Vsb Rise time | 100ms | 200ms |
| V1 Rise time | 20ms | 120ms |
| Vsb Power-on-delay | | 2700ms |
| V1 Power-on-delay | | 3000ms |
| V1 PS_ON delay | 100ms | 150ms |
| V1 PWOK delay | 100ms | 300ms |
| ACOK detect | 300ms | 2000ms |

TIMING SPECIFICATIONS

Turn-Off (Shutdown by PS_ON)

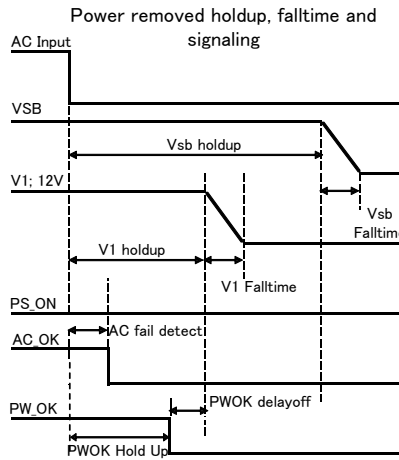


| Turn-Off Timing | Min | Max | Notes |
|-----------------|-------|-----|-------------------|
| V1 Fall time | - | - | Must be monotonic |
| V1 PS_OFF delay | 0ms | 5ms | |
| PW_OK delay off | 1.0ms | | |

1. Note this characteristic is applicable for the main 12Vdc output shutdown from PS_ON pulled high.

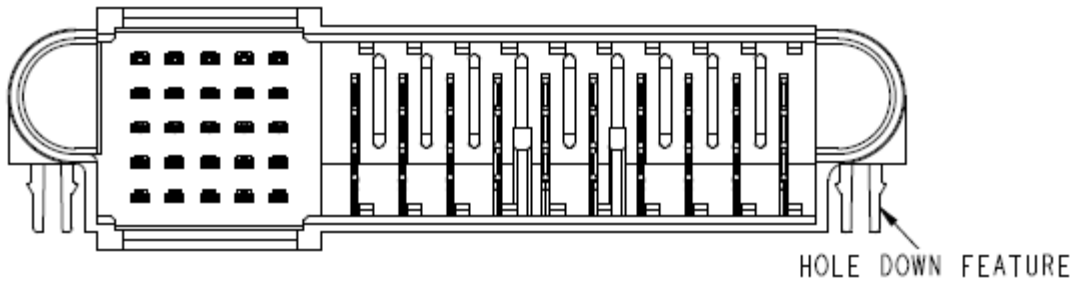
TIMING SPECIFICATIONS

Power Removal Holdup



| Power Removal Timing | Min | Max | Notes |
|-----------------------------|--------|------|-----------|
| Vsb holdup | 40ms | - | |
| V1 holdup (Effective Total) | 12ms | - | Full load |
| AC fail detect | - | 40ms | |
| PWOK delay off | 1.0ms | | Full load |
| PWOK Hold Up | 11.0ms | | Full load |

OUTPUT CONNECTOR & SIGNAL INTERFACE; FCI PN 10122460-005LF



| PART NUMBER | ROWS | SIGNALS | | | | | POWERS | | | | | | | | | | |
|-----------------------------|------|---------|---|---|---|---|--------|---|---|---|---|---|---|---|---|----|---|
| | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 10122460-005LF 25S + 10P | E | | | | | | | | | | | | | | | | |
| | D | | | | | | | | | | | | | | | | |
| | C | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | B | | | | | | | | | | | | | | | | |
| | A | H | | | | | | | | | | | | | | | H |

NB: With respect to signals "3" in Columns 5, refers to the shortest level signal pin; the "shortest" pins are the "last to make, first to break" in the mating sequence.

OUTPUT CONNECTOR PIN ASSIGNMENTS - D1U54P-W-650-12-HBxC

(Power Supply)FCI PN 10122460-005LF

| Pin | Signal Name | Comments |
|----------------|---------------|---|
| 6, 7, 8, 9, 10 | V1 (+12VOUT) | +12V Main Output |
| 1, 2, 3, 4, 5 | +12V RTN/PGND | +12V Main Output Return |
| A1 | +VSB | Standby Output |
| B1 | +VSB | Standby Output |
| C1 | +VSB | Standby Output |
| D1 | +VSB | Standby Output |
| E1 | +VSB | Standby Output |
| A2 | +VSB_Return | Standby Output Return |
| B2 | +VSB_Return | Standby Output Return |
| C2 | Unused | No End User Connection |
| D2 | Unused | No End User Connection |
| E2 | Unused | No End User Connection |
| A3 | ADDR | I ² C Address Protocol Selection; (Select address by appropriate pull down resistor – See table below) |
| B3 | Unused | No End User Connection |
| C3 | SDA | I ² C Serial Data Line |
| D3 | V1_SENSE_R | -VE Remote Sense Return |
| E3 | V1_SENSE | +VE Remote Sense |
| A4 | SCL | I ² C Serial Clock Line |
| B4 | PS_ON_L | Remote On/Off (Enable/Disable) |
| C4 | SMB_ALERT | Alert signal to host system |
| D4 | Unused | No End User Connection |
| E4 | AC_OK | AC Input Source Present & "OK" |
| A5 | PS_KILL | Power Supply "kill"; short pin |
| B5 | ISHARE | Active Current Share Bus |
| C5 | PW_OK | Power "OK"; short pin |
| D5 | Unused | No End User Connection |
| E5 | PRESENT_L | Power Module Present; short pin |

MATING CONNECTOR

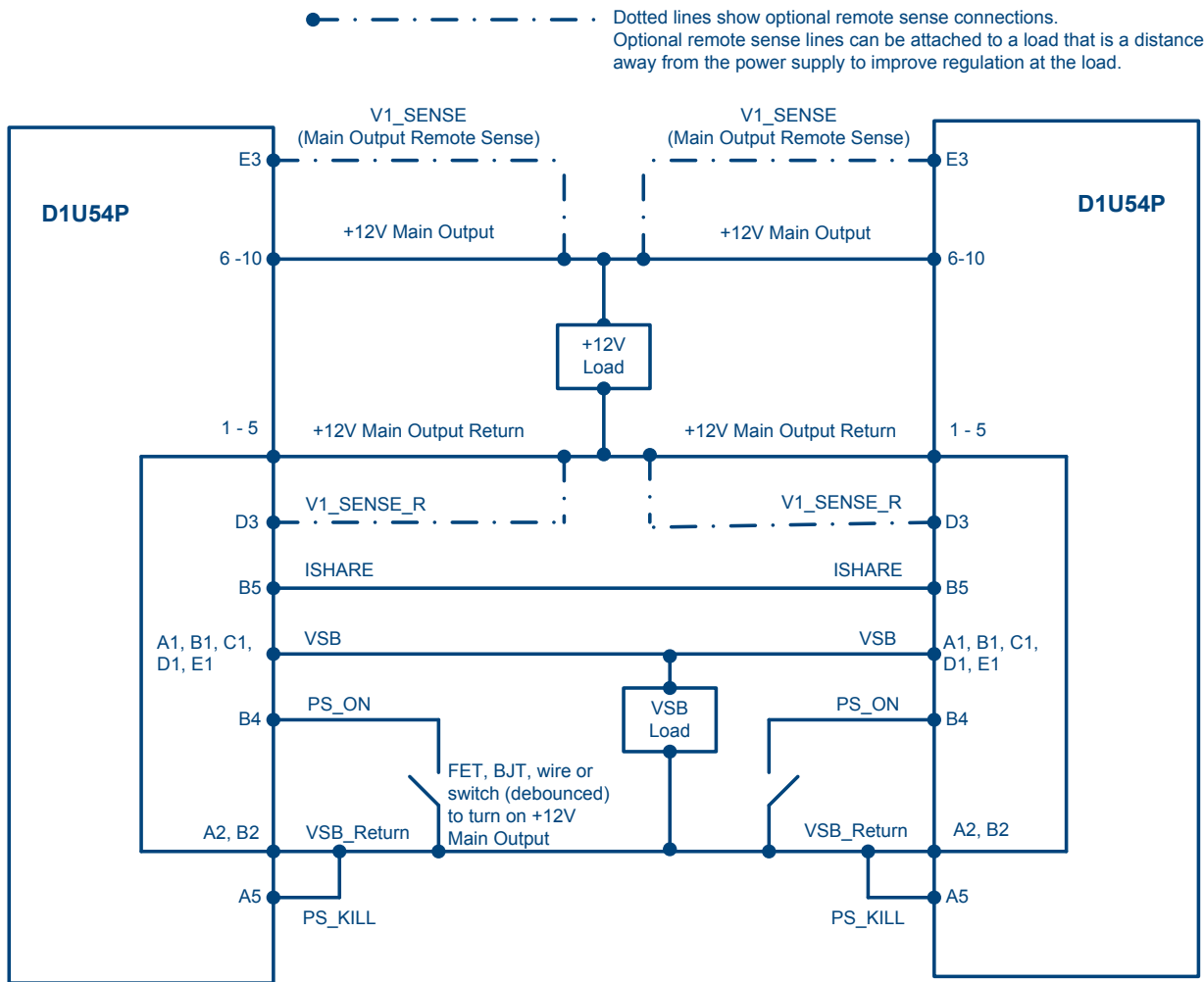
| Part Number | Description |
|-----------------------------|-------------|
| TE Connectivity 2-1926739-5 | Right Angle |
| FCI 10108888-R10253SLF | Right Angle |

ADDR ADDRESS SELECTION

| ADDR pin (A3) resistor to GND (K-ohm)* | Power Supply Main Controller (Serial Communications Slave Address) | Power Supply External EEPROM (Serial Communications Slave Address) |
|--|--|--|
| 0.82 | 0xB0 | 0xA0 |
| 2.7 | 0xB2 | 0xA2 |
| 5.6 | 0xB4 | 0xA4 |
| 8.2 | 0xB6 | 0xA6 |
| 15 | 0xB8 | 0xA8 |
| 27 | 0xBA | 0xAA |
| 56 | 0xBC | 0xAC |
| 180 | 0xBE | 0xAE |

* The resistor shall be +/-5% tolerance

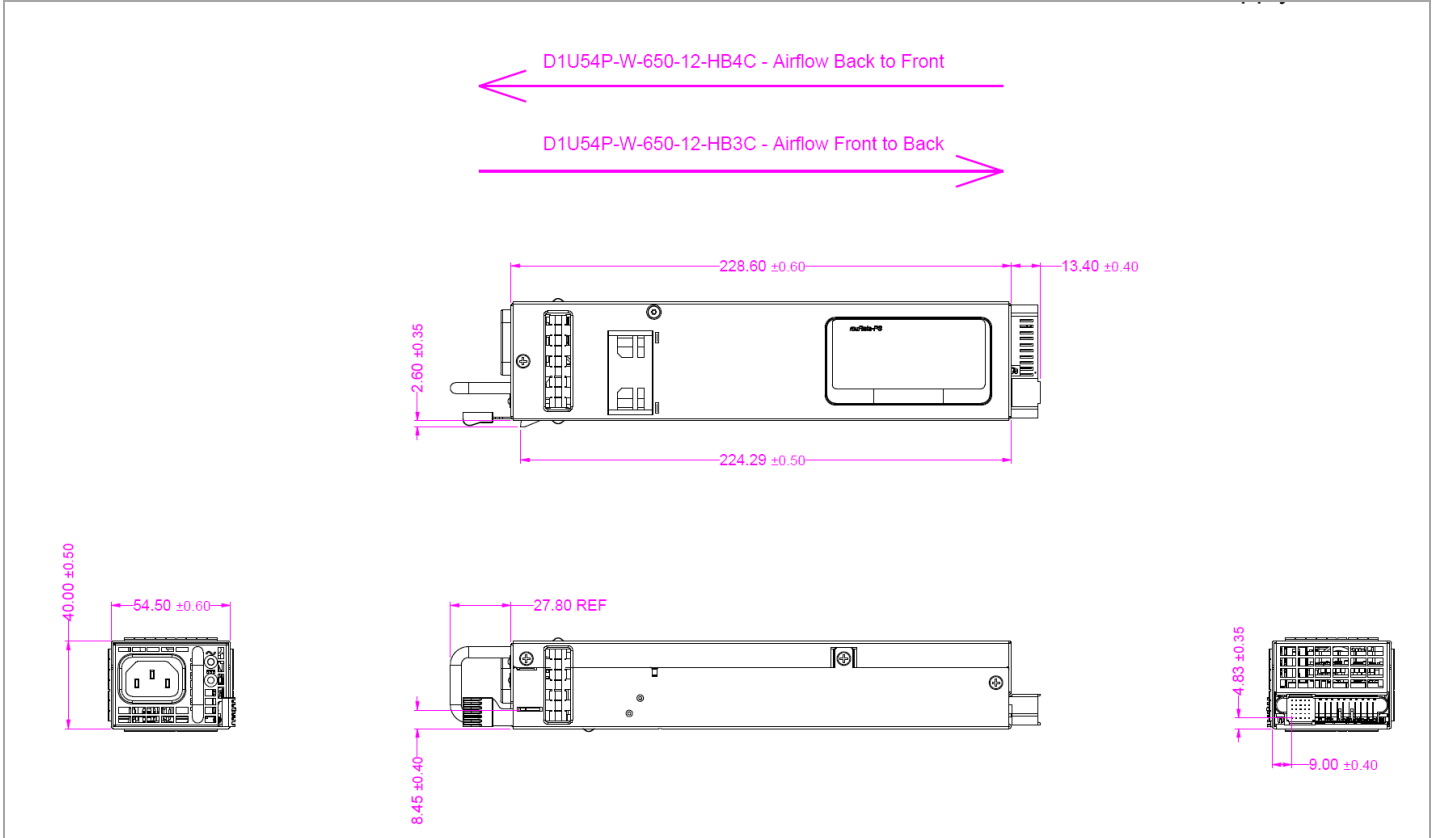
WIRING DIAGRAM FOR OUTPUT



CURRENT SHARE NOTES

1. Main Output: Current sharing is achieved using the active current share method details.)
2. Current sharing can be achieved with or without the remote (V_SENSE) connected to the common load.
3. +VSB Outputs can be tied together for redundancy but total combined output power must not exceed the rated standby power. The +VSB output has an internal ORing MOSFET for additional redundancy/internal short protection.
4. The current sharing pin B5 is connected between sharing units (forming an ISHARE bus). It is an input and/or an output (bi-directional analogue bus) as the voltage on the line controls the current share between sharing units. A power supply will respond to a change in this voltage but a power supply can also change the voltage depending on the load drawn from it. On a single unit the voltage on the pin (and the common ISHARE bus would read 8VDC at 100% load. For two units sharing the same load this would read 4VDC for perfect current sharing (i.e. 50% load per unit).
5. The load for both the main 12V and the VSB rails at initial startup shall not be allowed to exceed the capability of a single unit. The load can be increased after a delay of 3sec (minimum), to allow all sharing units to achieve steady state regulation.

MECHANICAL DIMENSIONS



1. AC input connector: IEC 320-C14
2. Dimensions: 2.15" x 9.0" x 1.57" [54.5mm x 228.6mm x 40.0mm]
3. This drawing is a graphical representation of the product and may not show all fine details.
4. Reference File: D1U54P-W-650-12-HBxC (M1876-M1877)_Drawing for Product Datasheet_20160119.pdf

OPTIONAL ACCESSORIES

| Description | Part Number | MPS Internal Part Number |
|----------------------------------|----------------|--------------------------|
| 12V D1U54P Output Connector Card | D1U54P-12-CONC | 8407001-1 |

APPLICATION NOTES

| Document Number | Description | Link |
|-----------------|---------------------------------|---|
| ACAN-64 | D1U54P Output Connector Card | http://power.murata.com/datasheet/?/data/apnotes/acan-64.pdf |
| ACAN-59 | D1U54P-x Communication Protocol | http://power.murata.com/datasheet/?/data/apnotes/acan-59.pdf |

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 ISO 9001 and 14001 REGISTERED



This product is subject to the following operating requirements and the Life and Safety Critical Application Sales Policy: Refer to: <http://www.murata-ps.com/requirements/>

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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