

## Application Notes

### 1 Scope

These application notes are a guide to applying the G128-809 Power Supply. They tell you how to install and connect the G128-809.

### 2 Description

The G128-809 provides a compact, efficient and reliable power supply where a regulated fixed 24VDC output is required for other DIN modules. A wide range of commonly encountered input supplies can be used. The DC output is isolated from the input supply. The DC output has good regulation and low noise, with a minimum 2A continuous capacity.

The G128-809 is idle and short circuit protected. Multiple G128-809's can be connected to provide redundant operation.

For a more detailed description see data sheet G128-809.

### 3 Installation

#### 3.1 Placement

A horizontal DIN rail, mounted on the vertical rear surface of an industrial steel enclosure, is the intended method of mounting. The rail release clip of the G128-809 should face down, so the front panel and terminal identifications are readable and so the internal electronics receive a cooling airflow. An important consideration for the placement of the module is electro magnetic interference (EMI) from other equipment in the enclosure. For instance, VF and AC servo drives can produce high levels of EMI. Always check the EMC compliance of other equipment before placing the G128-809 close by.

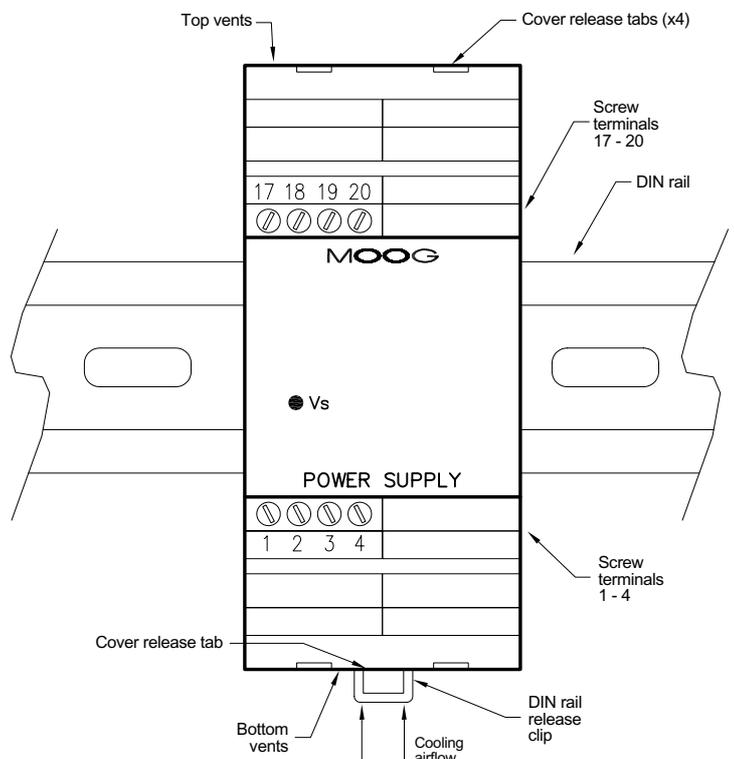
#### 3.2 Cooling

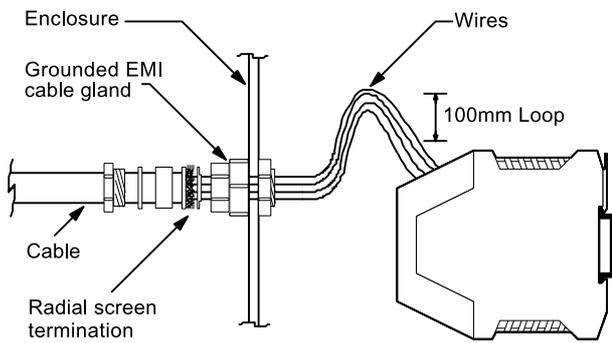
Vents in the top and bottom sides of the G128-809 case provide cooling for the electronics inside. These vents must be left clear. A spacing distance of a minimum of 100mm should be allowed above and below the cooling vents for placement of other modules. It is important to ensure that equipment below does not produce hot exhaust air that heats up the G128-809.

#### 3.3 Wiring

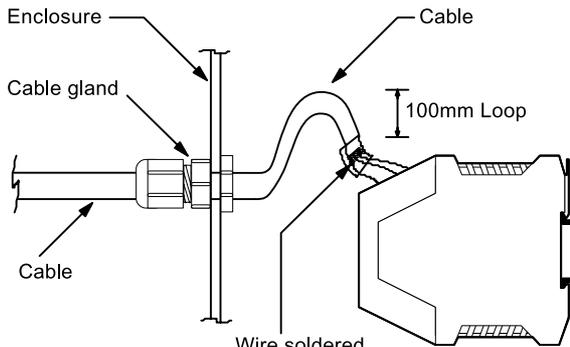
The use of crimp "boot lace ferrules" is recommended for the screw terminals. The input supply cable should be rated for the supply voltage used at an operating temperature of 75°C.

Do not work on the module while connected to the input supply. There are no internal adjustments in the G128-809.





**Preferred Wiring**



**Alternative Wiring**

### 3.4 EMC

The G128-809 emits radiation below the level called for in its CE mark test.

Immunity from external interfering radiation is dependent on careful wiring techniques. The accepted method is to use screened cables for all connections and to radially terminate the cable screens, in an appropriate grounded cable gland, at the point of entry into the industrial steel enclosure. Exposed wires should be kept to a minimum length. Connect the screens at both ends of the cable to chassis ground.

### 3.5 Power supply

The G128-809 can use either an AC or DC input supply. It must be possible to switch off the supply to the G128-809 using a suitable switch or disconnecting device. A suitable fuse must be fitted where DC supply is used.

- The AC supply can be in the range 90 to 260VAC, 45 to 65Hz.
- The DC supply can be in the range 90 to 350VDC.

## 4 Set-up



**Caution: Never carry out any work on the G128-809 when power is present. Danger to life.**

### 4.1 Input

The AC or DC supply connection is made using the screw terminals shown in the block wiring diagram. Wiring must be carried out properly to ensure protection against electric shocks.

### 4.2 Output

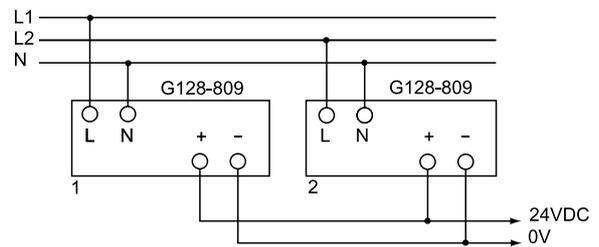
The +24V, 0V and DC OK signal is available on the screw terminals. The DC OK output provides 24V @ 20mA while supply is operating correctly. Refer to block diagram.

### 4.3 Short Circuit/Overload

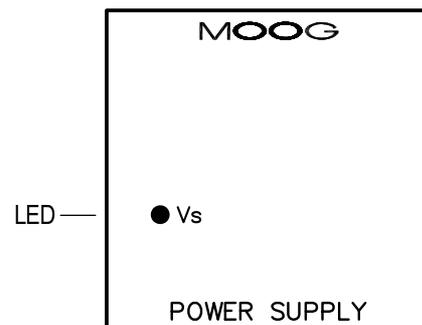
The G128-809 is short circuit protected and idle proof. In the event of an error the DC output is limited to 33V +/- 5%.

### 4.4 Redundant Operation

Multiple G128-809's can be connected together to form a redundant power supply.



## 5 Front panel



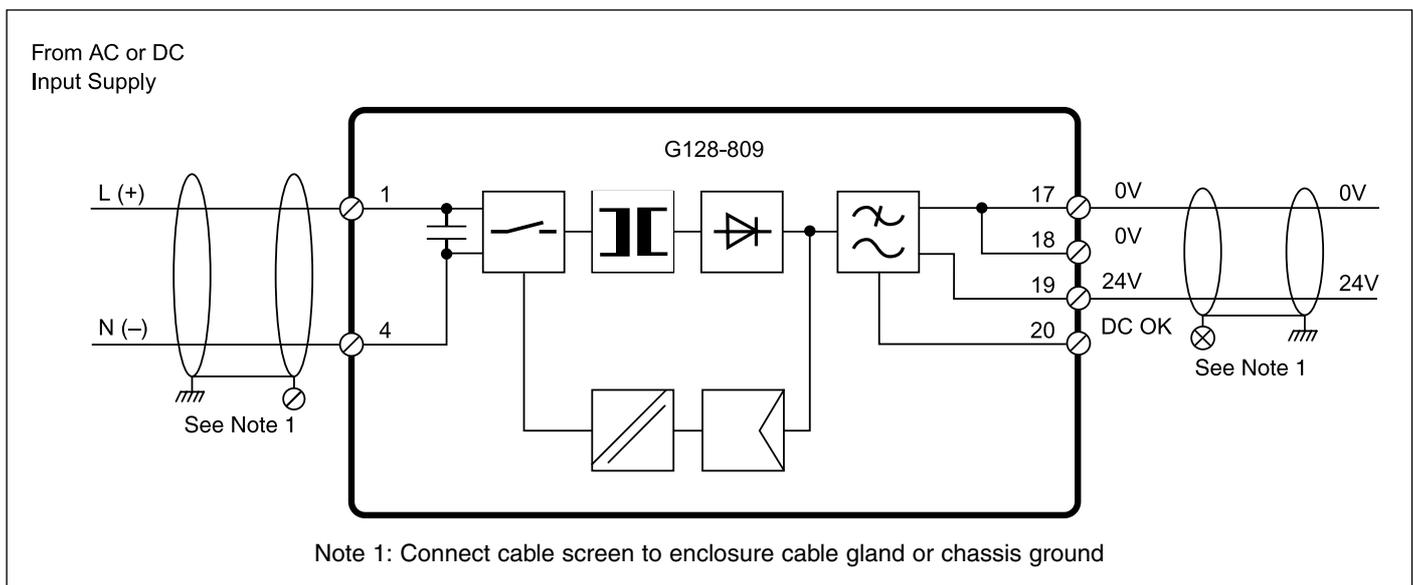
## 6 Withdrawing the circuit card from its case



**Caution: When the device is opened, a dangerous voltage may remain in the electrolytic capacitors for up to two minutes after shutdown.**

There are no internal user adjustments in the G128-809. If access to the circuit is required, the circuit card needs to be withdrawn from its case. To do this, push one tab in with a pen or screwdriver while gently pulling on the top cover on that side. The cover will release approximately one mm. Repeat on the other side and withdraw the cover and circuit card.

## 7 Block Wiring Diagram



## 8 Specifications

|                          |   |
|--------------------------|---|
| <b>Supply:</b>           | 90 to 260VAC, 45 to 65Hz.<br>90 to 350VDC.  |
| <b>Inrush current:</b>   | < 35A for < 3mS @ 25°C.   |
| <b>Isolation:</b>        | 4kV.  |
| <b>Mains buffering:</b>  | > 20mS @ 120VAC,<br>> 100mS @ 230VAC.   |
| <b>Output – voltage:</b> | 24VDC fixed –0% / +3%.  |
| <b>– current:</b>        | 4A max. @ 230VDC, $T_{amb} \leq 30^{\circ}\text{C}$ .<br>2A max. @ all input voltages,<br>$T_{amb} \leq 60^{\circ}\text{C}$ . |
| <b>Startup delay:</b>    | < 100mS.  |
| <b>Ripple:</b>           | 100mV p-p typical at nominal load.  |
| <b>Load regulation:</b>  | < 1% static for 10% to 90% load<br>change.<br>< 3% dynamic for 10% to 90%<br>load change.                                     |

|                               |   |
|-------------------------------|---|
| <b>Maximum power loss:</b>    | 10W at nominal load.                                  |
| <b>Front Panel Indicator:</b> | Vs: Green power LED.                                  |
| <b>Mounting:</b>              | DIN rail.   |
| <b>Protection type:</b>       | IP 20.  |
| <b>Temperature:</b>           | 0 to +40°C.   |
| <b>Dimensions:</b>            | 100W x 108H x 45D.                                    |
| <b>Weight:</b>                | 250g.   |
| <b>Approvals:</b>             | CE mark: EN50081.2 emission.<br>EN61000-6-2 immunity. |

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## Internet Data

For a detailed Data Sheet and the latest version of this Application Note please refer to the Moog website  
[www.moog.com/dinmodules](http://www.moog.com/dinmodules)

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