

Data sheet

ETH-PSD2

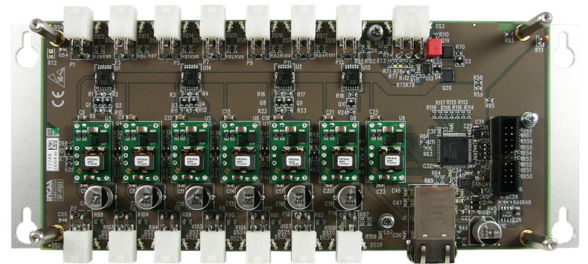
Ethernet module level product

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Power Supply Distribution with Ethernet control and watchdog

Features

- 14 Power Supply Outputs
- All channels are switchable over Ethernet
- Watchdog function for each channel
- 10/100 Mbit/s Ethernet interface
- Simple command set and configuration
- Configurable IP address
- On board power cycle control command
- Measurement of temperature and power supply voltage
- 14-36V DC input power supply
- Standard output configuration 7xDC input, 5x12V, 7.5V and 5V



Description

The PSD2 is a configurable power distribution module with 14 outputs. Each channel has its own watchdog function. The watchdog is triggered by TCP or UDP commands. When a watchdog time-out occurs the corresponding output is unpowered for a configurable time and then powered again. Each channel can also be controlled by software commands, in this case the watchdog function is switched off automatically.

Technical Specifications

INPUT

- Ethernet : 10/100 Mbits/s
- Protocol : TCP / UDP
- Input connector : RJ-45

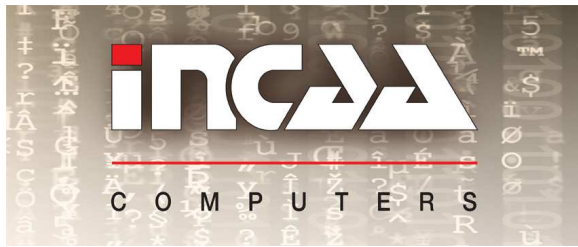
OUTPUT CHARACTERISTICS

- Number of outputs : 14
- Arrangement : 7x DC input, 5x 12V, 7.5V and 5V
- Max. Load : 10A, 3A for channels =<12V, 30A in total

STATUS

- LEDs for each channel : Output on/off

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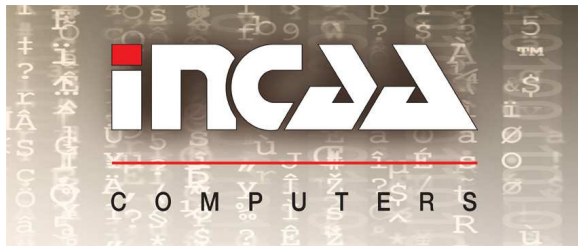
ENVIRONMENTAL CONDITIONS

- Max. operating relative humidity : 90 %, no condensation
- Operating temperature range : -20 °C to 50 °C
- Power supply requirements : + 14 - 36 Volt. Max 30A

WARRANTY

: 1 year

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Operation

Open a TCP/IP socket on port 21040 to the PSD2 and communicate with the commands below. For behind NAT operations the PSD2 can also connect to a server that will do the same commands.

The outputs can be controlled by software commands:

- Kick (Trigger)
- Reset
- Switch Off
- Switch On
- Get Status

Kick: To start a Watch Dog function it is necessary to send a “kick” command to the PSD2. This command has three parameters: the channel number, the reset time and the timeout value. After the first “kick” command the PSD2 expects an new “kick” command within the specified time otherwise it will switch off the output as long as specified by the reset time. After that it will wait for another command. “Kick” commands that are received during the reset time are ignored.

A “kick” command enables the output, even when it was switched off with the switch off command.

Format: {6(i32)} {0(u8)} {chnr(u8)} {reset time(u16)s} {watchdog time-out(u16)s}
Return: OK = Command accepted, NO = Command not accepted.

Reset: This command can be used to manually perform a reset. It has three parameters: the channel number, the reset time and the delay time. This command executes a delayed action: it switch off the output as long as specified by the reset time after the delay time has expired.

A reset command stops the Watchdog function.

Format: {6(i32)} {1(u8)} {chnr(u8)} {reset time(u16)s} {delay time(u16)s}
Return: OK = Command accepted, NO = Command not accepted.

Switch Off: This command has one parameter: the channel number. With this command you are able to switch off the power output of the corresponding channel.

A Switch Off command stops the Watchdog function.

Format: {2(i32)} {2(u8)} {chnr(u8)}
Return: OK = Command accepted, NO = Command not accepted.

Switch On: This command has one parameter, the channel number. With this command you are able to switch on the corresponding power output channel.

A Switch On command stops the Watchdog function.

Format: {2(i32)} {3(u8)} {chnr(u8)}
Return: OK = Command accepted, NO = Command not accepted.

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Get Status: This command has one checksum parameter, which should be always 1(one). The return value consists of two U32 values, which represents the ADC values for Temperature and Power supply input voltage. Please refer to the examples below how to convert the ADC code to temperature or volt readings.

Format: {2(i32)} {4(u8)} {checksum(u8)}
Return: 8 bytes consisting of two U32 ADC values.

Special commands are available to change IP configuration and Firmware.

Example 1:

Formula to calculate Temperature in degrees Celsius:

$$\text{Temp} = 1 / (0,003354016 + 0,0002744032 * \ln\left(\frac{R}{R_{ref}}\right) + 3,666944E - 6 * \ln\left(\frac{R}{R_{ref}}\right)^2 + 1,375492E - 7 * \ln\left(\frac{R}{R_{ref}}\right)^3) - 273,15$$

$$R = \frac{33000}{\frac{3,3}{4095} * X} - 10000$$

Rref = 22000

Example 2:

Formula to calculate the power supply input voltage in Volts:

$$\text{Voltage} = \frac{\frac{3,3}{4095} * X}{0,09} \text{ (Volt) (where x is the ADC code)}$$

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