



Universal Power & Communication Module



Overview

The Model 2715 Universal Power and Communication Module (UPCM) provides a surge-suppressed power supply and communication interface that is used to supply power to weather sensors and to provide a communication interface between the sensor(s) and the data processing system.

The UPCM provides electrical surge suppression circuitry on all power, signal, and communication interfaces to protect against lightning and other line transients. The protection circuit consists of gas discharge tubes, TVS diodes, and current-limiting devices.

The UPCM has AC and DC outputs, which can be turned on/off via on-board switches or via commands sent to the serial and Ethernet interfaces.

Accuracy by Design

The UPCM monitors its own status using current and voltage detection circuits, and it monitors the environment in which it operates using temperature and relative humidity sensors. The temperature information is used to control an optional enclosure heater. Set points for turning the heater on/off are adjustable, and can be set by the user.

Features

The UPCM has two sets of serial ports and one RJ-45 jack. Optional serial port modules may be added to increase the number of sensors connected through a serial port. The following serial and Ethernet protocols are supported...

Serial Protocols	Ethernet Protocols
3-wire RS-232	TCP/IP 10/100 Base-T
RS-485 half duplex	
RS-485 full duplex	

COMPONENTS

SPECIFICATIONS

Parameter	Specification
Electrical	
Supply Voltage - AC	85–265 V AC, 10 A 47–63 Hz
	Protected by two 10 A slow-blow fuses, surge-suppressed AC line voltage is also available to power other devices up to 500 W.
Supply Voltage - Solar	8–37 V DC (must be at least 15 V DC to charge backup battery)
AC Output Voltage	24 V AC, 8 A 47–63 Hz
DC Output Voltage	Switch-selectable 12 V DC or 24 V DC 100 W max
DC Output Module*	-5 V DC, 2A +12 V DC, 1A
Individually Configurable Serial Ports	
Number of Serial Ports	3 (including 1 optional port)
Serial Protocols	RS-485 (half duplex) RS-485 (full duplex)** 3-wire RS-232 (no flow control)
Serial Baud Rates	1200 to 15200 bps
Maximum Packet Size	1 kB
Data Bit Setting	5, 7, or 8
Parity Setting	Odd, Even, or None
Step Bits Setting	1 or 2
Serial Port Connectors	Pluggable Terminal Blocks 3.81 mm pitch
Ethernet Port	
TCP/IP	10/100 Base-T
Connector	RJ-45 Jack
Fan Tachometer	
Frequency Range	0 to 10,000 Hz
Maximum Voltage	5 V DC
Connector	Pluggable Terminal Blocks 3.81 mm pitch
Counter	
Count Range	0 to 10,000 s ⁻¹
Maximum Voltage	5 V DC
Connector	Pluggable Terminal Blocks 3.81 mm pitch

Environmental		
Operating & Storage Temperature	Without Heater	-40 to +70°C (-40 to +158°F)
	With Heater	-70 to +70°C (-94 to +158°F)
Humidity	0-100% (noncondensing)	
Mechanical		
Mounting	Mounting slots on enclosure, diameter = 0.11" (0.29 cm), held in place by #8 spring-load panel screw at top of enclosure	
Enclosure Material	Aluminum	

ORDERING INFORMATION

Part Number	Description
2715	Universal Power & Communication Module
M404893-00	Serial Port Module
M404895-00	+5 V and -12 V DC Output Module
M406306-00	256MB microSD Card
M442089-00	10 A 250 V, 5x20 mm Slow Blow Fuse
M438130-00	Backup Battery

DIMENSIONS & WEIGHTS

Enclosure Dimensions	2.50" W × 13.50" H × 5.23" D (33.7 cm × 34.3 cm × 13.3 cm)
Backup Battery Dims.	1.94" W × 10.63" H × 3.10" D (4.9 cm × 27.0 cm × 7.9 cm)
Weight	5.5 kg (12 lb)
Shipping Weight	7.5 kg (17 lb)



All Weather Inc.
1165 National Dr.
Sacramento, CA 95834

Phone: 916-928-1000
USA Toll Free: 800-824-5873
Fax: 916-928-1165

allweatherinc www.allweatherinc.com

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