

- +** SCADA , Monitoring & Control
- +** On board Data Radio as Standard
- +** Multiple Data Radio Options
- +** Multi-Session Ethernet Capability
- +** IEC Ladder Diagram with PID
- +** Serial RS232 & RS485 ports
- +** DNP3, Modbus and other protocols
- +** USB Programming Port
- +** Windows 8 Compatible



The Miri **AD2006+** Telemetry Module represents an enhanced version of the proven AD2006 series of modules, offering an extremely versatile, digital wireless based product, which finds application in all forms of data acquisition and control systems for industry and public utilities.

The Miri **AD2006+** combines many features in a single compact package offering physical I/O, serial interfaces and multiple communications facilities in the same unit. This enables the module to be connected to discrete field I/O as well as providing simultaneous interfacing to third party devices.

The I/O is designed to accommodate digital, analog and pulse inputs. The digital are available in two ranges ... 10-35VDC/AC or 70-130VDC/AC. Relay outputs provide galvanic isolation to real world field devices. Two form 'A' and two form 'C' outputs are provided.

There are 8 analog channels in total which are configurable as all inputs or with up to four output channels if the analog output option is installed. The analog input range is on-board configurable and includes the 0-20mA and 4-20mA standards.

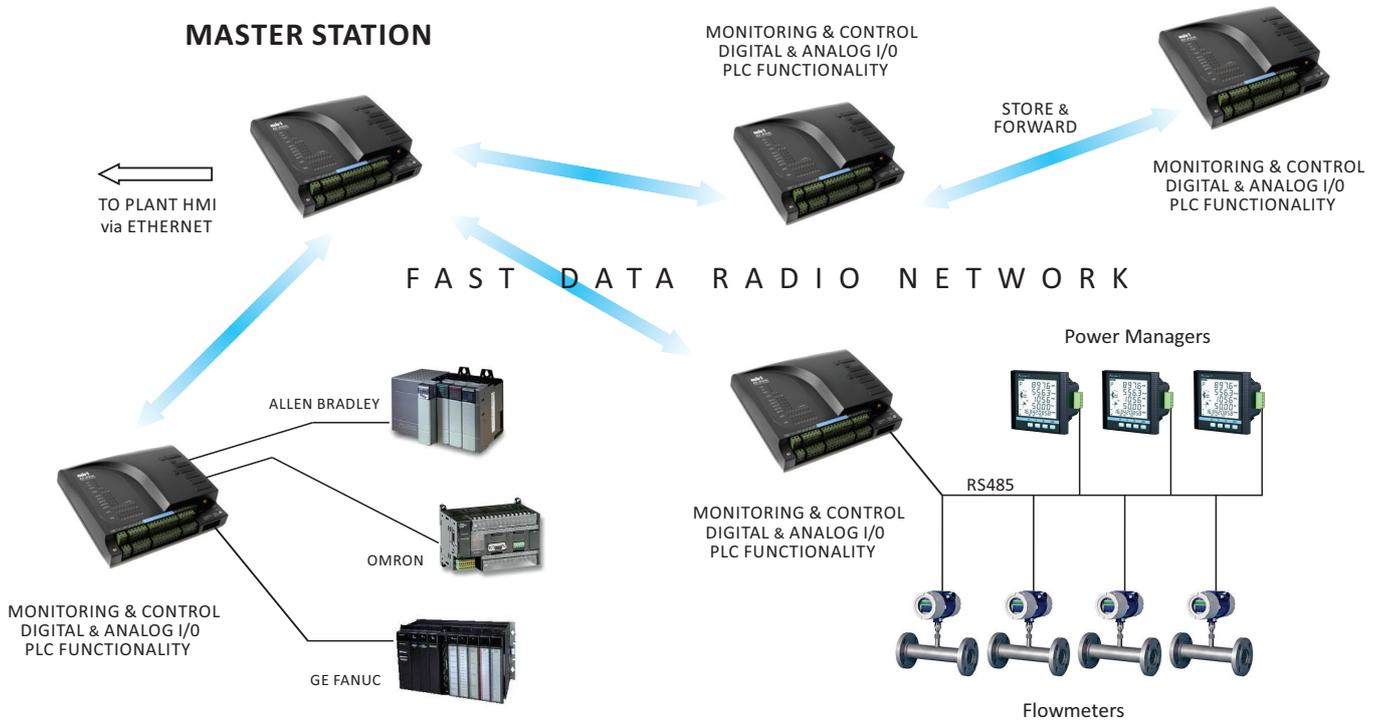
In addition to RS232 and RS485 serial ports the **AD2006+** has a multi-session Ethernet Port which is able to handle up to eight different protocols simultaneously.

Wireless networking is achieved by way of on-board fast data radios which can provide radio networking in a number of frequency bands. The **AD2006+** modules can also be interfaced to external radios, thus providing the capability for communications on multiple radio channels in the same module. Each telemetry module has the inherent ability to be configured as a Master, Slave or as a Repeater to store and forward data.

The Miri over-the-air protocol incorporates a hybrid Broadcast/Event/Polling régime which enables optimum performance to be achieved in any system. The product also supports a number of industrial standard communication protocols including Modbus and DNP3. This provides for the integration of different third party devices and different protocols into the same communications network.

On-board logic functions provide the facility for local control and data processing via an IEC standard Ladder Diagram programming interface. Function blocks include PID Control, Boolean logic, Timers, Counters, Data Move & Bit Shifting, Arithmetic and Floating Point Maths etc. Default control programs and event logging can be initiated in the event of a loss of radio communications.

The **AD2006+** modules operate from a universal 10-30VDC power supply and can be delivered with stand alone solar power supplies.



The **AD2006+** modules can be used in any one or all of the following modes :-

- ✚ As a basic RTU to read and write signals to and from remote sites.
- ✚ As a PLC using the on-board ladder logic capability for local process control.
- ✚ As a gateway to incorporate third party devices into the one radio network.
- ✚ A single AD2006+ module is all that is required for a Master Station, thus eliminating the high Base Station cost associated with many other systems.

The Miri over-the-air hybrid operating system allows the user to assert priorities and optimise overall system performance. All modules also have the ability to act as repeaters, such that remote stations which are out of radio range of the Master Station may be reached via intermediate RTUs without the need for additional infrastructure. These capabilities are not available with protocols designed only for serial communications, such as Modbus.

Whilst a single AD2006+ can be used simply to monitor and control a remote installation such as a Production Bore, the PLC capabilities of the modules make it unnecessary to employ an additional PLC for local control of a Pump Station.

Since the AD2006+ modules support many standard industrial protocols it is possible to accommodate other PLCs and third party devices into the same radio network via protocols such as CCM, Allen Bradley, Omron and Modbus. The AD2006+ modules can also communicate with multiple other devices such as Flowmeters or Power Managers via a multidrop RS485 link.

DIGITAL INPUTS - 16

Two input voltage ranges are available :

10-35VAC/DC	AD2006+x-Lx-xx
70-130VAC/DC	AD2006+x-Hx-xx

FAST PULSE COUNTERS

The first two digital inputs can be configured as pulse counters to 5KHz.

All digital inputs can count to 5Hz.

DIGITAL OUTPUTS - 4

The digital outputs are configurable as either isolated relays or transistor outputs.

Isolated relays - 2 form A + 2 form C
3A @ 30VDC/240VAC

COMMUNICATIONS PORTS - 5

The AD2006+ has five communications ports which support a number of communications formats and industrial standard protocols. Port 1 is normally used by the internal data radio, or connected to an external radio or modem.

Port 1 - Internal or external RS232.

Port 2 - RS232.

Port 3 - RS485.

Port 4 - USB 2.0 Programming Port.

Port 5 - Ethernet 10/100Mb/s or RS232.

ANALOG INPUTS - 8

The analog input channels may be configured as follows :-

4-20mA / 1-5V	Resolution - 12 bits
0-20mA / 0-5V	Accuracy - 0.1%
or 0-1V	Linearity - 0.1%

There are 8 analog input channels, 4 of which may be used as analog outputs by installing the 4 channel analog output option. With the analog output option installed, any or all of the last four analog channels can be configured internally to convert them to analog outputs.

Channel 8 can also be configured internally to monitor the DC supply to the module. This is typically used for solar powered installations to monitor the battery voltage.

ANALOG OUTPUTS - 4

Output format 4-20mA	Resolution - 16 bits
	Accuracy - 0.1%
	Linearity - 0.1%

COMMUNICATIONS PROTOCOLS

The AD2006 supports a number of industrial standard protocols which include :-

Allen Bradley DF1
DNP3
DNP3 TCP
GE-Fanuc/Koyo CCM
Modbus RTU/ASCII
Modbus TCP
OPC Server

DATALOGGING - 1Mbyte Flash on-board memory.

Logging may be scheduled or event driven up to 100,000 time-stamped readings.

PLC CONTROL LOGIC - IEC61131.3 Ladder Diagram with PID

I/O EXPANSION MODULES

The field I/O of the AD2006+ can be expanded up to 512 points by using range of I/O expansion modules available. These are DIN rail mounting units and up to 32 modules can be driven from the RS485 port of the AD2006+. This means that they can be remote from the AD2006+ module within the normal limits of RS485 communications.

Modules available :-

M16-LN	16 Digital Inputs	10-35VAC/DC
M16-HN	16 Digital Inputs	70-130VAC/DC
M16-TR	16 Relay Outputs	2A@ 30VDC/240VAC
M8-AD	8 Analog Inputs	4-20mA/1-5V, 0-1V 0-20mA/0-5V
M4-DA	4 Analog Outputs	4-20mA

RADIO OPTIONS

There are a number of radio options available for the AD2006+ modules. These include VHF, UHF, Spread Spectrum and Tetra.

POWER SUPPLY 10-30VDC

POWER CONSUMPTION - Without radio 1.4W
With internal digital radio - Receive 2.5W Transmit 10W

WEIGHT Without internal radio - 700g
With internal radio - 900g

OPERATING TEMPERATURE -20° to +70°C

DIMENSIONS - 202 x 178 x 60 Mounting bracket supplied.

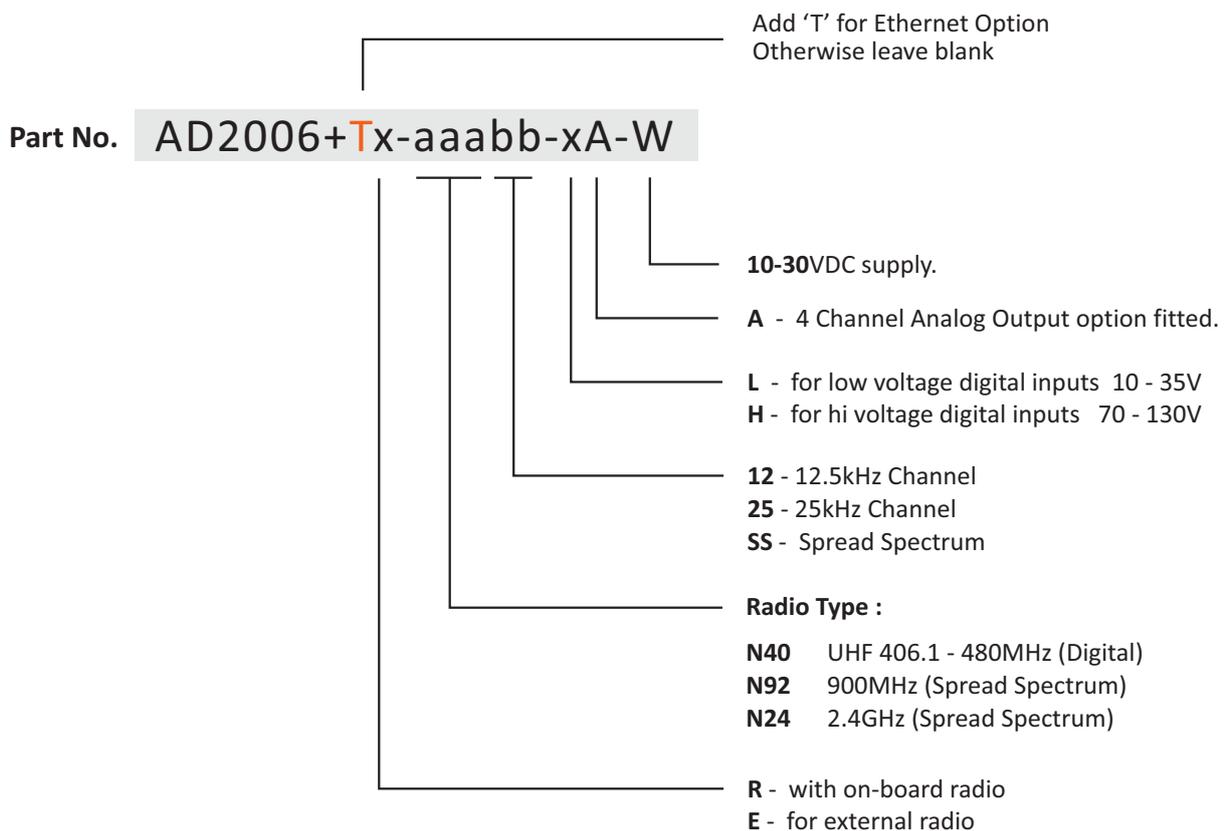
Ordering Information

The AD2006+ modules come with the following standard features :-

- + 2 RS232 Serial Ports
 - + 1 RS485 Serial Port
 - + 1 USB Port

 - + 16 Digital Inputs (including 2 fast pulse counters)
 - + 4 Isolated Relay Outputs
 - + 8 Analog Channels
- *Note: With the factory fitted Analog Output option, any or all of the last 4 channels can be configured as 4-20mA analog outputs.*

Other options are designated as follows :-



The AD2006+ part number is displayed on the rear of each unit together with other relevant information.

AD2006+R-N4012-LA-W

Hardware version - Rev. 4 serial no **12551**

Tx frequency - 450.125 MHz

Rx frequency - 450.125 MHz

Nelspruit Water

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