Computer Weld Technology, Inc.

Micro ADM™

Micro Arc Data Monitor

The Micro ADM™ Sensor is a lightweight; compact, multi-sensor unit designed for monitoring, Parameter Testing and telemonitoring service purposes in a welding environment. The Micro ADM™ Transducer includes an embedded micro-controller to provide the necessary data acquisition, signal processing and communications firmware to allow remote logging/testing of the arc voltage, arc current, wire feed speed and shielding gas pressure. The optional Arc*Trak* Plus™ software offers the ability to program, download data and communicate with multiple Micro ADM™ units. The light weight, easy to install design allows the user to install the Micro ADM™ at the wire drive motor inlet using industry standard quick disconnect conduit fittings or to a fixed surface with the optional mounting brackets.

Micro ADM™ - Standard Configuration

Micro ADM™ with Optional Mounting Bar Kit

The LED indicators provide the operator or maintenance personnel with a quick visual indication of sensor activity. The unit is powered by a user supplied external 24 VDC power source via the sensor interface cable. This cable also provides an RS-485 Full-Duplex serial communications port to an external system (data acquisition or PLC). A second Remote I/O cable is provided to allow an external PLC/Robotic controller to control and monitor the sensors embedded fault testing routines.

Total isolation of all sensors from the welding arc. Arc current is measured using a laser trimmed hall-effect transducer. Arc voltage sensor provides a 1 KV isolation using capacitive isolation technology. The wire speed transducer is a precision optical encoder housed in a Delron body, for isolation and mechanical rigidity, with a heavy duty sealed bearing cartridge for increased durability. An integrated silicon differential pressure sensor provides torch shielding gas back pressure measurements.

FEATURES

- Industry standard quick disconnect fittings for wire speed transducer and mounting
- Hall-effect current transducer with 25 mm opening for welding cable
- A screw terminal block connections for positive and negative voltage sense leads
- Gas pressure sensor to measure welding torch back pressure
- Optional mounting brackets
- Two BCD switches provided to allow external definition of 1 to 247 MODBUS™ addresses

BENEFITS

- Mount directly to any wire drive motor inlet
- Provides electrical isolation and reduces cable heating by eliminating additional mechanical connections
- Provides easy installation of voltage sense leads and allows custom wire length
- Provides indication of torch degradation due to leaks or clogged gas orifice or nozzle
- Allows remote mounting of sensor using standard quick disconnect conduit assemblies for wire speed sensor
- Communication with multiple Micro ADM™ transducers with optional software package

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Micro ADM™ SPECIFICATIONS

CURRENT SENSOR	
Current Range	0 - 600 amps (DC)
Relative Precision of Range	±1%
Max Linearity Error	± 0.9 % of reading
Band Width at ±1db	2.5 Khz

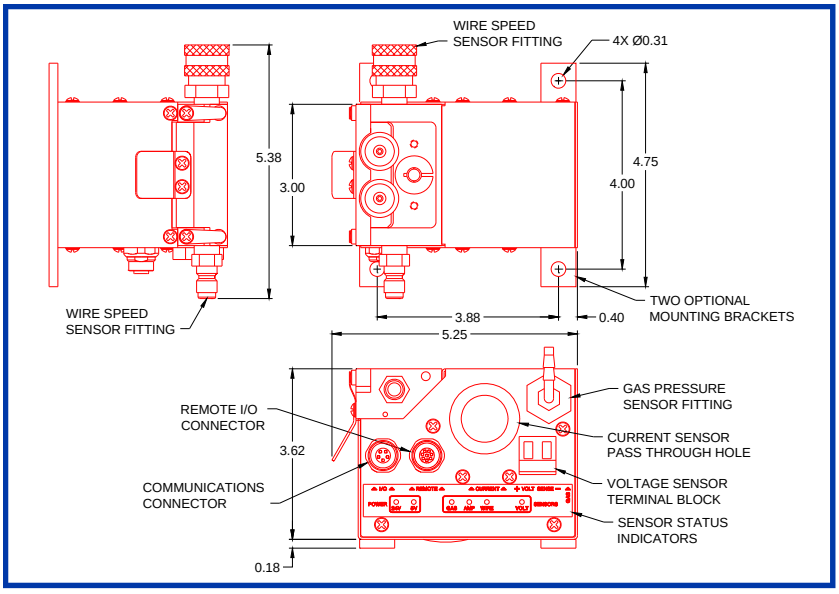
VOLTAGE SENSOR	
Voltage Range	0 - 100 volts (DC)
Relative Precision of Range	±1%
Max Linearity Error	± 0.5 % of reading
Band Width at ±1db	2.5 Khz

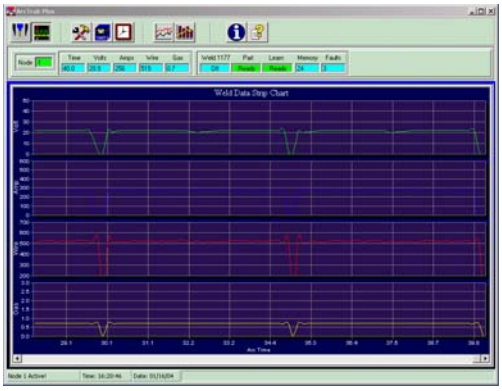
WIRE SPEED SENSOR	
Wire Diameter (min / max)	0.30 – 0.62 (0.8 mm / 1.6 mm)
Speed Range	10 – 1000 ipm (4 – 420 mm / s)
Relative Precision of Range	±3%

GAS PRESSURE SENSOR	
Pressure Range	2.18 – 14.5 Psi (15 – 100 Kpa)
Relative Precision of Range	±3%
Max Linearity Error	± 1.8 % of reading
Band Width at ±1db	250 Hz

Micro ADM™ GENERAL SPECIFICATIONS	
Dimensions	5.25" L x 5.38" W x 3.81" H (133 mm L x 137 mm W x 97 mm H)
Weight	2.7 lbs (1.2 kgm)
Communications	MODBUS™ RTU

Micro ADM™ Product Part Numbers	
Part Numbers	Description
A0A0114	Micro ADM™ System (Includes: Transducer and Cables)
A2A0025	Mounting Bar Kit





ArcTrak Plus™ Micro ADM™ Data Logging Program

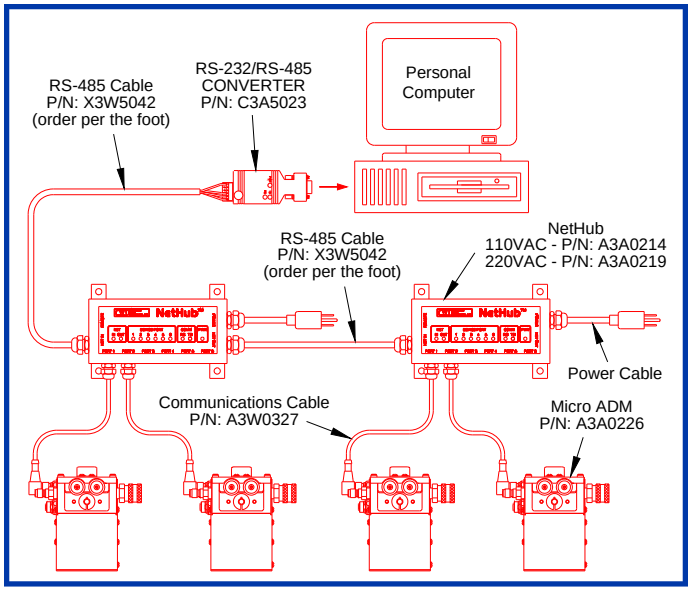
The ArcTrak Plus™ program provides a GUI for the Micro ADM™ sensor using the ModBus RTU protocol. The Program allows the user to Collect, Graph and display weld data in a real time mode. The program provides a simple interface to configure the Micro ADM™ sensor parameter. The Micro ADM™ sensor is designed to provide the end user with a simple and cost effective, in-process weld monitoring system. The sensor provides fault testing of the basic welding parameters (i.e. Volts, Amps, Wire Speed, Gas Pressure and Arc Time). It incorporates an advanced testing algorithm that provides three levels of fault testing. The sensor provides in-process parameter limit testing, Arc Density (AAD) for each weld in a Part and a ADD, Weld Count and Volume Applied test for each Part.

ArcTrak Plus™ Product Part Numbers	
Part Numbers	Description
A5Z0040	ArcTrak Plus™ Software

NetHub™

NetHub™ is an isolated RS-485 communications driver and power supply to connect up to six Micro ADM™ Sensors to the MODBUS™ RTU network. A total of 247 sensors may be connected to the network using multiple NetHub™ units.

NetHub™ Product Part Numbers	
Part Numbers	Description
A3A0214	110 VAC NetHub™
A3A0219	220 VAC European NetHub™
X3W5042	RS-485 Cable (Cable needed between NetHub™ units or between NetHub™ unit and RS-232/RS-485 Converter at your personal computer)
C3A5023	RS-232/RS-485 Converter
X3T5036	110VAC Power Supply
X3T5047	220VAC Power Supply



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