

# ALX III



## Advanced welding data-logging and monitoring systems



The ALX III is a fully digital and WiFi enabled weld monitoring and data-logging system using the very latest technologies. This allows them to use wireless technology for both network connectivity and for use with TVC Wireless Sensors.

All units are supplied as a single channel system, however, can easily be upgraded to monitor up to four channels simultaneously\*. Pre-loaded with VNC interface software as standard, remote assistance and software updates can be provided wherever in the world the equipment is based.

With the latest software advances, TVC have several layers of user interfaces enabling operators to digitally interface with IoT and Industry 4.0 compliance at all levels, facilitating the smooth digital exchange of welding data. The innovative software and electronics allow the monitoring, capture and analysis of pulsed welding processes.



Available as a Portable unit for operation in remote locations, as a multi-channel Workstation, or a Rack-mount System (RS) for use with a remote keyboard and monitor, the ALX III Series can fulfil all welding data logging requirements.

All options can be retrofitted to the ALX III systems. If a new option requirement is identified after purchase, systems can be quickly and simply updated.

ALX III Portable and RS units and their accessories are supplied in rugged protection cases and all equipment can be shipped internationally by road, sea or air transportation.



- Battery or mains powered (ALX III Portable and RS), with up to 3 hours charge from a single lead acid battery pack.
- Mains powered with internal battery backup (ALX III WS).
- Single channel as standard (option to add further channels) \*
- Non-intrusive probes
- Monitors voltage and current as standard
- Options for wire feed, gas flow, travel speed, type 'K' contact temperature measurement, purge oxygen level, wireless laser depth (weld height) measurement, wireless multi-channel temperature measurement, wireless travel speed and wireless wire feed tachometers
- Optional pulse monitoring and analysis software package
- Complete WPS programmable from root to cap
- TIG H.F. protected
- "Intelligent" battery charger combined mains PSU



- Network connection and USB ports
- Wireless connectivity
- Cladding / Weld Overlay / Automatic / Robotic specific operation and software packages
- Pipeline specific operation and software packages
- Auxiliary Inputs configured to customer specification
- RFID Card User Login/Identification
- Bar Code scanners for Consumable identification

\* Up to two channels only on RS Model

## ALX III PORTABLE

The ALX III Portable is a "go-anywhere" battery powered unit capable of monitoring all types of arc welding in the workshop or remote locations.

Facilities to monitor all the main arc welding parameters make the ALX III Portable the most user friendly and versatile welding data logger and reporting system available today.

Using the standard software package, the unit can monitor voltage, current, wire feed speed, travel speed, gas flow, temperature, purge oxygen levels, hot wire current and voltage parameters producing average figures for all parameters, plus automatic heat input and energy calculations.

As standard, the ALX III Portable system can only monitor one welding power source. When fitted with the optional additional input channels, the system can simultaneously monitor up to four welding power sources. This makes it ideal for the field measurement of Twin Torch Twin Bug Pipeline Welding systems or, alternatively, for monitoring GTAW equipment with Hot Wire facility.

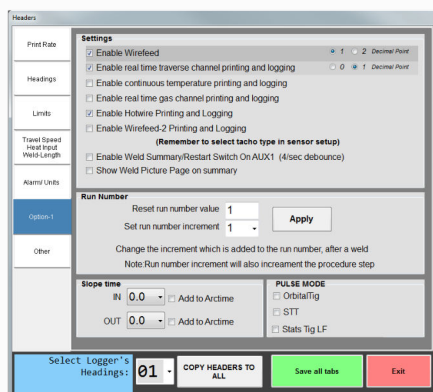
The on-board printer produces a hard copy print right at the welding location which, combined with the unit's reporting software package, gives the welding/QC engineer the facility to produce instant weld reports and specifications at the point of welding. The ALX III Portable can be used on all popular arc welding processes and is protected against damage from the high frequency/high voltage start systems used on many TIG welding power sources.

## ALX III RS

The ALX III RS unit is available as single or dual channel system. The system can be used on all popular arc welding processes and is protected against damage from the high frequency/high voltage start systems used on many TIG welding power sources.

Rugged, hard-working and designed to withstand tough working environment and conditions, it is equally at home monitoring welding procedures, qualifying welders or in a laboratory situation where precision welding of fine components and exotic materials requires an accurate data logging system.

The unit, screen and keyboard are supplied in a single rugged case with the system accessories and probes supplied in a probe carry bag.





# ALX III WORKSTATION

Available as a single, two or four-channel unit, the ALX III RM Workstation is becoming the workhorse for the international oil and gas pipeline industry.

Supplied with voltage and current measurement on all channels as standard, the system allows for customisation to each channel with a variety of optional combinations. With all the facilities of the ALX III Portable in a rugged wall or rack mounting cabinet, the ALX III Workstation is a versatile and cost-effective system.

A rugged, hardworking unit designed to withstand the tough conditions of the working environment, it is equally at home monitoring welding procedures, qualifying welders, or in a laboratory situation where precision welding of fine components and exotic materials requires an accurate data logging system.

Specific pipeline software allows a complete welding procedure to be pre-programmed, from root to cap, so a single Workstation can monitor the whole weld or monitor pre-set weld passes in different stations. ALX III RM Workstations can be networked together so a single master station can be created, able to correlate all welding data into a single report.

The powerful pulse monitoring software option can be fitted to some or all channels in a single unit.

Monitoring and reporting complex welding pulses presents no problems, as the Workstation's speed and processing capacity to produce instant reports of each weld pass, no matter how complicated the waveform. Special software packages are available which enable the full integration of several ALX III RM Workstations to produce units of eight channels, and above.

## ***Wireless connectivity: networking***

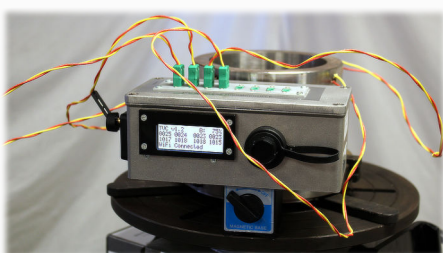
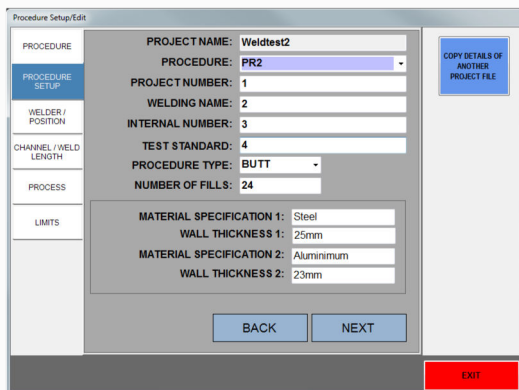
All ALX III Series data-loggers are supplied with full Wireless Connectivity for both Networking and connection to purpose designed transducers and sensors.

When networked via the TVC Edge Server, the ALX III systems can be used with the TVC Server/Cloud-based Data-Base software which will allow the remote logging and display of welding data along with full welder, WPS storage and Production Monitoring. For full details on the network connectivity software for remote viewing of Production Welding, Procedure Qualification, Welder Qualification and Documentation Storage, please contact TVC.

## ***Wireless connectivity: transducers and sensors***

Application specific, battery powered, wireless transducers can be connected to the ALX III units using the ALX III Digital Wireless Sensor network. Currently specialist wireless sensors and transducers are available for:

- Temperature, including multi-channel
- Wire feed speed
- Travel Speed
- Angle and position
- Gas flow and measurement
- Depth (Weld Height)



## GENERAL UNIT

Applications	MMA/MIG/TIG (AC/DC)/Subarc/Fluxcore
Techniques	Manual/Semi-Auto/Fully-Auto/Robotic
Operating Temp.	0 - 50°C

## ALX III PORTABLE

Dimensions	245mm (W) x 220mm (H) x 330mm (D)
Weight	14.5Kg
Battery Type	12V Sealed Lead Acid Rechargeable
Battery Charger	External 90 - 260V AC, Auto Selection, 3 hour Recharge
Printer	40 Character Internal Dot Matrix, User Selected Print Rate
Screen	12.1in Full Colour Touchscreen TFT
Keyboard/Mouse	IP65 Rated Full Size 65-Key with Trackball Mouse
Memory	240Gb SSD
Connectivity	3 x USB, 1 x Ethernet, 1 x 02.11a/b/g/n WiFi

## ALX III RS

Dimensions	555mm (W) x 230mm (H) x 350mm (D)
Weight	17Kg
Battery Type	12V Sealed Lead Acid Rechargeable
Battery Charger	External 90 - 260V AC, Auto Selection, 3 hour Recharge
Printer	40 Character Internal Dot Matrix, User Selected Print Rate
Screen	15.1in Full Colour LCD Touchscreen
Keyboard/Mouse	Full Size Industrial Keyboard with In-built Trackball Mouse
Memory	240Gb SSD
Connectivity	3 x USB, 1 x Ethernet, 1 x 802.11a/b/g/n WiFi

## ALX III RM WORKSTATION

Dimensions	455mm (W) x 380mm (H) x 450mm (D)
Weight	18Kg
Power	Mains Powered 90 - 260V AC Input with Internal 12V Sealed Lead Acid Rechargeable Battery Backup
Printer	Up to 4 x 40 Character Internal Dot Matrix
Screen	17in Full Colour TFT Touchscreen
Keyboard/Mouse	IP65 Rated Full Size 65-Key with Trackball Mouse
Memory	240G
Connectivity	3 x USB, 2 x Ethernet, 1 x 802.11a/b/g/n WiFi

## MONITORED PARAMETERS

Average Current	15 - 1999A +/- 2% FSD +/- 1 Digit
Average Voltage	0 - 99.9V +/- 1% of FSD +/- 1 Digit
Arc Energy	1 - 9999kJ +/- 2% FSD +/- 1 Digit
Arc Time	0.3 - 9999secs +/- 0.1% FSD +/- 1 Digit
Heat Input	1 - 9999J/mm +/- 2.5% FSD +/- 1 Digit
Wire Speed	0 - 30.0m/min +/- 2.5% +/- 1 Digit
Wire Consumed	0.1 - 9999m/min +/- 2.5% FSD +/- 1 Digit
Traverse Speed	0.1 - 999cm/min +/- 11.0% FSD +/- 1 Digit
Temperature	0 - 1000°C +/- 1% of RDG +/- 1 Digit
Gas Flow	1 - 120L/min +/- 5.0% FSD +/- 1 Digit
Oxygen Level	1 - 50,000ppm (0.0001 - 5%) +/- 0.0001% FSD +/- 1 Digit
Weld Depth (Laser)	0.1 - 75mm +/- 0.1 FSD +/- 1 Digit

## CALIBRATION & CERTIFICATION

Full calibration certification provided, traceable to The National Physical Laboratory (NPL), UK.

The Validation Centre (TVC) Limited reserves the right to alter or change product specifications without prior notice. Images are representative of full optional additions installed; delivered equipment and software may vary depending on options purchased.

### THE VALIDATION CENTRE (TVC) LIMITED

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