MiT

Measurement Instrument Technology

WTC MiT (Measurement Instrument Technology) collects critical weld data essential for an informed welding quality process. It is installed as a peripheral device that easily connects with any robot or weld control. The data collected is stored on WTC **View-*R*** that can be viewed as clear graphical information on WTC **View *NET***. This gives the weld engineer or plant maintenance personnel the ability to monitor every weld control in the plant from a single interface.

- AC and MFDC Weld Data Detection
- Data Collection:
  - Max / Average / Min Secondary Current
  - Weld Time in milliseconds
  - Calculated Resistance
    Average (RA), Peak (RP) and Drop (RD)
  - TCP Push Graph Archive
    Current, Resistance, Heat and Energy
  - Expulsion Detection
- Self Testing for Secondary Current Coil and Voltage Probes
- LED Display: Weld Count, IP Address, “COIL”
- Three Ethernet Ports - Supports DLR architecture
- SoftQ™ Tool Features
- Network Ready (**View-*R***) for Data Granularity

Upgrade Legacy Equipment for an Industry 4.0 Factory!

Your old but reliable factory equipment can be monitored to ensure that quality production processes remains constant and that you can prove it with independent concentrated data acquisition.

WELDING TECHNOLOGY CORP

WTC View-*R* Data Management

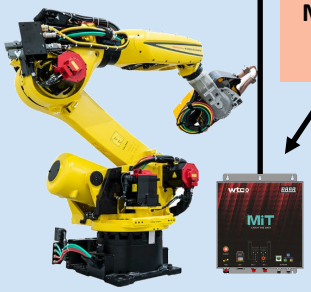
Ethernet Network

One View-*R* can be connected to a maximum of 48 MiTs.

Ethernet /IP Network

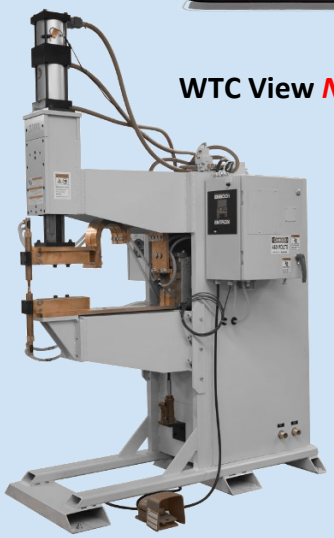
WTC View *Net* Interface Software

MiT - measures critical welding data from welding robots and machines.



Welding Robot

Legacy Resistance Welding Control



Press Welding Machine with RWC

The MiT has analog inputs for secondary current and secondary voltage signals. These signals are used to detect when a weld starts and ends. This generates weld summary and weld graph data in a similar format to WTC weld control data.

Like WTC weld controls, the MiT's data can be collected and stored in WTC's **View-*R*** device. This give you the ability to collect and monitor all resistance weld data from a single interface. The **View-*R***'s traceability features can be used with a MiT to provide enhanced data granularity for the SoftQ quality system.

The MiT uses an internal algorithm to determine when a weld starts and ends based on the signal coming from the Rigowski coil. The Rigowski coil is required. There are several global parameters defining how the MiT detects the weld (AC vs MFDC, AC frequency, current range and coil sensitivity) in Network and Parameter Configurations.

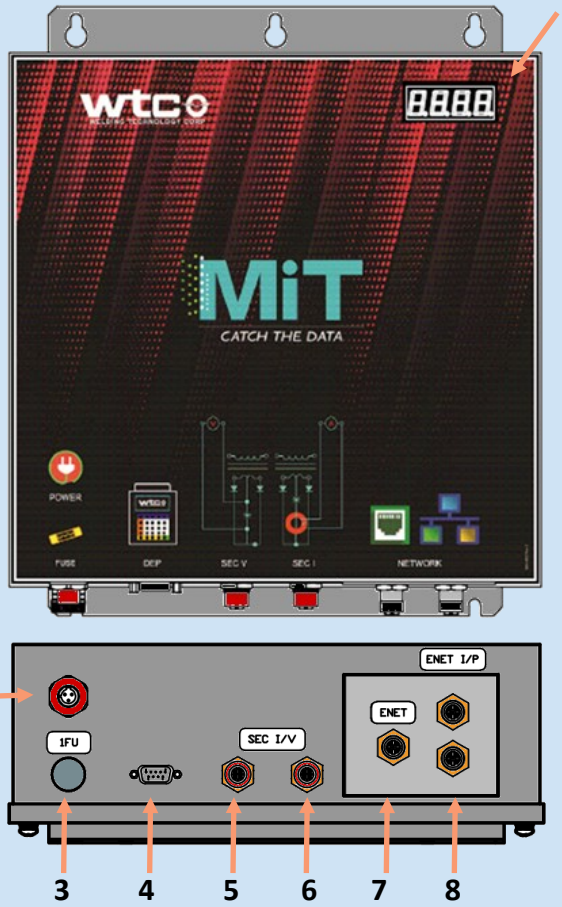
After a weld is complete, the MiT will output weld summary and graph data:

Summary: Weld time (msec), Secondary Current (Max/Avg/Min), Secondary Resistance (Avg/Peak/End/ Drop), Fault/Alert Code, Total Heat, Total Energy, Expulsion time, and more….

Graph Data: Secondary Current, Secondary Resistance, Heat and Cumulative Energy

1. LED DISPLAY - shows the:
   * Weld count since last powerup
   * "COIL" if the MiT detects no Rogowski coil
   * IP address. Each octet of the IP address will be displayed one at a time, with the decimal position showing which octet is being displayed: e.g. 089.089.200.250

2. POWER IN - 3pin M12: 120/240VAC or 24VDC
3. FUSE
4. COMM - 9pin D-sub serial connector for DEP 600
5. SEC V - Connection for secondary voltage wires
6. SEC I - Connection for Rogowski current coil
7. ENET - 4pin M12 barrel connector for local ENET
8. ENET/IP - (2x) 4pin M12 barrel connector for ENET/IP (both ports share same IP address for DLR network)



Parameters of the MiT can be setup in three ways:

1) **View *Net*** interface through the **View-*R***
2) Web browsing via MiT's IP address port 8080 onto MiT web pages
3) DEP 600 via the COMM port

DEP 600
via COMM port (Option)

Mappable Inputs for Advanced Process Integration:

The MiT has default inputs for an external device to inform the MiT of the current process for tagging specific information to the weld data being transferred to the **View-*R***.

* Weld ID (WC#): Binary bits to identify the total number of welds expected.
* Spot ID (S#): Binary bits to identify the Model ID of the part being welded.
* Stepper Reset (SR): Boolean bit to reset the MiT Linear Stepper Count
* Tip Dress (TD): Boolean bit to identify a Tip Dress Verification Weld.

WC1	WC2	WC4	WC8	WC16	WC32	WC64	W128
1	0	0	0	0	0	0	0
S1	S2	S3	S4	S5	S6	S7	S8
1	0	0	0	0	0	0	0
S9	S10	S11	S12	S13	S14	S15	S16
0	0	0	0	0	0	0	0
S17	S18	S19	S20	S21	S22	SR	TD
0	0	0	0	0	0	0	0

Enhance Your Productivity with Quality Using WTC Weld Controls

RELIABILITY

WELD SPILL AVOIDANCE

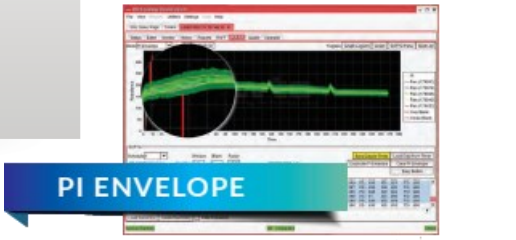
- **WELD TRANSFORMER PROTECTION** (Flux Control)
- Weld Transformer **SECONDARY DIODE SHORT DETECTION**
- **TOOLING INTEGRITY -** Monitoring of Secondary Degradation
- **PROCESS INTEGRITY -** Confirmation of Consistency
- **NUGGET INTEGRITY** - Verification of Nugget Size
- **TIP DRESS VERIFICATION** - Confirmation of Dressed Electrodes
- **ADAPTIVE WELDING** - Automatic Compensation for Minor Disturbances

WTC 6000
MFDC Inverter

TECHNOLOGY

QUALITY TOOLS

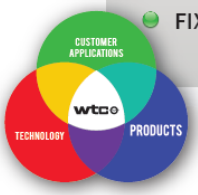
- ***SoftQ*** - Monitoring of Tooling, Process and Nugget Integrity
- ***RAFT***™ - Adaptive Quality Algorithm
- **FORCE MONITORING** - Graphical Data of Force Profile
- **FORCE CONTROL** - Set a Force Force Value and Send Signal to Execute to Robot
- **VOLT/SECONDS FIRING** - Switch from Constant Current to Volt/Secs Firing for Projection Welding
- **FAST RISE TIME** to Target Current - Achieve Target Current Faster
- **BALANCED FIRING** of Weld Transformer - Avoid Weld Transformer Saturation
- **GRAPHICAL REPRESENTATION** of Resistance, Current, Force and Energy (ms time base)
- **EXPULSION FREE REPORTING** - Minimize or Eliminate Expulsion



APPLICATIONS

WT6000 PROGRAMMABILITY

- **VARIOUS I/O CONFIGURATIONS -** Ethernet IP, ProfiNet, ProfiBus, Device Net, Discrete
- **MULTI-LANGUAGE:** English, French, German, Spanish, Portuguese, Chinese, Japanese, Korean, Turkish
- **ROBOTIC WELDING**
- **MANUAL WELDING**
- **FIXTURE WELDING**
- **SEAM WELDING**
- **PROJECTION WELDING**
- **GROUND FAULT MONITORING**
- **ANALOG I/O**
- **VARIOUS INVERTER SIZES**
- **PROGRAMMABLE OPERATING FREQUENCY** 400-2000hertz



ML-1024 / V1.0

Welding Technology Corp
24775 Crestview Court, Farmington Hills, MI USA 48335
Tel: +1 248.477.3900 FAX: +1 248.477.8897
Email: welding@weldtechcorp.com Web: www.weldtechcorp.com

WELDING TECHNOLOGY CORP