

## DATA SHEET

# Data Acquisition and Control Unit for Triaxial Tests - AUTOTRIAX EmS



## General description

These are the brains of the AUTOTRIAX EmS system, transmitting data and information between the software and all the active components such as the pressure controllers and Trittech triaxial load frame. The units are produced in four different versions (see below) to offer maximum flexibility. They can be stacked vertically, making them very space-efficient, and power connectors of multiple units can be daisy-chained together, allowing them all to be run from a single mains socket. Transducer calibrations are saved directly in the firmware of the units.

### Master unit

A *Master unit* is always required, whatever combination of systems you want to put together. It has four active control channels for connecting the transducers that are needed for feedback to the software (for controlling vertical load or displacement and cell and back pressure) and eight passive channels for connecting a pore pressure transducer plus any other additional transducers, including local measuring on-sample. The *Trittech compression frame*, *Hydromatic pressure/volume controllers* and *solenoid valves* (for opening and closing the pressure lines) also connect to the unit.

**One Master unit is all that is needed for a single standard effective stress system.**

Connections:

- 2 Hydromatic pressure/volume controllers
- 1 Trittech compression frame
- 12 transducers
- 2 solenoid valves

### Pressure extension unit

Used in addition to a *Master unit*, this expansion unit provides control for one extra pressure system, with connections for a pressure transducer, *Solenoid valve* and *Hydromatic pressure/volume controller*, plus three spare passive transducer channels. It could be used, for example, in a system running permeability tests where three controlled pressures are required.

Connections:

- 1 Hydromatic pressure/volume controller
- 4 transducers
- 1 solenoid valve

### Triple pressure extension unit

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Used in addition to a *Master unit*, this expansion unit provides control for three extra pressure systems, with connections for three pressure transducers, *Solenoid valves* and *Hydromatic pressure/volume controllers*, plus nine spare passive transducer channels.

Connections:

- 3 Hydromatic pressure/volume controllers
- 12 transducers
- 3 solenoid valves

### Pressure extension unit for unsaturated test module only

Used in addition to a *Master unit*, this expansion unit provides control for one air pressure system, with connections for a pressure transducer, *Solenoid valve* and *Servoflow 2 Air pressure controller*. There is also a connection for an *Automatic Volume Change device* to measure the change in cell volume, plus two spare passive transducer channels.

Connections:

- 1 Servoflow
- 4 transducers
- 1 solenoid valve
- 1 Automatic Volume Change device

## Main features

- It manages pressure/volume controller, load frames, cell and back pressures, solenoid valves and transducers
- **Transmits data** and information between the software and all the active components
- **Calibration data** of connected transducers **are saved** in the **firmware** of the units
- Four **different versions** are available to offer maximum flexibility
- Can be **stacked vertically** reducing the footprint on the work bench
- The **modular design** concept allows easy extension of the system

## Specifications

Analogue/digital converter: 16-bit

Additional transducer gain ranges: +/- 20 mV and +/-10 V

Ethernet connection to PC: 100 Mb

Dimensions: WFD1A2 or WFD0A3: W330 x D240 x H144 mm, WFD0A1 or WFD0A1/UNS W330 x D240 x H70 mm

Weight: 5kg

Power supply: 110-240 V 50/60 Hz, 1 ph

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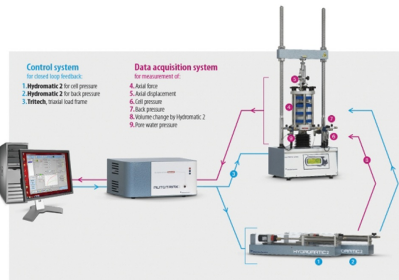


Data acquisition and control unit - TRIPLE PRESSURE EXPANSION  
UNIT - 29-WFD0A3



AUTOTRIAX 2 data acquisition and control units stacked vertically

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AUTOTRIAX 2 flow chart for feedback controls and measurements



Data acquisition and control MASTER UNIT - rear panel connectors

## Products

### 29-WFD0A1

AUTOTRIAX 2 Data acquisition and control unit: Pressure extension unit. 110-220V,50-60 Hz, 1ph.

### 29-WFD0A1/UNS

AUTOTRIAX 2 Data acquisition and control unit: Airpressure extension unit for unsaturated test. 110-220V,50-60 Hz, 1ph.

### 29-WFD0A3

AUTOTRIAX-2 Data acquisition and control unit: Triple pressure extension unit. 110-220V,50-60 Hz, 1ph.

### 29-WFD1A2

AUTOTRIAX 2 Data acquisition and control unit: Master unit. 110-220V,50-60 Hz, 1ph.

## Accessories and consumables

### 29-WF4645/COMP

High specification desktop PC with LCD monitor. Operating system MS Windows preinstalled and 8 port LAN HUB converter.

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