R2 ATEX MODA: CELL-ROOM SAFETY AT ITS BEST

OVERVIEW

FEATURES	BENEFITS
ATEX compliant (IEC 60079-7:2015)	Suitable for installation in zones rated for potentially explosive atmospheres
High sampling rate	Very accurate voltage measurement
Noise filtering adapted to rectifier frequency	Protection against electrolyzer component failures
Temperature compensated measurements	Increased plant safety
32 input analog to digital conversion	
SIL hardware and firmware (IEC 61508)	

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CELL ROOM SAFETY AT ITS BEST

Designed for the cell room environment, the **ATEX MODA** is R2's intelligent data acquisition sensor that accurately measures cell voltage. The **MODA** incorporates sampling algorithms that synchronize with the fundamental rectifier frequency, removing any unwanted noise. This synchronization provides faster data acquisition when compared to standard filtering and averaging techniques, increasing overall precision.

The **MODA** is designed to be installed directly on the electrolyzer, minimizing wire length and reducing noise pickup. Thermally compensated, the **MODA** offers an unparalleled precision, within ±1.5 mV over the practical operating temperature range found in cell rooms.

ATEX COMPLIANCE

The "IEC 60079-7:2015 Explosive Atmospheres, Equipment protection by increased safety "e" was used to determine compliance to the EU ATEX directive. The equipment is adequate for use in the following conditions:

- Zone 2: Flammable atmosphere unlikely to be present except for short periods of time as a result of process fault condition
- Temperature Class T6: Surface temperature not to exceed 85°C
- Explosion Group IIC: Hydrogen hazard

ENHANCED PROTECTION AGAINST ELECTROLYZER COMPONENT FAILURES

The **ATEX MODA** ensures the proper detection and protection against all known causes of electrolyzer component failure. The speed, accuracy and stability of the **ATEX MODA** puts it in a class of its own. With its SIL2 rating and built-in diagnostic capabilities, the highest safety and reliability is assured during electrolyzer operation.

TECHNICAL SPECIFICATIONS

General	
Measurement Category:	600V CAT III / 1000V CAT II Measurement Equipment
Supply Input Range:	22 to 70V DC
Current Consumption:	300mA @ 24V DC
Electrical Isolation:	2500V between power supply & measurement input channels.
Signal Input:	32 channels with ± 5V DC range
Signal Output:	Digital Optical Communication Bus (R2 Protocol)
Analog to Digital Converter:	16 bit Sigma Delta
Accuracy:	± 1.5mV (over
Scan Rate:	250ms to scan all 32 inputs
Sampling Rate:	800kHz (1.25µs)

Mechanical	
Degree of Protection:	IPX7
Weight:	2.5 Kg
Dimensions W x H x D (cm)	38 x 28 x 13

Standards
IEC 60079-7:2015, Explosive Atmospheres, Equipment protection by increased safety "e".
IEC 61508, Safety Integrity Level (Designed to SIL2 requirements)
IEC 61010-1:2010, Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use
IEC 61000-6-2, EMC Interference Immunity for Industrial Environments
IEC 61000-6-4, Emission Standard for Industrial Environments
IEC 60068-2, Environmental Testing
IEC 60529:1989+A1:1999 / EN 60529:1991+A1:2000, Degree of protection provided by enclosures

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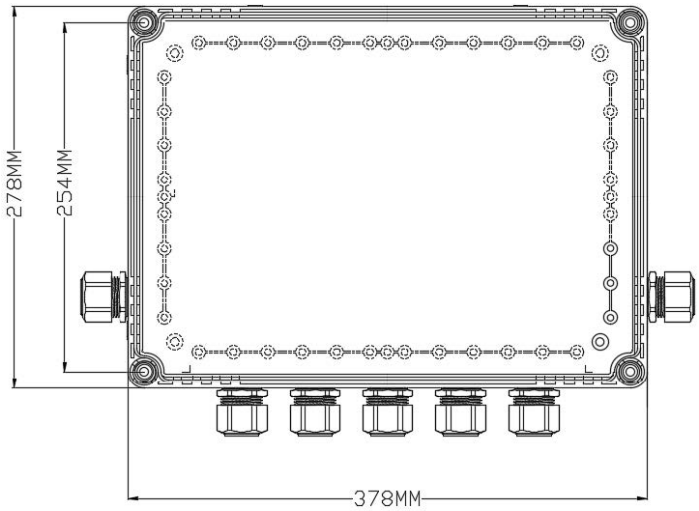
TECHNICAL SPECIFICATIONS (Continued)

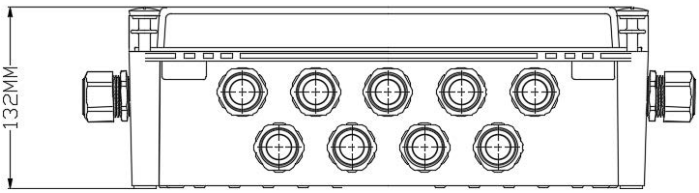
Environmental	
Operating Temperature:	-20 to 60°C
Storage Temperature:	-40 to 60°C
Ambient Operating Pressure:	80 kPa to 110 kPa
Atmosphere Type:	Air with normal oxygen content (21% v/v)
Humidity:	5 to 95% non-condensing
Altitude:	2000m max.
Vibrations:	Displacement: 0.75mm Acceleration: 2 m/s^2 Frequency: 1-150 Hz
Shocks:	Acceleration: 50 m/s^2 Duration: 6 ms

Approvals
cTÜVus
CB Report
CE

Markings
Ex II 3 G Ex ec IIC T6 Gc

DIMENSIONAL DRAWING





ACCESSORIES & SPARE PARTS

Part Number	Description
EH510	MODA Sensor only
EH500-2-EX	ATEX Integrated TFP with backplate (Chlorine) no enclosure
EH500-1 EX	ATEX TFP & Enclosure (No Sensor)
EH100	NSGAFOU Wire (per meters)
EH500-7-1	ATEX MODA Hardware Installation Kit
EH125	Fiber Optic Cable (1 pair, Multimode 62.5/125) - No connectors
EH137	Spare Fuse Kit
EH180	MODA Power Supply (for 5 units)
EH181	MODA Power Supply (for 6 units)
EH183	MODA Power Supply (for 8 units)

ORDERING INFORMATION

Part Number	Description
EH500-EX	ATEX MODA Assembly Complete with TFP & Enclosure

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