

New: Corrosion Detector Portable CDP EXProof

The mobile glass monitoring probe
now with EX certificate

Application range

The **Corrosion Detector Portable CDP** enables you to simply and quickly inspect glass lined vessels and their internal parts for damages and the resulting metal corrosion. An internal device memory and a USB interface allow for convenient saving and management of the individual measuring results. The device may also be used for reactors and internal parts with other insulating coatings (e.g. plastic material or rubber).

Your benefit

- Detection of problem areas in time through regular monitoring
- Avoiding of large-scale and expensive glass repair
- Avoiding of break-throughs
- Avoiding contamination of the product with metal ions
- Documenting regular tests by saving the measuring results electronically
- Clear alarm message only in the event of damage to the coating
- **The measuring device may be used in potentially explosive atmospheres**



Mode of functioning of the Corrosion Detector Portable

If metal gets in contact with a conductive liquid (electrolyte), the result is a voltaic cell. That means that a voltage is generated at the contact surface between the metal and the electrolyte. If the voltage exceeds a certain value, metal ions are dissolved, i.e. the metal is corroded. A specific decomposition voltage is generated for each metal, which is the basis for the measurement.

The measuring device with the Corrosion Detector Portable as the central element works with AC voltage, thus avoiding electrochemical reactions at the measuring electrodes.

The measuring loop consists of 4 electrodes:

- two measuring electrodes,
- one reference electrode, and
- the reactor wall as the 4th electrode

Properties of the measuring device

The device works according to the principle of impedance analysis. That means: the Corrosion Detector Portable will output an alarm only if metal corrosion has actually occurred on the reactor or the internal parts. This method offers fundamental advantages over conventional glass monitoring equipment which works according to the principle of conductivity analysis. Conventional systems are not capable of distinguishing between a real alarm and a false alarm when an alarm is signaled. A real alarm is present if the coat is strongly damaged, resulting in a conductive link between the product and the metal and thus the equipotential bonding system. Such a damage will

always be accompanied by corrosion in the damaged spot.

A false alarm is defined as a conductive link between the product and the equipotential bonding system that is not caused by glass damage. Such links to other plant sections not resistant to corrosion may be the result of production-specific operating conditions, e.g., condensate bridges built up via the reactor's nozzles, or when filling or draining the reactor.

Conductive plant components made of tantalum, titanium, Hastelloy, graphite, conductive gaskets or repair plugs made of noble metals do not trigger a corrosion alarm.



The device has an EC type examination according to Annex III of the explosion protection directive 94/9/EC and may thus be used in potentially explosive environments zone 1.



Figure similar, technical modifications excepted.

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New: Corrosion Detector

Portable CDP EXProof

High safety level with a lot of comfort!

Technical data of Corrosion Detector Portable

Technical data	EXProof (part no. 595 900-)	BASIC (part no. 596 373-)
Power supply:	4,5 VDC	
Current input:	max. 60 mA	
Minimum conductivity:	0,8 mS/cm	
Measuring voltage:	3,3 V _{eff}	
Measuring current:	max. 1,3 mA	
Measuring frequency:	10 Hz	
Working temperature range:	-10°C bis +50°C	
Storage temperature:	-25°C bis +70°C (without batteries)	
Enclosure:	Plastic material / black (antistatic)	
LxWxH:	180 x 85/62 x 30/25,5 mm	
Weight:	390 g (without batteries)	271 g (without batteries)
Degree of protection:	IP 54	
Sealed keypad:	21 keys (shielded)	
Graphic display:	128x64 and acryl glass cover	
Languages:	German, English	
Universal interface:	✓	-
Data memory:		
Owner:	1 entry	
User:	50 entries	
Test locations:	500 entries	
Measurements:	10.000 entries (circulating)	
Other:		
• Connectors for the immersion probe and vise-grip wrench on face of enclosure	✓	
• Electromagnetic compatibility (to IEC 801)	✓	
• CE mark	✓	-
• Explosion protection certificate ATEX 94/9/EC	✓ 	-
Scope of delivery:		
Hard-sided case with molded insert taking up the measuring device	✓	-
Immersion probe with reference electrode	✓	
Grounding clamp with contact monitoring	✓	
Reference electrode (spare)	✓	-
File for cleaning contacts	✓	
Documentation program/software on USB stick and connection cord	✓	-
Batteries	✓	-
Operating instructions	OI 338	OI 339



Technical modifications excepted