MONI LOG®

Offshore alarm system
ShockDisplay curve *plus* MADE IN GERMANY

RUGGED SHOCK MONITORING FOR PLATFORMS

- Registers mechanical influences during the installation and operation of offshore facilities
- Highly sensitive and long term stable acceleration sensors
- Measures and analyses directions, strength, time and signal progressions of shock and vibration loads
- Alarm and operating signalling contacts for the integration of the system in the control technology
- Combi-sensor for temperature, air humidity and pressure
- Robust and reliable even under extreme climatic conditions
- Easy operation, display, alarm function, long operating time
- Tamper-proof, multi-level password protection
- Internal batteries for automatic function maintenance in the event of power failure
- Powerful analysis software

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Cold weather, storms, high waves, incoming and outgoing vessels are a great burden on the platforms and the electrical equipment of offshore wind parks. The transformer substation as the centrepiece of the wind park determines the efficiency and reliability of the entire system. To prevent damage, shocks, vibrations, humidity and temperature must be monitored continuously. The MONI LOG® Offshore Alarm System is specifically designed for these tasks. For this purpose, the extremely robust data logger ShockDisplay curve plus is used. Its sensitive sensors monitor humidity and temperature and register real-time mechanical effects with time, duration, direction and strength with minimum and maximum values. The minimum shock duration is configurable and the registration and alarm thresholds can be set separately for each of the 3 spatial axes. The number of shocks and other extraordinary loads can be read directly on the data logger. In the case of limit value overrun, the measured values are transmitted to the control system of the wind park via alarm contacts and operating signalling contacts or life contacts (protection class III). The system is permanently installed and network-connected. Internal batteries guarantee the functions in the event of a power failure. All stored values are retained for many years. The offshore alarm system enables a safe operation sequence through a permanent monitoring and well-processed measurement data, both in the installation and operating phases of transformer substations and in the case of a fault or in the event of a limit value overrun, e.g. by switching off individual components. The electronics housed in stainless steel housings are installed at the junctions and shock-sensitive electrical equipment of the transformer substation platform. The measurement data show how a shock can spread from a specific location on the offshore platform and can influence the equipment of the system. With only 4 keys, the data logger is very easy to use. A USB interface allows fine configuration and data transfer to a PC or laptop. The measurement data are exactly reproducible, since every activity relevant for the measured value acquisition is registered. Tampering of the data logger is excluded with a password protection, an internal memory support, checksums and a log of all transactions. The convenient SYCUR software for preparing and analysing the data is included in the supply.

Technical data

Shock measured value recording:	100 events with the largest amplitude, 3-dimensional (X/Y/Z), storage also as a signal response with 1024 ms duration at 2 kHz sampling rate, measuring range 5, 10 20 or 50 G, as well as special design, frequency range 1 ... 512 Hz (3dB, digital frequency filter, 4th Order Bessel), registration threshold adjustable for minimum shock duration and for every shock direction
Inclination measured value recording:	-1g to +1g corresponds to -90° to +90° angle of inclination, in addition 64 acceleration curves in the range -6g to +6g in 3 space axes, dynamic range 0 - 1 Hz, measurement interval adjustable in minutes, recording duration up to 16,000 measurement intervals, self-calibrating with respect to earth axis
Measured value recording Temperature: Humidity: Pressure:	Factory-calibrated, multi-purpose sensor -40 to +85° C, resolution 0.1 K, precision ±1 K, 0.2 - 100 % rH, resolution 0.1 % rH, precision ±3% rH (20 - 80 % rH), ±5% rH (0 - 100% rH), 260 - 1260 mbar, resolution 1 mbar, precision ±1 mbar (T = 25°C), ±2 mbar (0°C to +80°C)
Display and control elements:	illuminated display and four function keys, multilingual (DE, EN, FR), password-protected menu
Interfaces:	USB 1.1 and RS-232 for connection with a PC for configuration and assessment
Housing, weight and dimensions:	lockable stainless steel casing, Protection Level IP 65, 11 kg, 300 x 300 x 190 mm
Operating / Storage conditions:	-20 ... +40°C, max. 95 % relative humidity, non-thawing, special solutions for higher demands on request
Interface conditions:	Voltage supply: 90 - 250 V AC or 120 - 250 V DC, 100 mA, 47...63 Hz, fuse T 1 A L 250 V, connection to N and L polarity-independent Add. consumer: maximum permissible continuous current 8 A (loop through) Fusing: 6 A l.v.h.b.c. supply line fuse-protection required Relay contacts: Coil contact insulation voltage 2.5 kVrms. Switching capacities max. 300 V DC, 250 V AC 6 A max. AC current rating. Connection cable: 0,25 mm² to 4 mm²
Power supply internal:	2 cells of construction design D (R 20) of type alkaline or lithium, operating time up to 6000 h
Fixed parameters:	Measuring ranges 5, 10, 20, 50 G (special design on request), filter characteristic of the digital frequency filter to 512 Hz
Programmable measuring parameters:	Registration threshold from 5% of the measuring-range end value, min. period of event from 1 ms, alarm threshold for shock amplitude, registration threshold for inclination measurement, password, switch on/off protection, time
Software:	For operating systems Windows Vista/7/8/10, signal analysis graphic and tabular with export functions, frequency analysis according to DIN EN 13011, parameterization of the devices, indication of the status data and active time periods of the device, help function, multilingual DE, EN, FR