TRANSPORT RISK

STORAGE RISK

OPERATIONAL RISK

MONILOG®

ShockDisplay curve 2 plus

EXACT EVIDENCE OF THE TRANSPORT QUALITY

SHOCK   INCLINATION   VIBRATION   TEMPERATURE

HUMIDITY   PRESSURE   GPS TRACKING   LIGHT INCIDENCE

- Extremely robust shock recorder
- Registers all mechanical shock events and stores the 500 largest with signal progress
- Measures direction, strength, time, duration, minimum and maximum of the effect
- Continuous recording of temperature, air humidity, air pressure and light
- Conformity with all relevant norms and standards for measurement of transport shocks
- Communication via USB and NFC
- Stores GPS coordinates for accurate positioning
- Status report can be read out via NFC with smartphone and free app
- Integrated inclination sensor for the detection of tipping and swinging operations
- Intuitive operation, extremely long and independent operating time
- Easy to configure and evaluate with license-free software
- Tamper-proof with multi-level password protection

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ShockDisplay curve 2 plus

MONILOG®
RISK LOGGER

EXACT EVIDENCE OF THE TRANSPORT QUALITY

The *MONILOG® ShockDisplay curve 2 plus* is an easy-to-use and versatile data logger. ✚ It monitors sensitive goods on long transport routes and in critical environments, such as transformers, generators, switchgear or fragile optics, medical or automotive components. ✚ The sensor technology of the data logger measures impact events, temperature, air humidity, air pressure and inclination – important for transport under protective gas or for temperature-sensitive and moisture-sensitive transport goods. ✚ The measurement data can be read out and evaluated conveniently with the smartphone via NFC or via the USB port ✚ The free app *MONILOG® Connect* sends the read status report as a PDF file by e-mail. ✚ Via an integrated GPS receiver, the respective location of the transport goods can be located both at critical events as well as at time intervals. ✚ Recorded position records can be thus imported, clearly visualized and evaluated e.g. in Google Earth© or other programs. ✚ Commercially available alkaline batteries ensure a mains-independent power supply. ✚ The minimum energy consumption and a long, maintenance-free operating time make the *MONILOG® ShockDisplay curve 2 plus* an autonomous measuring device, which also works extremely reliably under adverse environmental conditions. ✚ The license-free software *MONILOG® SYCUR* allows easy and intuitive operation of the data logger. ✚ A robust housing with an IP67 certification protects the device from dust and splash water. ✚

With the device, the causes of transport damage can be precisley determined over very long periods of time. ✚ The *MONILOG® ShockDisplay curve 2 plus* meets all standards and guidelines for shock measurment and transport monitoring.

MONILOG® ShockDisplay curve 2 plus

VIEW
360°

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Technical data of MONILOG® ShockDisplay curve 2 plus

Housing:		Aluminium, hard-anodized • degree of protection IP67 weight: 1.07 kg including alkaline batteries • 42 g each magnetic base size: 198 x 100 x 44 mm (D x W x H) • Ø 32 x 7 mm² (small magnetic base) surface mounting (3-point screwed connection recommended), magnetic foot mountings optional
Operation and storage conditions:		-20°C to +60°C with alkaline batteries -40°C to +85°C with lithium batteries
Data memory, time:		Data receipt for a minimum of 10 years, independent of battery status 32 MB flash parameter and data storage date/time as world time UTC, supported by the internal battery, exchange at the manufacturer after 6 years needed
Power supply:	Internal:	2 batteries type D or R20 replaceable Alkaline batteries (2 x 1.5 V, 16,000 mAh) • lithium batteries (2 x 3.6 V, 17,000 mAh) • Operating time up to 3 years, typically 1 year (for alkaline batteries, all options active with relevant settings)
	External:	Mini-USB AB 5 V • external voltage supply (6 - 24 V, < 15 W) via IP67 connector (to RS232 / Power)
Interfaces:		**USB** 2.0 Client (Mini-USB AB) • RS232 via IP67 five-pole connector (for optional use) • **NFC**: Status report can be read out with smartphone and free app *"MONILOG® Connect"* • Saving and sending the PDF report by e-mail **Analog input**: connection for analog pressure sensor
GPS position sensing:		32 satellite channels (GPS, SBAS, BeiDou, QZSS) • SMA socket for connection of an external active antenna 50 Ω 3 to 30 mA, 3 V (rod or cable antenna) • 25,000 data records, tolerance 100 m
Operating and indication elements:		illuminated LCD display, indication of: date, time, room vector, integrated shock strength and duration, minimum, maximum, number of shock and inclination events multilingual and password-protected menu navigation
Conformity:		Device certification according to CE, UKCA, RoHS, WEEE • shock evaluation according to DIN EN 15433-6 • frequency analysis according to DIN EN 13011 • Use according to IEEE C 57.150-2012
Sensors and data measurement:	Acceleration and shock:	configurable digital signal filtering • when the registration threshold is exceeded, shock curves are recorded • the 500 highest shock curves are stored

	14 g (standard)	30 g (optional)	60 g (optional)
Measuring range:	±14 g (3 axes)	±30 g (3 axes)	±60 g (3 axes)
Tolerance absolut:	± 0.32 g	± 0.6 g	± 1.2 g
Sampling rate:	2,000 Hz	1,600 Hz	1,600 Hz
Curve duration:	1,024 ms	1,280 ms	1,280 ms
Recording threshold:	0.3 g	0.3 g	0.3 g
Start-up time:	2 ms	2 ms	2 ms
Lowpass filter cut-off frequency:	1 Hz	1 Hz	1 Hz
Adjustable highpass filter cut-off frequency:	16 / 25 / 40 / 100 / 250 / 500 / 1000 Hz	13 / 20 / 32 / 80 / 200 / 400 / 800 Hz	13 / 20 / 32 / 80 / 200 / 400 / 800 Hz

	Inclination:	Inclination calculation from static acceleration • when the registration threshold is exceeded, up to 640 inclination curves (12 Hz, 8 s, tolerance ±3°) are recorded according to the event • additionally continous inclination recording adjustable in interval between 1 minute and 24 hours • 200,000 data records
	Temperature:	-40°C to +85°C • tolerance ±0.5 K • 200,000 data records
	Relative humidity:	0% – 100% RH • tolerance ±2% RH (on 20 ... 80% RH) • 200,000 data records
	Light:	0 lx - 65,000 lx • tolerance ±15 % • 200,000 data records
	Air pressure:	260 – 1,260 mbar • ±2 mbar tolerance (optional: 10 – 2,000 mbar, ±4 mbar tolerance) • 200,000 data records • when connecting an external pressure sensor, the external pressure is stored
	Evaluation / device configuration:	on the device display or other evaluation options via the software included in the scope of delivery for WIN 7 / 8 / 10
	Calibration:	Factory calibration valid for 2 years, unless otherwise agreed
Programmable parameters:		Shock registration thresholds x, y, z • minimum shock duration, shock strength • limit for inclination, temperature, humidity, pressure • alarm indication on the display • intervals for continuous measurement of GPS, inclination, temperature, humidity and pressure • password for reading, configuring, On/Off switching • Start/Stop time for the data recording

WHAT ARE YOU *LOGGING* FOR?

MONILOG® Risk Loggers measure, signal and document the external influences that threaten the value and functional capability of your damageable items.

We offer the ideal product design, software and sensor system for each and every customer requirement:

IMPACTS

INCLINATION

VIBRATION

TEMPERATURE

MOISTURE

PRESSURE

GPS TRACKING

LIGHT INCIDENCE

TRANSPORT RISK

Where are your freight items located? Which levels of stress are and have the items been exposed to?

STORAGE RISK

Are the ambient conditions correct for your stored items? Were they and will they remain stable?

OPERATIONAL RISK

Do mechanical factors put operation of your offshore plant at risk? When do you, as the operator, need to intervene?

Which device maps your particular risk profile? Our product finder provides the answer and sets the course for specific modifications or for new developments. Product finder online: www.monilog.com/productfinder