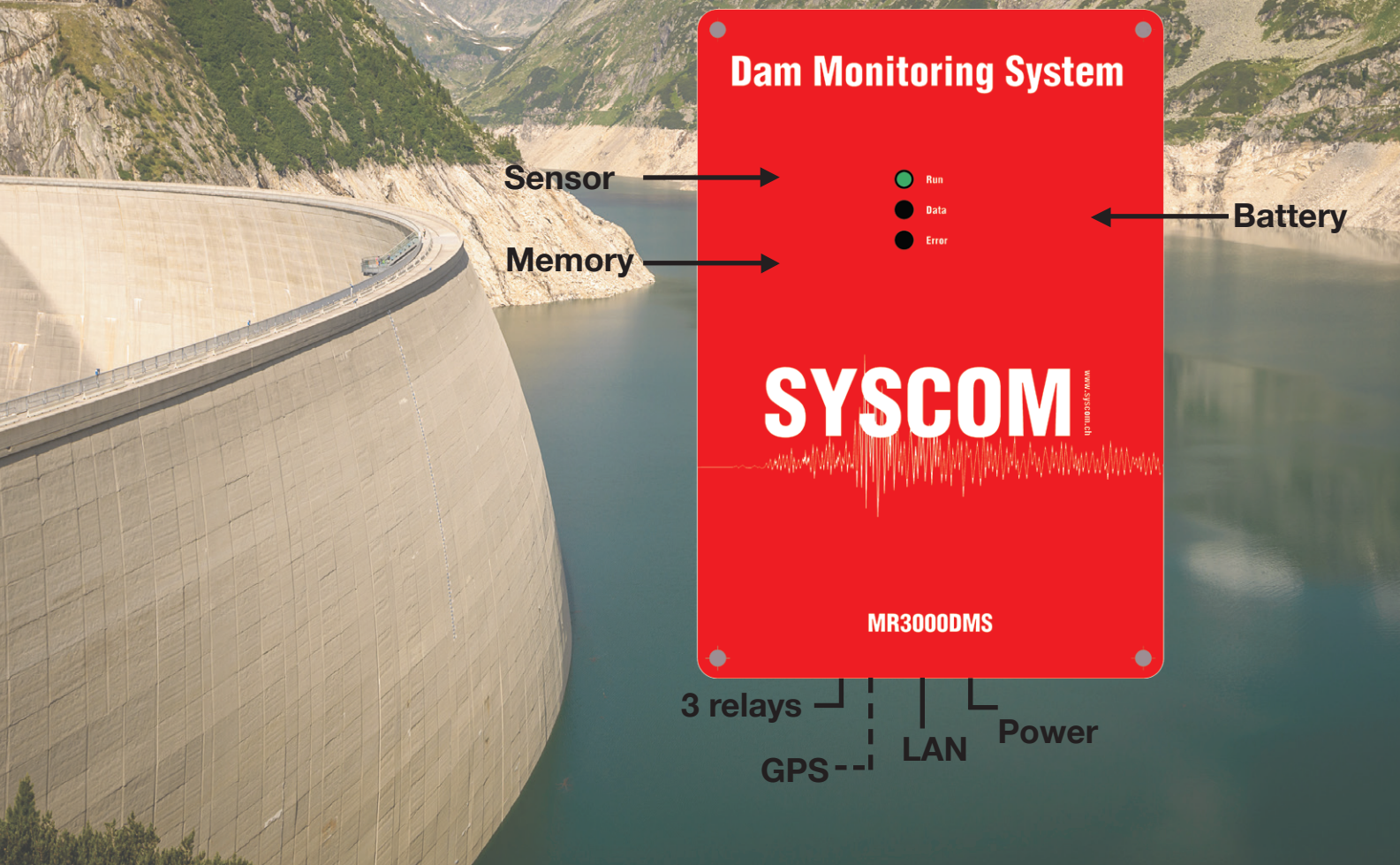


SAFETY IS OUR PRIORITY

MR3000DMS / Dam Monitoring System



MARKET SEGMENTS

Primarily strong motion

All type of dams

Secondarily

Dynamic behavior assessment of large complex structures under seismic constraint

DATASHEET : MR3000DMS

Dedicated seismic monitoring network solution for dam's structural response and monitoring.

MR3000DMS built-in with the following features:

- Internal battery ensuring data acquisition safety
- Fiber optics communications for long distances and highly reliable data stream
- Easy to set relays output for dam's control monitoring system integration
- Up to 32 MR3000DMS in an Ethernet master-slave configuration network with common triggering and alarming.
- Fully integrated compact rugged red box for optimal protection and lowest maintenance cost during system's lifecycle.

MR3000DMS / Dam Monitoring System

The MR3000DMS seismic monitoring system is the most compact, integrated and reliable system for dams, ensuring highest level of safety and sustainability. Automatic earthquake detection and structural monitoring will ensure dam's full integrity over its lifetime.

The solution provided by SYSCOM MR3000DMS is extremely versatile and easy to install, thanks to its state of the art Ethernet master-slave connectivity and the command & control access through embedded web server.

MR3000DMS' 3 relays output (alarm 1, alarm 2, device error) can be directly connected to the dam's control room for a centralized overview and an automatic logic response in case of any seismic events that might occurs.

Technical specifications

Data acquisition

Resolution	24 bits
Sampling-rate	50, 100, 200, 400, 500, 800, 1000, 2000sps
Number of channels	3 (XYZ), simultaneous sampling on all channels
Monitoring axis	3D (XYZ)
Dynamic range	Typ. 130dB@250sps
Trigger Principle	Level trigger or STA/LTA or combined or automatic adjustment of trigger level
Trigger voting logic	Predefined AND or OR combinations, individual channel votes
STA / LTA	STA: 0.1 to 25s, LTA: 1 to 250s, ratio 0.1:25

Microprocessor

Recording principle	Event recording (time history), continuous time recording or manually triggered.
Pre-event recording	1-30s (in 1s steps)
Post-event recording	1-100s (in 1s steps)
Memory	Removable SD flash card 4GB
System clock	1ppm, could be disciplined by GPS or NTP
Web interface	Easy to use command & control through embedded web server
System status	3 LEDs Run, Recording, Warning/Error. Internal LCD with status info and important settings
Screen	LCD (inside housing)

Power

Power supply	100-240VAC 50-60Hz, OVP protected
Internal battery	12VDC, 12Ah
Consumption	Typ 4.5W (3.2W on battery)
Battery life	Typ. 40 hours

I/O (glands/ internal wires)

Relays (3)	M16 cable gland 7-11mm / Terminals
FO	M20 cable gland 6-13mm / ST connectors
Power	M16 cable gland 4-11mm / Terminals
GPS time sync	Optional connector
Connections	LAN wired or Fiber Optics (ST connectors, multimode, 1300nm wavelength)

Acceleration sensor

Sensor principle	MEMS acceleration sensor with custom low-power ASIC designed as a DC coupled analog servo accelerometer.
Dynamic range	Typ. 100dB (0 to 50 Hz)
Noise	Typ. 7 μ g/ $\sqrt{\text{Hz}}$
Frequency range	0 to 600Hz \pm 1%
Error	\pm 1%
Measuring range	\pm 2, \pm 4g (\pm 4g recommended for dams)
Axis sensitivity	0.625 V/g
Thermal sensitivity	Typ. 100ppm/ $^{\circ}\text{C}$
Orientation	Horizontal or vertical mounting

Housing

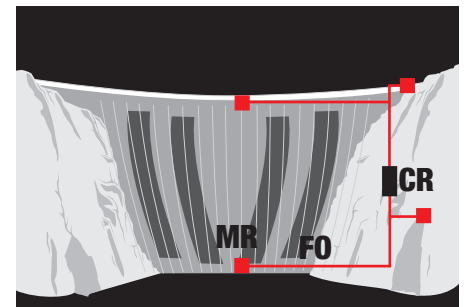
Dimensions	330 x 230 x 110 mm
Weight	10 Kg
Internal protection	IP66

Regulations

Operating temp.	-25 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$
EMC	IEC 61326-1
Electrical safety	IEC 61010
Conformity	CE



Typical MR3000DMS configuration



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