



Macminder Ride Performance Monitor

The Macminder system is an unattended method of monitoring vehicle ride performance and track conditions on-board in-service trains eliminating the need for track possession.

Designed to operate on a stand alone basis, several Macminders can be placed in different vehicles recording ride comfort simultaneously, enabling comparisons of multiple journeys or vehicles.

MMD-	X₁	X₂	S	X₃	X₁	2 = 2 Channel (Vert & Lat) 3 = 3 Channel (Vert, Lat & Long)
	2	F		I	X₂	F = Freight, RMS P = Passenger, Time & Ride L = Tacho, Time & Ride G = GPS, Tacho, Time & Ride
	3	P		R	X₃	I = ISO Ride Comfort Standard R = Sperling Ride Index Standard
		L				
		G				

Part No Designation:



Features

- Vertical, Lateral and Longitudinal Measurements (2 ch or 3 ch versions)
- 2 or 10 sampling Options
- Tacho, Speed, Distance or GPS
- Exceedence Logging
- Complies with ISO2631 Draft 5
- Self Contained
- Battery Powered
- Small and Rugged
- Easy to Use
- Connects to VisiRAIL

For more information, please contact the Railway Sales Department at Donfabs & Consillia

Email: enquiries@consillia.com

Stand Alone

The Macminder Ride Performance system comprises of small, rugged, self contained, stand alone data logging units. The units are unobtrusive and can be placed under a seat on an operational vehicle, eliminating the need for costly track possession.

Measurement

Measurements include Vertical, Longitudinal, Lateral, RMS and ISO, speed, exceedences and time.

Vehicle Testing

For multiple vehicle testing several Macminders can be deployed around the vehicle consist. The units are synchronised through time enabling data to be overlaid for analysis and reporting.

Autonomy

Each Macminder has its own inbuilt battery which is capable of 24 hours recording time.

Speed Monitoring

Using the "L" model Macminder a tacho pulse can be recorded which is then processed into speed and distance providing accurate journey recording. Alternatively, the "G" model can be used to take a GPS signal and generate speed and distance

Software

All data is transferred to VisiRAIL, our own software analysis package. This enables data to be compared, annotated, viewed and manipulated into various report formats for presentation.

Operation

The Macminder system is simple to operate and requires no prior training. Initial setup is activated through a PC and requires the input of parameters such as exceedence levels. The setup is then downloaded to the data logging unit, which initiates the Macminder and starts recording. When recording is complete, all data can be downloaded to the PC for post process analysis.

Description	Specification
Construction	Aluminium box section with gasket sealed lid and waterproof connectors constructed to IP56
Typical Application	Monitoring of dynamic behaviour of Locomotive and Rolling Stock Monitoring of Passenger Ride Comfort at source Railway induced ground and building vibration monitoring Monitoring of track deterioration over time Monitoring of compatibility between Rolling Stock and Track Compilation of Maintenance schedules Indication of sudden deterioration and potentially dangerous conditions of Vehicle or Track Monitoring of compatibility between Rolling Stock and Track
Measured Parameters	
Parameter	
Vertical Acceleration	Conforming to ISO-2631 Draft 5 Standard
Lateral Acceleration	Conforming to ISO-2631 Draft 5 Standard
Longitudinal Acceleration	Conforming to ISO-2631 Draft 5 Standard
Peak to Peak Exceedences and statistics	Time and distance stamped
Speed and distance	"L" Model only – Provides tacho input capability "G" Model – Provides tacho input & GPS for speed generation only "Speed" Model also available without ISO Ride data Generated from ISO data
Peak to Peak and ISO weighted Histograms	
Technical Details	
Number of Ride Channels per Macminder	2 Channel 3 Channel
Channel Types	Peak to Peak (Histograms & Exceedences Only) ISO RMS (Histograms & Journey Data)
Filter Characteristics	Pk to Pk Accelerations, 0.05Hz - 20Hz Band Pass (5,10, 40 or 80Hz Optional) ISO Accelerations, ISO 2631 Draft 5 2 sec or 10 sec selectable at time of order 10 / 2 second RMS averaging (continuous) 0.1Hz 1.25G Full Scale (other ranges available) Tachometer Signal (Voltage 0-200V, Pulse 0-10kHz)
Sample Speed for ISO	
RMS Processing Characteristics	
Digital Sample Rate (RMS Journey)	
Measuring Range	
Speed / Distance Input	
Battery	
Recording Time:	24 Hours
Battery Charge Time:	16 Hours
Recording System	Internal Non-Volatile memory with Battery back up
Environmental	
Length:	340mm
Width:	160mm (with handles)
Height:	96mm
Weight:	4.75kg
Operating Temperature	0 Deg C to +45 Deg C
Interfaces	
PC	USB
Software	VisiRAIL v2.0