

3G Vibration and Tilt (3GV) Series

Data you want, when you want it...

A high precision MEMS vibration sensor with built-in temperature compensation and 3G capability. The sensor operates in multiple vibration modes with user defined data transfer and alert thresholds to meet your monitoring needs.

- Triggered Vibration
- Continuous Vibration

Features

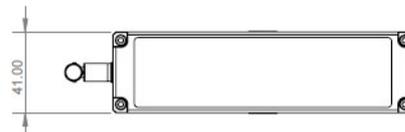
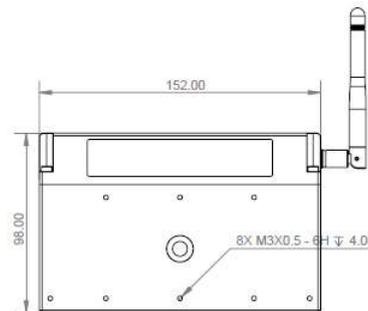
- Standalone Sensor with Internal Storage
- No Cables - Complete Wireless Solution
- Easy to Install – No Technician Needed
- Indicator LEDs – Visually Confirm Operation
- Totally Sealed Case with Magnet On/Off
- Remotely Managed and Configured via Application and SMS Messages
- SMS Alerts and FTP Data Uploads
- 2G/3G Network Connectivity
- 4 x Internal D Cell Lithium Batteries
- Low Power Battery Operation - Up to 1 Year
- Can Operate on Main Power – No Batteries Required
- Real-Time Clock
- High Reliability Network and Data Transfer
- Heartbeat and Peak PPV Data
- CSV Data Output – Easy Access and GIS Integration
- Built-in Temperature Compensation

Applications

- Structural Health Monitoring:
 - Buildings
 - Tunnels
 - Bridges
- Construction Sites
- Blast Monitoring
- Foundation Monitoring
- Large and Remote Area Monitoring



Dimensions



3G Vibration and Tilt (3GV) Series



General Specifications	
Part Number	3GV-02
Management Access Port	USB serial interface
Storage	Industrial 2GB MicroSD Card
Time Keeping	Real Time Clock (up to 3 months when powered off); Network Time Synchronisation or Internet time
Firmware Updates	Remote Over-the-air Programming (OTAP)
Application	3GV Management Application (Windows 7,8 and 10)
Vibration Specifications	
Vibration Limit (X, Y, Z)	±8G
Conformance	DIN45669-1
Maximum Response	1Hz to 1KHz
Accuracy	±5%
Sample Rate (Hz)	1000, 2000, 4000
Peak Particle Velocity (by design)	0.05 mm/sec to 3000 mm/sec
Peak Particle Velocity (validated)	Up to 620 mm/sec
Heartbeat Interval	30 sec to 12 hours
Time Stamping	1 millisecond
Buffer Size	1MB
Alert Thresholds	1 to 620 mm/sec (@ 2G Range)
Alert SMS Numbers	5
Data Outputs	Zero Crossing, Peak amplitude/frequency values (1Hz to 1KHz), Peak Particle Velocity (mm/s), Peak Vector Sum (mm/s) Threshold alerts, historical trend readings.
Filtering Standards	Filter Frequency
ISEE_SEISMOGRAPH	250
DIN_4150_3	315
DIN_4150_2_KB	80
BS_7385	300
AS_2187_2_2006	250
ONORM_S_9012	80
ISO_8569_ACC	300
IN1226	150
NS_8176_COMFORT	80
NS_8141_CONSTRUCTION	300
NS_8141_1	400
SS_4604866_PILING	300
SS_025211_SHAFT	150
SS_4604861_COMFORT	80
GEOPHONE	500
ICPE_CIRCULAR_86	150
Operating Specifications	
Communication	
Communication Technology	2G / 3G
Features	Penta-band module supporting GSM/GPRS/EDGE/UMTS/HSPA/HSUPA
Frequency Bands	800/850/900/1900/2100MHz@UMTS 850/900/1800/1900MHz@GSM
HSUPA	Release 7 (category 6). Max. 5.76Mbps
HSDPA	Release 7 (category 8). Max. 7.2Mbps
EDGE	Multi-slot Class 33. Max. 296Kbps (DL)/Max. 236.8Kbps (UL)
GPRS	Multi-slot Class 33. Max. 107Kbps (DL)/Max. 85.6Kbps (UL)
UMTS	Release 99/7. Max. 384Kbps (DL)/Max. 384Kbps (UL)
GSM	Release 99/4.
SMS	Point-to-point MO and MT, SMS Cell Broadcast, Text and PDU Mode

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Output Power	Class 3 (24dBm +1.7/-3.7dB) for UMTS bands Class E2 (27dBm±3dB) for GSM850 and EGSM900 Class E2 (26dBm±3dB) for DCS1800 and PCS1900 Class 4 (33dBm ±2dB) for GSM 850/900 Class 1 (30dBm ±2dB) for GSM 1800/1900		
Certificates	Anatel, CE, DOC, FCC, GCF, ICASA, IFETEL, PTRCB, RCM		
Power & Environmental			
Monitoring (3G Idle)	1.3ma (monitoring) and between 200ma to 700ma while transmitting (FTP/SMS)		
Battery	4 x D-Cell Lithium Thionyl Chloride, 14.5Ah		
Battery Life	1 Year based on recommended configuration		
USB Power (Option)	Management Access Port operate on main power via USB connector. No batteries required		
Operating Temperature	-40 °C TO +85 °C		
Mechanical Shock Limit	500 G (Calibration Unaffected)	1000 G (Bias Affected)	5000 G (Survivability)
MTBF (Million Hours)	1.1 (Telcordia Method I, GF/30C)	0.4 (Telcordia Method I, GM/35C)	
Dimensions	W 152 x L 98 x D 41 mm		
Weight	1.15Kg		
Mounting Choices			
Directly bolt to structure	M10 (or smaller) anchor bolts passes through case		
Mounting Bracket (Optional)	Includes bracket, 4 x spacers and 3 x standoffs		

Tilt Mode Specifications		
Euler Angles	Pitch ±90°	Roll ±90°
Resolution	0.0035°	
Accuracy	±0.005°	
Temperature Stability	+/- .05° (-45° to 110°C)	
Stabilisation Time	10 secs	
Step Response Time	2 secs	
Sample Rate	50Hz	
Heartbeat Interval	10 sec to 12 hours	
Buffer Size	128Kb	
Pre-Alert Buffer	8192 samples (- Post Alert Buffer)	
Post-Alert Buffer	8192 samples (- Pre Alert Buffer)	
Pre Alert Rate	1 sec/sample to 10 sec/sample	
Post Alert Rate	1 sec/sample to 10 sec/sample	
Alert Thresholds	0.5° to 70.0°	
Rearm Tolerance	0.5° to 45.0°	
Rearm Stable	1 sec to 300 sec	
Impact Component		
Impact Range	0.004G to 2g	
Impact Duration	5ms to 500ms	
Sample Rate	50Hz	
Alert Thresholds	32mg to 2048mg	
Rearm Tolerance	32mg to 2048mg	

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