

## Datasheet VIGILANT

### Description:

VIGILANT is a multi-channel monitoring system that can collect Ultrasound & Vibration data along with other process parameters to provide machinery health information & diagnostics. VIGILANT runs a secured embedded webserver for an easy configuration and for signal analysis & trending. Equipped with several means of communication, it offers an unmatched versatility to meet your needs. Access to the system is handled through any web browser so no software installation or license is required. Data collection is fully configurable by users, data are stored in the unit and displayed in customizable dashboards.



### Features:

- VIGILANT unit available in two configurations (permanent or Mobility case)
- Designed for SDT COMMONSENSE Ultrasound Sensor (RSV)
- Extended compatibilities to standard sensors (accelerometer IEPE/ICP, Tachometer, Temperature)
- 8 dynamic acquisition channels (High sampling rate)
- 4 additional channels (Low sampling rate)
- On-board secured webserver included for configuration and visualization
- Easy installation
- Compatible with the most Industrial communication standards

### Specifications:

General		
Function		Multi-channel acquisition system
Operable with		Provided sensors (voltage output)
Main dynamic inputs		8 channels (for vibration and ultrasound)
Auxiliary inputs		4 channels (ex: tachometer, temperature, etc.)
USB port		1 Host, used as power supply only
Status indicators		13xRGB LED
Power supply	V	20-26 V DC, 24 V DC nominal
Power consumption	W	<12
Internal battery (for safe shutdown)		Lithium-Po, 3.7 V 1300 mAh

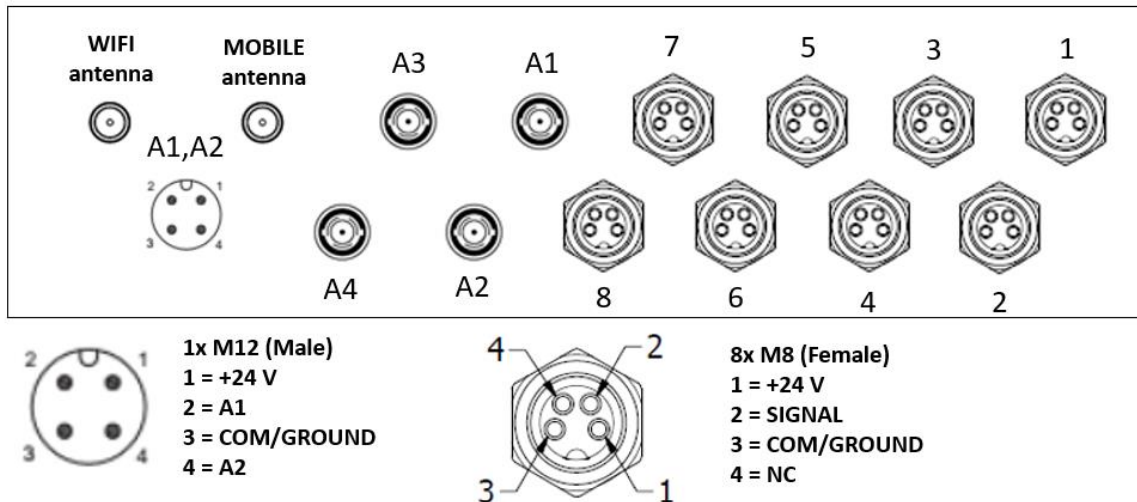
System features		
Configuration system		Integrated local webserver application
CPU		ARM Cortex™-A9 Quad Core (NVIDIA® Tegra™ 3)
Frequency clock	GHz	1.4
RAM	GB	1
Firmware		Free of charge, regularly updated (see user manual)
Storage capacity	GB	4, Micro-SD card, format ext3
Database system		SQLite
Network interface		Ethernet 10/100
Communication		DHCP/static configuration
Default IP access		192.168.0.150
Industrial communication		MODBUS TCP/IP (client and/or server) & OPC UA (option)
Backup option		FTP, Rsync or rest API
Mechanical features		
Mounting		Standard 35 mm DIN rail
Sensor interface		3-pole pluggable terminal block provided with the unit
Size of the unit	mm(inch)	LxHx: 162x95x27 (~6.38x3.74x1.06)
Weight of the unit	kg (oz)	0.55 (~19.4)
Operating temperature range	°C (°F)	-30 to +44.5°C (-22 to 111.2 °F), non-condensing
Humidity	%	95% RH
Approvals		EMC compliant (directive 2014/30/EU) WEEE compliant (directive 2012/19/EU) ROHS compliant (directive 2011/65/EU)
Signal acquisition		
		Main inputs (from 1 to 8)
Sampling rate	Hz	Up to 51200
DC range	V	± 24
AC range	Vpp	24
IEPE/ICP Sensors drive current		5.5mA @20V
ADC resolution	bits	16
Input configuration modes		Dynamic, Static, Digital, Pulse train
Harmonic distortion	dB	-70
Accuracy	%	1
Dynamic range	dB	110
Gain	dB	0 to 42, range of +6
Points type		Dynamic (preferred), Static, Tachometer
		Auxiliary inputs (A1, A2, A3 and A4)
Sampling rate	Hz	Up to 200
DC range	V	± 24
ADC resolution	bits	16
Power output	V	+24
Input configuration modes		Static, Pulse Train (A1 and A2 only)
Accuracy	%	1
Gain	dB	0 to 30, range of +6
Points type		Static, Tachometer (A1 and A2 only)
Signal processing		
Spectral lines	lines	Up to 12800
Time waveform samples	samples	128 up to 262016
Windows type		Hann, Hamming, Blackman, Rectangular

Processing modes		Waveform, Spectrum & Waveform, Demodulation, Long Waveform, Order Tracking
Parameters		Mean, RMS, True Peak, True Peak to Peak, calculated Peak, calculated Peak to Peak, spectrum RMS, Peak extraction, Frequency extraction, Crest Factor, Kurtosis, Peak phase, Smax
Available filters		Butterworth, Bessel, Chebyshev
Number of averages		1 up to 32
Overlap	%	0 up to 99
Bearing database		Included 50 k bearing references
<b>Warranty</b>		
Lifetime warranty		Visit <a href="http://www.sdtultrasound.com">www.sdtultrasound.com</a> for details

## Additional specifications with the Mobility case:



<b>Mobility case</b>		
Function		Mobile acquisition system, design to travel to off-site assets
Composed of		<ul style="list-style-type: none"> <li>• 1 Vigilant unit</li> <li>• pre-wired configuration</li> <li>• gateway for advanced communications</li> <li>• rugged, custom, waterproof case</li> <li>• AC/DC convertor</li> </ul>
Connectivity options (Gateway <a href="#">Teltonika RUT 240</a> preconfigured)		<ul style="list-style-type: none"> <li>• WIFI (access point)</li> <li>• WAN &amp; LAN</li> <li>• MOBILE 3G/4G (LTE, SIM card not included)</li> </ul> 2 antennas provided
Configuration (rear-panel)		<ul style="list-style-type: none"> <li>• 8 x M8 Female 4 Pole for the main inputs</li> <li>• 4 x BNC for the static inputs</li> <li>• 1 x M12 (common with A1 &amp; A2)</li> </ul>
Power supply Default IP access	V	220 V AC with the provided AC/DC adaptor 10.8.2.150 (from the ethernet port of the case)



Rear panel of the Mobility case

## Accessories:

<b>COMMONSENSE SENSORS &amp; CABLES</b>	
FU.SEN.RSV.001	RSV 0..10V HETERODYNE US COND - THREADED SENSOR IP65 W/O CABLE (~ VIGILANT) (RED - S/N 569)
FU.SEN.RSV.002	RSV 0..10V HETERODYNE US COND - AIRB. SENSOR CLOSED IP65 W/O CABLE (~VIGILANT) (RED - S/N 570)
FU.SEN.RSV.003	RSV 0..10V HETERODYNE US COND - AIRB. SENSOR OPEN IP40 W/O CABLE (~VIGILANT) (RED - S/N 571)
<b>Cables with Straight M8 Connector – PUR RAL7021 -25°C.+90°C IP65 – STRAIGHT SHIELDED</b>	
FU.RSC.CABL.01.015-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END 1.5m
FU.RSC.CABL.01.030-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END 3.0m
FU.RSC.CABL.01.050-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END 5.0m
FU.RSC.CABL.01.100-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END 10.0m
FU.RSC.CABL.01.200-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END 20.0m
FU.RSC.CABL.01.XXX-1	SENSOR-/ACTOR CABLE M8 4PF <> FREE END XX.Xm
<b>Cables with 90° M8 Connector – PUR RAL7021 -25°C.+90°C IP65 – STRAIGHT SHIELDED</b>	
FU.RSC.CABL.02.015-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END 1.5m
FU.RSC.CABL.02.030-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END 3.0m
FU.RSC.CABL.02.050-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END 5.0m
FU.RSC.CABL.02.100-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END 10.0m
FU.RSC.CABL.02.200-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END 20.0m
FU.RSC.CABL.02.XXX-1	SENSOR-/ACTOR CABLE M8 4PF 90° <> FREE END XX.Xm
<b>Cables with straight M8 connector 4PM &lt;&gt; M8 4PF – PUR BLACK -25°C.+80°C IP65 – STRAIGHT SHIELDED (For the Mobility case)</b>	
FU.RSC.CABL.05.015-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF 1.5m
FU.RSC.CABL.05.030-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF 3.0m
FU.RSC.CABL.05.050-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF 5.0m
FU.RSC.CABL.05.100-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF 10m
FU.RSC.CABL.05.200-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF 20m
FU.RSC.CABL.05.XXX-1	SENSOR-/ACTOR CABLE M8 4PM <> M8 4PF XX.Xm
<b>MOUNTING ACCESSORIES AND OTHERS</b>	

FU.RSC.ACC.001	Configuration Interface. Change the gain and/or the mode of COMMONSENSE Sensors (see DC.RSC.DAT.015)
FA.RSC.ACC.002-01	COMMONSENSE - HEAT SINK - AISI303 Ø30,0 (M6) x74,5mm
FU.SEACMAG-01	Flat Magnetic Foot
FU.SEACMAG-02	Curved Magnetic Foot
FU.SEACMP1	Mounting pad
FA.RSC.ACC.001-01	Mounting Accessories/Brackets
<b>ACCELEROMETERS (ICP/IEPE) &amp; CABLES</b>	
FU.SEN.ACC.001	HS-1001005006, 100 SERIES CONNECTOR ACCELEROMETER, TOP ENTRY 100mV/g, 2 PIN MS CONNECTOR, M6x1 MALE
FU.SEN.ACC.007	HS150 S 100 50 06 ACCELEROMETER MULTI-PURPOSE HIGH TEMP, SIDE ENTRY 100mV/g, 2 PIN MS CONNECTOR, M6
FU.ACC.CABL.04.100	AC334-10 - SENSOR CABLE MS2 STRAIGHT (ACC) <> FREE END 10,0m - SHIELDED - FEP BLUE -80°..+200°
FU.ACC.CABL.04.250	AC334-25 - SENSOR CABLE MS2 STRAIGHT (ACC) <> FREE END 25,0m - SHIELDED - FEP BLUE -80°..+200°
<b>ACCELEROMETERS (ICP/IEPE) with TEMPERATURE &amp; CABLES</b>	
FU.SEN.ACC.011	HS-100T1005206, 100 SERIES ACCELEROMETER W/ TEMP, TOP ENTRY 100mV/g - 10 mV/°C, 3 PIN MS CONNECTOR
FU.ACC.CABL.05.005	HS-AC440-05 - SENSOR-/ACTOR FEP CABLE MS3 FEM STRAIGHT (ACC & TEMP) - Length 5m - Free end
FU.ACC.CABL.05.020	HS-AC440-20 - SENSOR-/ACTOR FEP CABLE MS3 FEM STRAIGHT (ACC & TEMP) - Length 20m - Free end
<b>TRIAxIAL ACCELEROMETERS (ICP/IEPE) &amp; CABLES</b>	
FU.SEN.ACC.012	HS-173R1005406, 173 SERIES TRIAXIAL ACCELEROMETER, TOP ENTRY 100mV/g - M12 CONN - M6x1 MALE STUD
FU.ACC.CABL.11.030	SAC-4P- 3,0-PUR/M12FS (1668111) - SENSOR-/ACTOR CABLE M12 4PF <> FREE END 3,0m - SHIELDED - PUR BLACK
<b>TACHOMETER</b>	
SITOMTACHO-10	MiniVLS 212 SPEED SENSOR PLAIN HOUSING 8-24Vdc 0,1...250.000rpm - 10°...+40°C IP67 M12 4P
FU.ACC.CABL.11.030	SAC-4P- 3,0-PUR/M12FS (1668111) - SENSOR-/ACTOR CABLE M12 4PF <> FREE END 3,0m - SHIELDED - PUR BLACK
<b>POWER SUPPLY</b>	
FU.VIG.PSU.001	VIGILANT - POWER SUPPLY UNIT 24V 60W DIN-RAIL MOUNT W/ WIRING
FU.VIG.PSU.002	VIGILANT - POWER SUPPLY UNIT 24V 30W DIN-RAIL MOUNT W/ WIRING

NB: Additional details are available from the download section of SDT web site: [www.sdtultrasound.com](http://www.sdtultrasound.com)

4	CMA 10/11/2022	Accessories added	CGI
3	CMA 2021/20/04	ERRATUM bins/KSPS in signal processing	RGO
2	CMA 2021/13/04	Minor revision	FBO
1	CMA 2021/10/03	Original version	FBO
<b>Ver.</b>	<b>Editor</b>	<b>Nature of modification</b>	<b>Verified</b>

The information herein is believed to be accurate to the best of our knowledge.

Due to continuous research and development, specifications are subject to change without prior notice.