

The DN26 G3 Machine Protection Monitor is a high performance fully programmable signal conditioning unit capable of monitoring 2-Channels of Absolute Vibration, Shaft Vibration or Thrust Position. An additional third channel is available as standard for measuring speed or for use as a phase reference. The DIN Rail mountable module is designed specifically for machine protection applications, offering a compact and cost effective solution with a range of measurement algorithms.

The sensor interface is programmable to accept IEPE type accelerometers / velocity transducers, proximity probes (API 670 std), and active / passive speed probes. All sensor signals are available via a buffered interface to offer the option for further detailed signal analysis.

Three alarm relays are available as standard (expandable to seven), one relay dedicated to indicate module and sensor integrity, the other two relays are fully programmable across the alarm criteria selected. All three input channels measured values are available via a 4-20mA interface.

The module is provided with an intuitive LCD display for live viewing of measured values and alarm status. Both Modbus RS485 and TCP/IP interfaces are available for the transfer of data. The TCP/IP interface offers access to the internal webserver for configuration and set up of the module. This interface is also utilised for the uploading of the required measurement algorithm in to the module.

Machine Measurement Modes

- Bearing & Shaft Vibration
- Thrust Position
- Speed & Phase

Applications

- Small to Medium Industrial Machines
- Fans, Pumps, Motors and Centrifuges
- Shutdown Protection
- Ideal for OEM integration

Flexible Configuration

- Universal hardware platform
- Field upgradable
- Fully programmable through internal webserver

Bearing Vibration*Measurement Units*

Select from Acceleration (m/s² or g), Velocity (mm/s or ips) and Displacement (um or mil).

*Filter Characteristics**Low Pass*

Programmable 3dB, 100Hz to 3kHz
Roll off >24dB / Octave

High Pass

Programmable 3dB, 1.0Hz to 100Hz
Roll off >24dB / Octave

Measurement Range, Accuracy and Resolution

Maximum range setting

Acceleration	0 – 100.0g, ±1.0% typ, ±3.0% max (1Hz to 3kHz as standard)
Velocity	0 – 100mm/s, ±1.0% typ, ±3.0% max (1Hz to 3kHz as standard)
Displacement	0 – 1000um, ±1.0% typ, ±3.0% max (5Hz to 1kHz Velocity transducer) (10Hz to 300Hz Accelerometer)

Resolution of displayed readings better than 1%

Transducer Configurations

Accelerometer	
Sensitivity Range	1.00mV/g to 10.00V/g
Configuration	+18V 2/3 wire options
IEPE Current	5.0mA nominal (2-wire)
+18V Source	10mA maximum (3-wire)

Velocity Transducer

Active or Passive option

Sensitivity Range	1mV/mm/s to 50mV/mm/s
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Transducer Integrity

Active device range	-19.5V to +17.5V
Passive device	O/C and S/C detection

Shaft Vibration*Measurement Units*

Displacement (um or mil), pk or pk to pk,

*Filter Characteristics**Low Pass*

Programmable 3dB, 100Hz to 3kHz
Roll off >24dB / Octave

High Pass

Fixed 3dB at 0.8Hz as standard

Measurement Range, Accuracy and Resolution

Displacement 0–1000um max, ±1.0% typ, ±3.0% max
Resolution of displayed readings better than 1%

Transducer Configuration

Eddy Current / Proximity Probe	
Sensitivity Range	1.00mV/um to 10.00mV/um
Fixed Options	3.94mV/um & 7.84mV/um
3 – wire system	-24V @ 40mA max
Integrity window	-19.5V to -0.5V

Speed / Tacho Input*Measurement Parameters*

Frequency Range	0.02Hz to 20kHz
Accuracy	< ±0.1% of reading
Resolution	<±0.1% of full scale
Dynamic range	100mV pk-pk – 20.0V pk-pk
Decision Threshold	Auto Ranging

Transducer Options

Proximity Probe

Passive Magnetic Probe

Active Magnetic Probe

TTL (Note:- Max 3mA load on TTL buffered output)

All above input options terminated in 10kOhm load.

Common Alarm Features*Parameter Alarms*

Two parameter alarms (A1 and A2) are available per channel, programmable within the set measurement range. Hysteresis, Latching mode and Delay are configurable.

Hysteresis	1 to 10%, resolution 1%
Delay	1.0 to 60.0s, resolution 0.1s
Mode	Latching or Fleeting
TLD/TLM	Trip Level Multiply / Divide Function

Relay Configuration Options

Option 1

Relay 1	:	CHA A1 + CHB A1
Relay 2	:	CHA A2 + CHB A2
Relay 3	:	CHA A3 + CHB A3
Output 1	:	CHA A1
Output 2	:	CHB A1
Output 3	:	CHA A2
Output 4	:	CHB A2

Option 2

Relay 1	:	CHA A1
Relay 2	:	CHB A1
Relay 3	:	CHA A3 + CHB A3
Output 1	:	TACHO A1
Output 2	:	TACHO A2
Output 3	:	TACHO Window
Output 4	:	TACHO Zerospeed

Integrity Alarms

The A3 and A4 alarms are allocated to transducer integrity and channel / gap integrity respectively. Hysteresis, Latching mode and delay are configurable.

Hysteresis	Fixed to 2%
Delay	1 to 60s, resolution 0.1s

A single relay is available to indicate the overall module integrity. This is configured for de-energised to alarm.

Relay Rating

Maximum Voltage Rating	250Vac / 220Vdc
Maximum Current Rating	1A
Contact resistance	100mOhm
Switching time	5ms

Buffered Outputs

For each channel the raw transducer signal is buffered to both the front panel through BNC connectors.

Frequency Range	DC to 10kHz (Prox) 1Hz to 10kHz (Accel)
Accuracy	± 1%
Source Impedance	< 50 Ohms

Current Outputs

For each of the two measurement channels and the speed channel a programmable 4-20mA current output is available.

Current Range	0.0mA to 20.0mA
Current Accuracy	+/- 0.2% of full scale
Maximum Resistance	500 Ohms at +20.0V

CE Marking

EMC	2004/108/EC EN61326:1997 A2:2001
LVD	2006/95/EC EN61010-12003

Front Panel Facilities

Colour LCD display	Size 43mm x 57mm Resolution 240 x 320 pixels
LED Indicators	OK Active Green ALM Active Red TxRx Active Green

User Set up	Ethernet TCPIP Internal Webserver
Navigation	Front panel push buttons for display configuration
Alarm Reset	Navigation / Wired contacts
Buffered Outputs	BNC, 50 Ohm

Communications

TCP/IP & RS-485 Modbus slave

Power Supply

Module Supply DC Voltage	+20Vdc to +28Vdc
Module Supply AC Voltage	90Vac to 264Vac 50Hz / 60Hz
Module Power Consumption	6W typ 8W max

Mechanical

Module Dimensions (W x H x D) (Including DIN Rail and BNC connectors)	108.5 x 127.2 x 88.4mm
Weight	512 grams

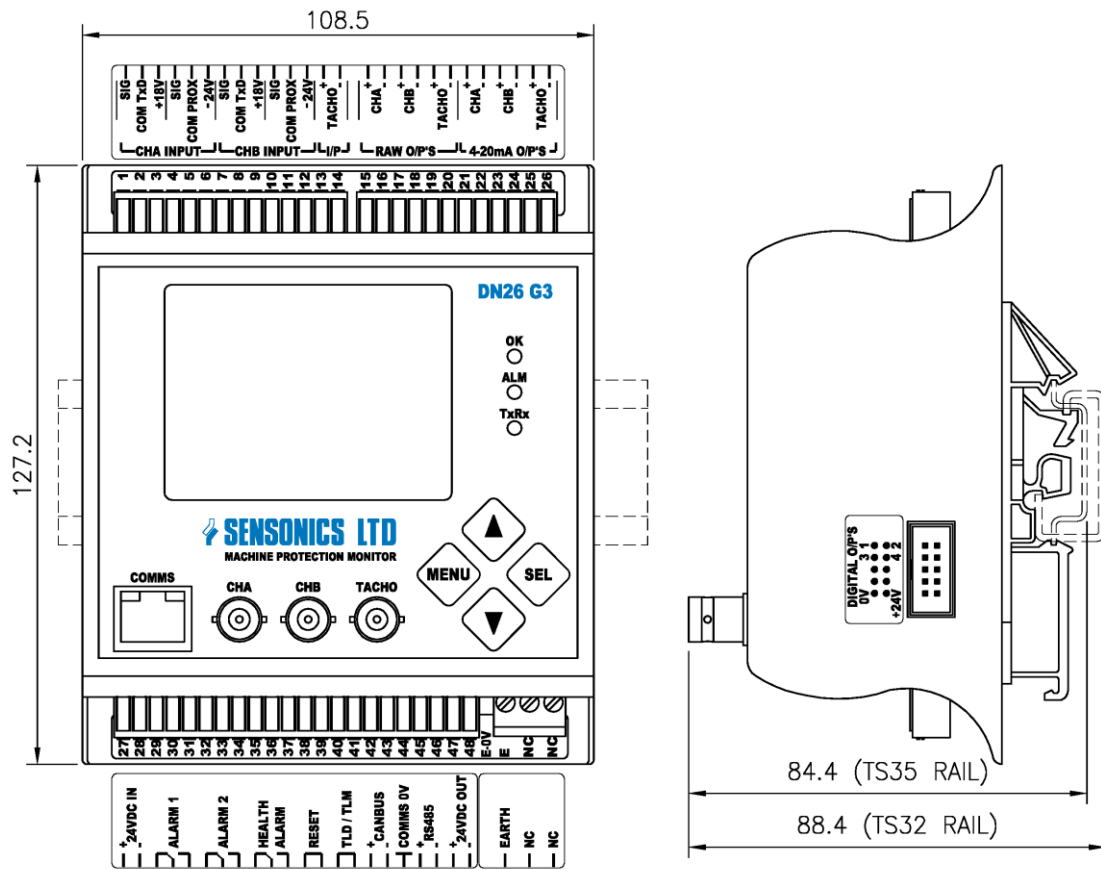
Temperature

Operating	-20 °C to +50 °C
Storage	-30 °C to +85 °C

Terminal Identification

Pin No.	I.D	Description	Pin No.	Description
1	SIG (+)	Chan A Transducer I/P Hi	25	ATACHO+
2	COM TxD	Chan A Transducer I/P Lo/0V	26	ATACHO-
3	+18V	Chan A TXD Power I/P	27	+24Vdc
4	SIG (-)	Chan A Proximity I/P Hi	28	0Vdc
5	COM TxD	Chan A Proximity I/P Lo / 0V	29	R1 N/C
6	-24V	Chan A Proximity Power O/P	30	R1 COM
7	SIG (+)	Chan B Transducer I/P Hi	31	R1 N/O
8	COM TxD	Chan B Transducer I/P Lo/0V	32	R2 N/C
9	+18V	Chan B TXD Power I/P	33	R2 COM
10	SIG (-)	Chan B Proximity I/P Hi	34	R2 N/O
11	COM TxD	Chan B Proximity I/P Lo / 0V	35	R3 N/C
12	-24V	Chan B Proximity Power O/P	36	R3 COM
13	TACHO +	Speed Input Hi	37	R3 N/O
14	TACHO -	Speed Input Lo	38	RESET +
15	RCHA +	RAW O/P Chan A +	39	RESET -
16	RCHA -	RAW O/P Chan A -	40	TLD +
17	RCHB +	RAW O/P Chan B +	41	TLD -
18	RCHB -	RAW O/P Chan B -	42	CAN +
19	RTACHO+	TACHO O/P +	43	CAN -
20	RTACHO-	TACHO O/P -	44	COM 0V
21	CHA +	Chan A 4-20mA O/P Hi	45	RS485 +
22	CHA -	Chan A 4-20mA O/P Lo	46	RS485 -
23	CHB +	Chan B 4-20mA O/P Hi	47	+24Vout
24	CHB -	Chan B 4-20mA O/P Lo	48	+0Vout

Mechanical Configuration



Note:- +24Vdc power option shown

Order Codes

DN26/G3 – AA – BB

A Power Supply Options

- 01 – Standard, +20 to +28Vdc
- 02 – Mains, 90Vac - 264Vac

B Third Channel Options

- 00 – Speed / Phase channel not fitted
- 01 – Speed / Phase channel fitted

Optional Items

- IS4031/1 4 – Channel Relay Expansion Card, DIN Rail mount with 1m ribbon cable
- USRPK Containing 1-off CAT-6 Ethernet, 2m cable + 2-off BNC plug to plug, 2m cables



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