



## DPL/DPN-SERIES INCLINOMETER

### SPECIFICATIONS

- ◆ Dual axis inclinometer module
- ◆ Measurement range  $\pm 2^\circ$  to  $\pm 30^\circ$
- ◆ Digital and analogue output signal
- ◆ High accuracy
- ◆ Digital filtering
- ◆ OEM use

### FEATURES

- PCB level
- High accuracy
- Fast response time
- High resolution
- Digital output RS 232
- Analogue output 0.3...4.7V
- Programmable digital filtering to minimized influences of shock and vibration
- Programmable zero point, output rate, etc.

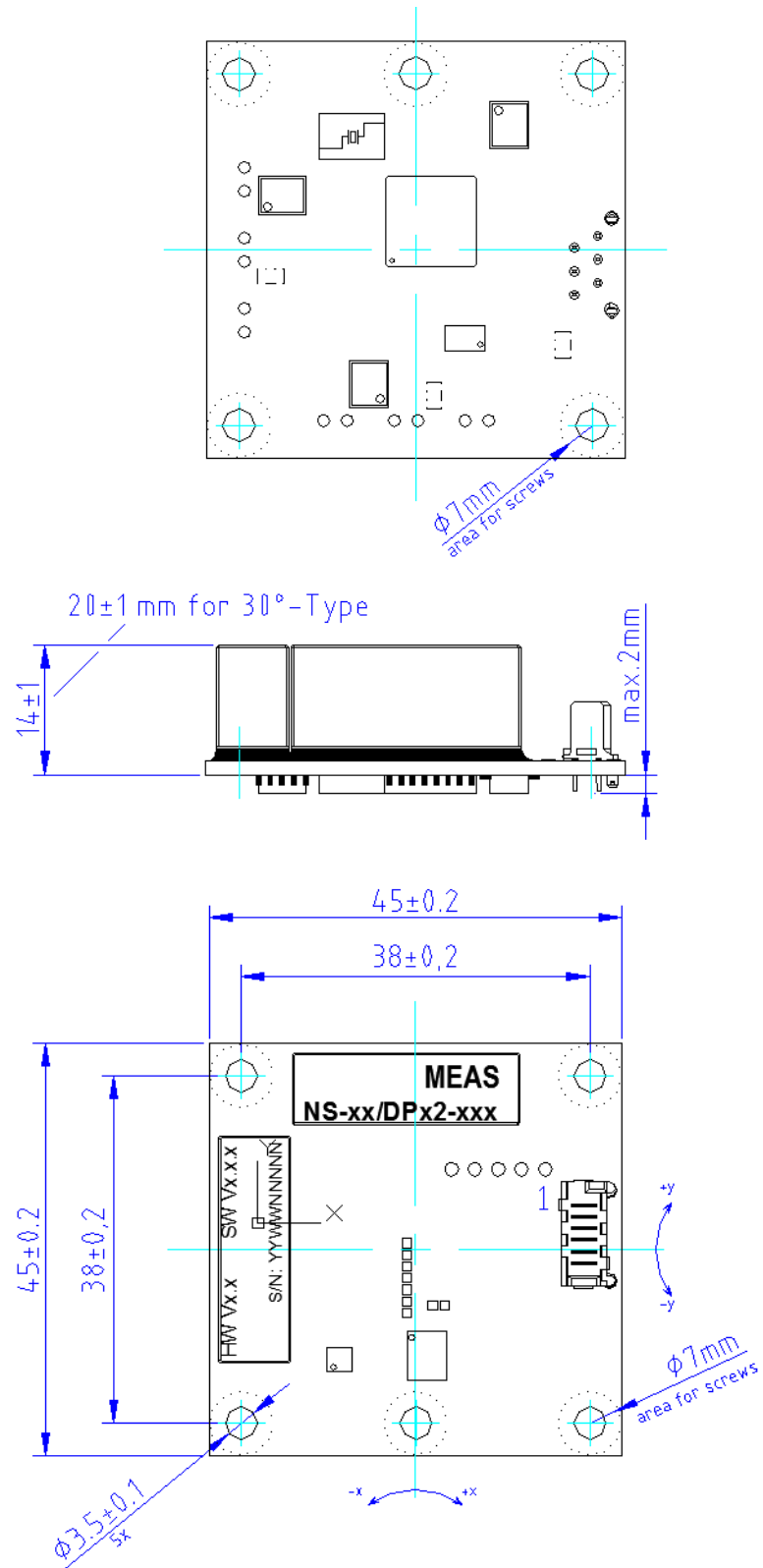
### APPLICATIONS

- Platform leveling
- Road construction machines
- Drilling machines
- Weighing systems
- Mobile and stationary cranes
- Hydraulic leveling
- Building control
- Wind power

**The DPL/DPN-Series** is modern SMD technology based small board-level dual axis inclinometer applying conductive technology. A high-speed microcontroller implements linearization and temperature compensation routines, thus providing excellent accuracy over the full operating temperature range. The DPL / DPN series inclinometer is available with both fully compensated digital output TTL/RS 232 and/or analogue voltage output 0.3 to 4.7V. A programmable digital software filter allows the reduction of shock- and vibration influences during operation for optimal measurement results.

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## DIMENSIONS [MM]



**PERFORMANCE SPECIFICATIONS**

	Conditions	Min	Type	Max	Unit
Measurement ranges		-2,-5,-10-15,-30		+2,+5,+10,+15,+30	°
Resolution			0.001		°
Accuracy (absolute), type 2°	Ta = +25°C, -40°C to 85°C	0.05		0.15	°
Accuracy (absolute), type 5°	Ta = +25°C, -40°C to 85°C	0.05		0.15	°
Accuracy (absolute), type 10°	Ta = +25°C, -40°C to 85°C	0.06		0.15	°
Accuracy (absolute), type 15°	Ta = +25°C, -40°C to 85°C	0.06		0.25	°
Accuracy (absolute), type 30°	Ta = +25°C, -40°C to 85°C	0.17		0.8	°
Offset temperature drift error	Ta = +25°C		0.05		°
Digital output rate (1)	TTL,RS232,SPI	0.5	10	25	Hz
Noise RMS			0.001		°
Analogue voltage output		0.3		4.7	V
Current consumption			8	15	mA
Power supply (2)	DPL2 series		5		VDC
Power supply (3)	DPN2 series	7		30	VDC
Operation temperature range		-40		+85	°C
Storage temperature range		-40		+85	°C
Weight			20		g
Dimensions (4)	W x D x H		45 x 45	x 14(20)	mm

(1) programmable

(2) only for series NS-xx/DPL2-xxx

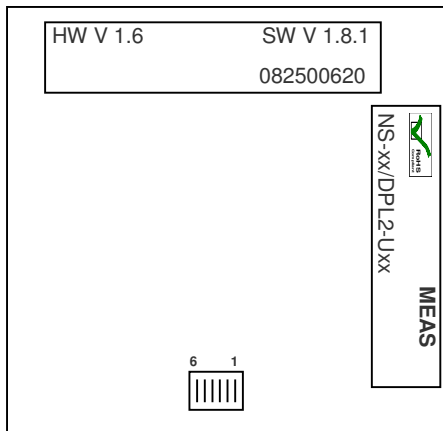
(3) only for series NS-xx/DPN2-xxx

(4) H=20mm the 30° unit only

**PINNING - UNIT WITH UART /TTL INTERFACE**

**Unit NS-xx/DPL2-Uxx**

Pin	Name	Description	Type
1	Vcc	Positive power supply <b>+5VDC</b>	Supply , input
2	RxD	UART input signal (TTL-level)	Input 1
3	GND	Negative power supply, ground output signal analogue/digital	Supply , input
4	N.C.	Not connected	-
5	N.C.	Not connected	-
6	TxD	UART output signal (TTL-level)	Output 1



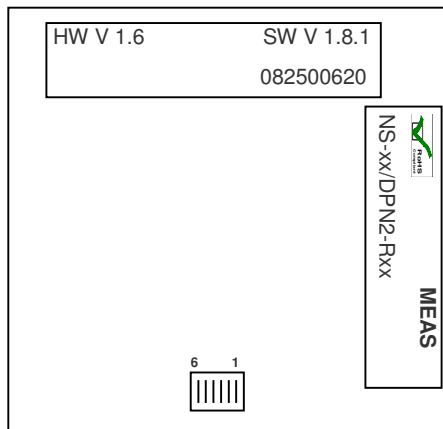
Surface view, Top level

For more details please use the product specification / application note / instruction manual.

**PINNING - UNIT WITH RS 232 INTERFACE AND ANALOGUE OUTPUT**

**Unit NS-xx/DPN2-Rxx**

Pin	Name	Description	Type
1	Vcc	Positive power supply <b>+7...30VDC</b>	Supply , input
2	RxD	RS232 input signal	Input 1
3	GND	Negative power supply, ground output signal analogue/digital	Supply , input
4	VoutX	Analogue output signal X-axis	Output 2, X
5	VoutY	Analogue output signal Y-axis	Output 2, Y
6	TxD	RS 232 output signal	Output 1



Surface view, Top level

For more details please use the product specification / application note / instruction manual.

**ORDERING INFORMATION**

<b>PART NUMBERING</b>	<b>UNIT</b>	<b>SHORT DESCRIPTION</b>
G-NSDPL2-007	NS- 2/DPL2-UXD	Range +/-2°, Vcc +5 VDC, output TTL-level (UART)
G-NSDPL2-021	NS- 2/DPL2-SXD	Range +/-2°, Vcc +5 VDC, output SPI
G-NSDPL2-008	NS- 2/DPN2-RXD	Range +/-2°, Vcc +7...30 VDC, output RS 232
G-NSDPL2-022	NS- 2/DPN2-RUD	Range +/-2°, Vcc +7...30 VDC, output RS 232, 0.3 to 4.7V
G-NSDPL2-009	NS- 5/DPL2-UXD	Range +/-5°, Vcc +5 VDC, output TTL-level (UART)
G-NSDPL2-023	NS- 5/DPL2-SXD	Range +/-5°, Vcc +5 VDC, output SPI
G-NSDPL2-010	NS- 5/DPN2-RXD	Range +/-5°, Vcc +7...30 VDC, output RS 232
G-NSDPL2-024	NS- 5/DPN2-RUD	Range +/-5°, Vcc +7...30 VDC, output RS 232, 0.3 to 4.7V
G-NSDPL2-004	NS- 10/DPL2-UXG	Range +/-10°, Vcc +5 VDC, output TTL-level (UART)
G-NSDPL2-016	NS- 10/DPL2-SXG	Range +/-10°, Vcc +5 VDC, output SPI
G-NSDPL2-005	NS- 10/DPN2-RXG	Range +/-10°, Vcc +7...30 VDC, output RS 232
G-NSDPL2-025	NS- 10/DPN2-RUG	Range +/-10°, Vcc +7...30 VDC, output RS 232, 0.3 to 4.7V
G-NSDPL2-003	NS- 15/DPL2-UXG	Range +/-15°, Vcc +5 VDC, output TTL-level (UART)
G-NSDPL2-017	NS- 15/DPL2-SXG	Range +/-15°, Vcc +5 VDC, output SPI
G-NSDPL2-006	NS- 15/DPN2-RXG	Range +/-15°, Vcc +7...30 VDC, output RS 232
G-NSDPL2-026	NS- 15/DPN2-RUG	Range +/-15°, Vcc +7...30 VDC, output RS 232, 0.3 to 4.7V
G-NSDPL2-011	NS- 30/DPL2-UXN	Range +/-30°, Vcc +5 VDC, output TTL-level (UART)
G-NSDPL2-001	NS- 30/DPL2-SXN	Range +/-30°, Vcc +5 VDC, output SPI
G-NSDPL2-012	NS- 30/DPN2-RXN	Range +/-30°, Vcc +7...30 VDC, output RS 232
G-NSDPL2-027	NS- 30/DPN2-RUN	Range +/-30°, Vcc +7...30 VDC, output RS 232, 0.3 to 4.7V
G-NSMIS-014	Connector,cable	Connector, 6 pin, 20 cm ribbon cable DPL/DPN-series