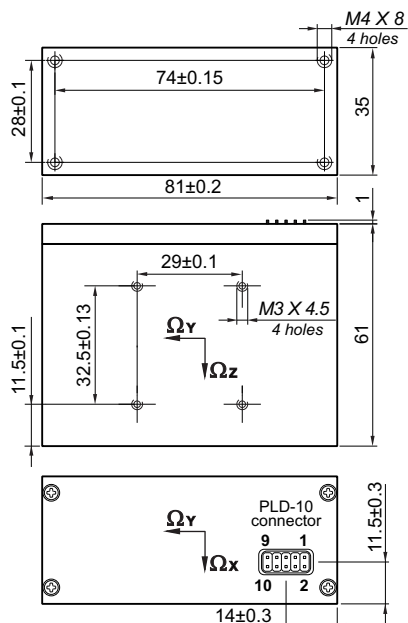


VG091-3D1

DESCRIPTION OF OUTPUT CONNECTOR PLD-10

Contact	Name	Comments
1	+ 5 V	Power input +5V ± 0.25V, 700mA max, ripple 10mV max within 0-1MHz
2 - 6	—	Reserved
7	KEY	Shortened pin
8	GND	Power return line, ground
9	RS232 TXD	Digital output RS232
10	D_GND	Digital ground, connected to "GND"



OUTLINE DRAWING

RECOMMENDATIONS AND PRECAUTIONS

1. Do not deform housing
2. Fragile components inside - no shocks, no drop
3. Treat as electrostatic sensitive unit
4. Is designed to be mounted inside water protected equipment
5. Increased humidity shortens essentially lifetime
6. Power must be off during connecting
7. Soldering to contacts - by low-temperature solder

PHYSICAL PARAMETERS

1. $\Omega_{x,y,z}$ - sensing axis, $90^\circ \pm 1.5^\circ$
2. Dissipation - 3.5 W
3. Weight - 280 gram (330 gram max)
4. Volume - 0.17 litre
5. Housing material - aluminum alloy
6. Tolerances per ISO 2768-m
7. Ingress protection class - IP67

DIGITAL OUTPUT

1. Asynchronous RS232 port, 8 bit data, 1 stop bit, no parity control.
2. Transmission rate - 115 kBod (repetition rate ~ 0.6 kHz).
3. Sensor output voltage = $2.5 \text{ RATE} / 2^{23} \text{ V}$, RATE is a binary complementary 24-bit word (see Table 1).
4. Additional data (Xdata) - temperature (ADC board), supply voltage, consumption currents, the outputs of built-in temperature sensors. These data (16 bits each) are transmitted in series of 32 sendings according to the status of COUNTER (see Table 2).

MAIN PARAMETERS (typical values)

- ◆ Rate range 300 deg/s
- ◆ Scale Factor (SF) 7 mV/deg/s
- ◆ Angle random walk 0.03 deg / \sqrt{h}
- ◆ Bias stability, RMS 4 deg / h
- ◆ SF stability, RMS 0.1 %
- ◆ Readiness time 1 s

ENVIRONMENT

- ◆◆ Temperature operating -40°C ... +70°C
- ◆◆ Temperature endurance -55°C... +85°C
- ◆ Vibration (operating), RMS 2 g, 20Hz... 2000Hz
- ◆ Vibration (endurance), RMS 6 g, 20Hz... 2000Hz
- ◆ Shocks (endurance) 350 g, 1 ms
- ◆ Acceleration (operating) 5 g
- ◆ Acceleration (endurance) 20 g, 5 s

RELIABILITY

- ◆ MTBF 20000 hours (20°C, predicted)
- ◆ Lifetime (predicted) 15 years
- ◆ Precision class - ④
- ◆ Estimated for low humidity
- ◆ Operating temperature - temperature of built-in temperature sensor (see table 2)
- ◆◆ Endurance temperature - environment temperature. Sensor is turned off.

Table 1. Digital data format and data block content

SOD (1 byte)	DD hex (start of Data)
Data Block (12 bytes)	00 hex RATELX lowest byte (L) RATEMX middle byte (M) RATEHX highest byte (H) RATELY lowest byte (L) RATEMY middle byte (M) RATEHY highest byte (H) RATELZ lowest byte (L) RATEMZ middle byte (M) RATEHZ highest byte (H) COUNTER status Xdata
LCC (2 bytes)	2 bytes of sum of Data Block
Total - 15 bytes	

Table 2. X data content

Counter	Byte	X data
00	H	Temperature (ADC board) [°C]
01	L	HL · 250 / 2 ¹⁵ - 50
02	H	Supply voltage [V]
03	L	HL · 2.5 / 2 ¹⁵ / 0.25
04	H	Temperature (channel "X") [°C]
05	L	HL · 250 / 2 ¹⁵ - 50
06	H	Consumption current (channel "X") [A]
07	L	HL · 2.5 / 2 ¹⁵ / 10
08 - 09		Reserved
0A	H	Temperature (channel "Y") [°C]
0B	L	HL · 250 / 2 ¹⁵ - 50
0C	H	Consumption current (channel "Y") [A]
0D	L	HL · 2.5 / 2 ¹⁵ / 10
0E - 0F		Reserved
10	H	Temperature (channel "Z") [°C]
11	L	HL · 250 / 2 ¹⁵ - 50
12	H	Consumption current (channel "Z") [A]
13	L	HL · 2.5 / 2 ¹⁵ / 10
14 - 1F		Reserved