counter/timer module
DM0101

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1   description

The DM0101 counter/timer module converts a PC into a high performance pulse counting instrument. The module has a 32 bit count capability and includes a microcontroller and RS232 interface to communicate with a host computer. Software supplied with the module makes the DM0101 perform a sequence of count rate measurements as programmed by the user. The DM0101 is supplied with software allowing measurements to be made immediately following switch-on. An ActiveX control driver is also provided to allow users to develop their own control software using LabView, Visual Basic etc. A serial lead and power and user interface connectors are included.

2   applications

For counting all sources of TTL pulses but specifically all Sens-Tech TTL photon counting modules.

3   features

- 60 MHz capability (100Mcps*)
- trigger input for synchronous counting
- accepts TTL input
- two user outputs
- easily configured as a laboratory ratemeter
- results easily exported

4   operating modes

The following operating modes are available with the software application provided:

- continuous readings
- fixed number of readings
- continuous reading — trigger high
- fixed number of readings — start on falling edge trigger

5   additional equipment required

supply voltage	+4.75 to 5.5 V
PC	any PC with free RS232 serial port and Windows 2000, XP, Windows 7

6   user manual

A comprehensive manual giving installation, start up software and programming procedures is supplied on CD-Rom with every DM0101

7   characteristics

power supply

connector	2.1 mm power socket
voltage	+4.75 to 5.5 V
current	60 mA max at 5 V

signal input

connector	BNC socket

levels

	TTL
edge speed	125 mV /ns min, 0.8 to 2.0 V
minimum pulse width	5.0 ns
pulse pair resolution	8.3 ns
maximum frequency	60 MHz(100Mcps*)
sample time	10 ms to 300 s

RS232 interface

connector	9 pin plug
baud rate	9600
format	no parity, 8 data bits, 1 stop bit, no handshaking

user interfaces

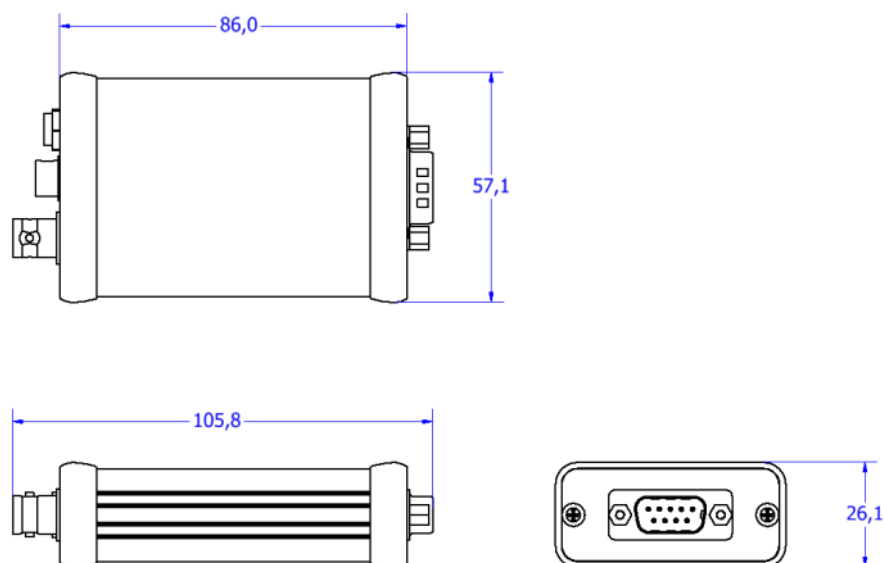|	
connector	Hirose 6 pin chassis plug HF10-7R-6P
trigger input	TTL
out 1	TTL; sink 20 mA, source 80 µA
out 2	open drain FET**

general

weight	109g
dimensions (including sockets)	105.8 x 26.1 x 57.1 mm

*with ultra fast photomultipliers, and using dead time correction
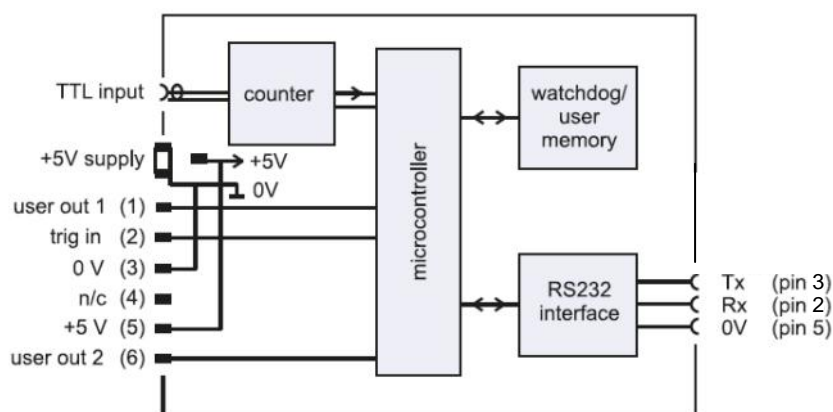**sink 60 mA, on resistance 0.45 Ω max.

8   ordering information

DM0101   boxed electronic module and lead set
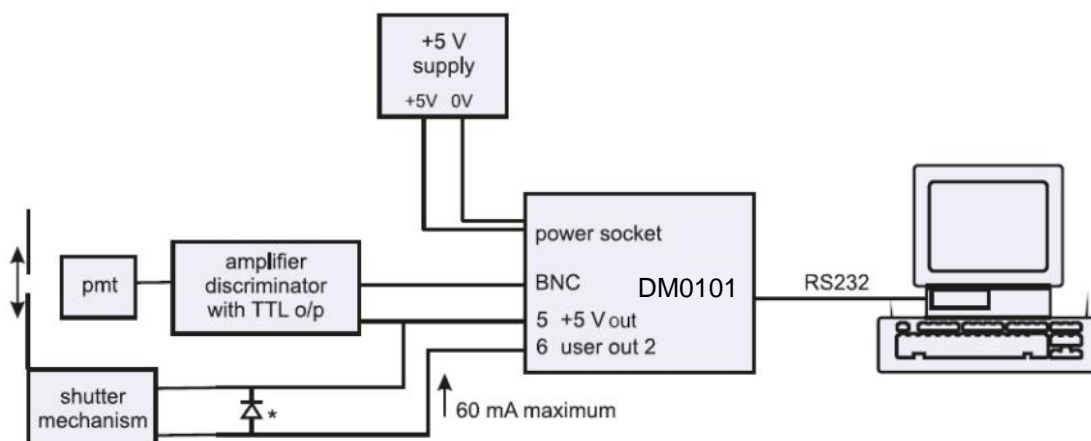
DM0101PSU   universal ac power adaptor for use worldwide

9   external dimensions (mm)

86,0

57,1

105,8

26,1

10   functional diagram

TTL input — counter — microcontroller — watchdog/ user memory

+5V supply — +5V / 0V

user out 1 (1)
trig in (2)
0 V (3)
n/c (4)
+5 V (5)
user out 2 (6)

RS232 interface

Tx   (pin 3)
Rx   (pin 2)
0V   (pin 5)

11   typical application illustrating the DM0101 coupled to a photon counting module

+5 V supply
+5V   0V

pmt — amplifier discriminator with TTL o/p

power socket

BNC   DM0101   RS232

5 +5 V out
6 user out 2

shutter mechanism

*

60 mA maximum

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Sens-Tech photomultiplier modules provide the instrument designer with a wide range of high performance plug-and-play solutions for low and high light level detection and measurement. Modules are light tight and incorporate combinations of the following:

- photomultiplier
- power supply
- voltage divider
- electromagnetic screening
- electrostatic screening
- signal processing electronics
- outputs include, USB, TTL, RS232, Voltage, Current

Photomultiplier Modules are suitable for the following applications:

- photon counting
- pulsed light
- analogue detection

Benefits include:

- shorter time-to-market
- cost effectiveness
- applications support long after the sale
- plug-and-play versions
- user friendly
- physically robust
- long term stability of operation
- reduced susceptibility to e-m interference
- user protected package with encapsulated HV
- adjustable versions offering user control

If your requirement demands a unique module please discuss this with us.

Click here for further information

Click here for further information