DTM96 Communication Module

The DTM96 functions as an RS232 to RS485 convertor and / or enables (32) DTM modules to be networked together via Modbus. Combined with the DTM-CFG configuration software, the DTM96 truly provides a distributed vibration system. The Modbus interface enables users to remotely monitor, configure, and calibrate the DTMs.

DTM96 Features

✓ **Direct Modbus RTU interface**

✓ **Optically isolated RS485, RS422, and RS232 communications**

✓ **Communicate with the DTM using your computers RS232 connection**

✓ **Provides galvanic isolation between PC and DTM**

Specifications

Electrical

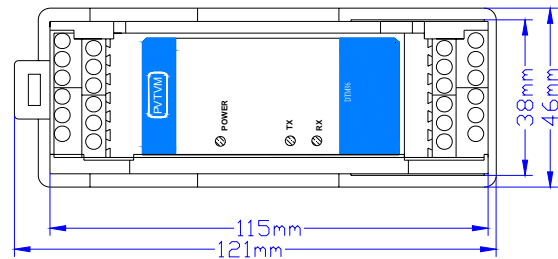Power Supply: 22-30VDC, 150mA
                  Galvanic isolation

Modbus: Modbus RTU
                  RS485 and RS232
                  Galvanically Isolated

                  Modbus TCP
                  RJ45 Ethernet connection
                  Galvanically Isolated

Physical

Dimension:
        Height: 75mm (2.95″) see figure below.
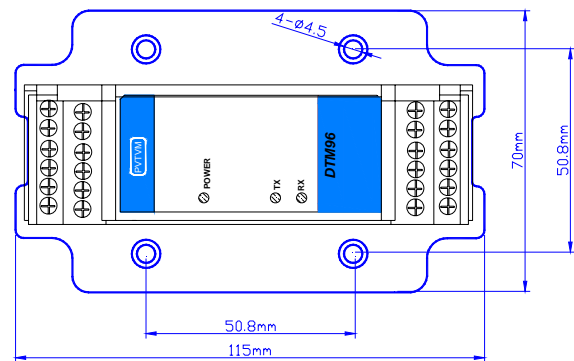   Weight: 0.7lb (0.3kg).

Rail Mounting

Plate Mounting

Environmental

Temperature:
    Operation: -40℃ ~ +85℃ .
    Storage: -50℃ ~ +100℃ .
Humidity: 90% non-condensing.
Case: Aluminum

Certification

CE certified with EMI compliance

CSA: Class I, Div. 2,Grps A,B,C&D,T4

ATEX: II 3 G Ex nA II T4
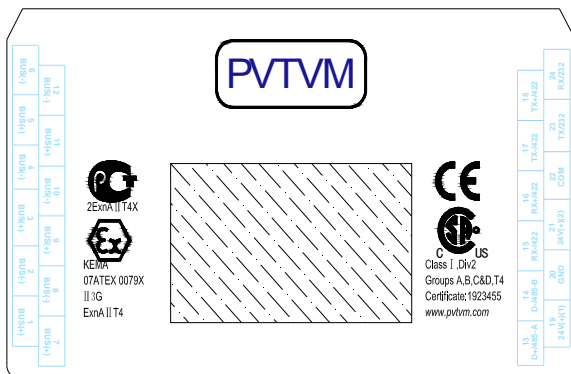
**TR CU: 2Ex nA IIT4 X

№ TC RU C- US.ГБ05.B.00476

NANIO CCVE

Hazardous area

Marking:

ATEX Standards :
    EN 60079-0
    EN 60079-15

Special condition in hazardous area:

— The ambient temperature range is: -40℃≤Ta≤70℃

— DTMs must be placed inside an enclosure that is in accordance with EN 60079-15:2005.

— Provisions must be made externally to prevent the rated voltage from being exceeded by transient disturbances of more than 40 %.

Ordering Information

DTM96-AX-BX-SX

DTM interface module with RS485 and RS232.

AX: Output
   A0*:   Modbus RS485, RS232, RS422

BX: Mounting
   B0*:   DIN rail mounting
   B1:   Plate mounting

SX: Approvals

   S0*:   CE

   S1:   CE certified with EMI compliance
          CSA: Class I, Div. 2,Grps A,B,C&D,T4
          ATEX: II 3 G Ex nA II T4
          TR CU: 2Ex nA II T4 X
                № TC RU C- US.ГБ05.B.00476
                NANIO CCVE

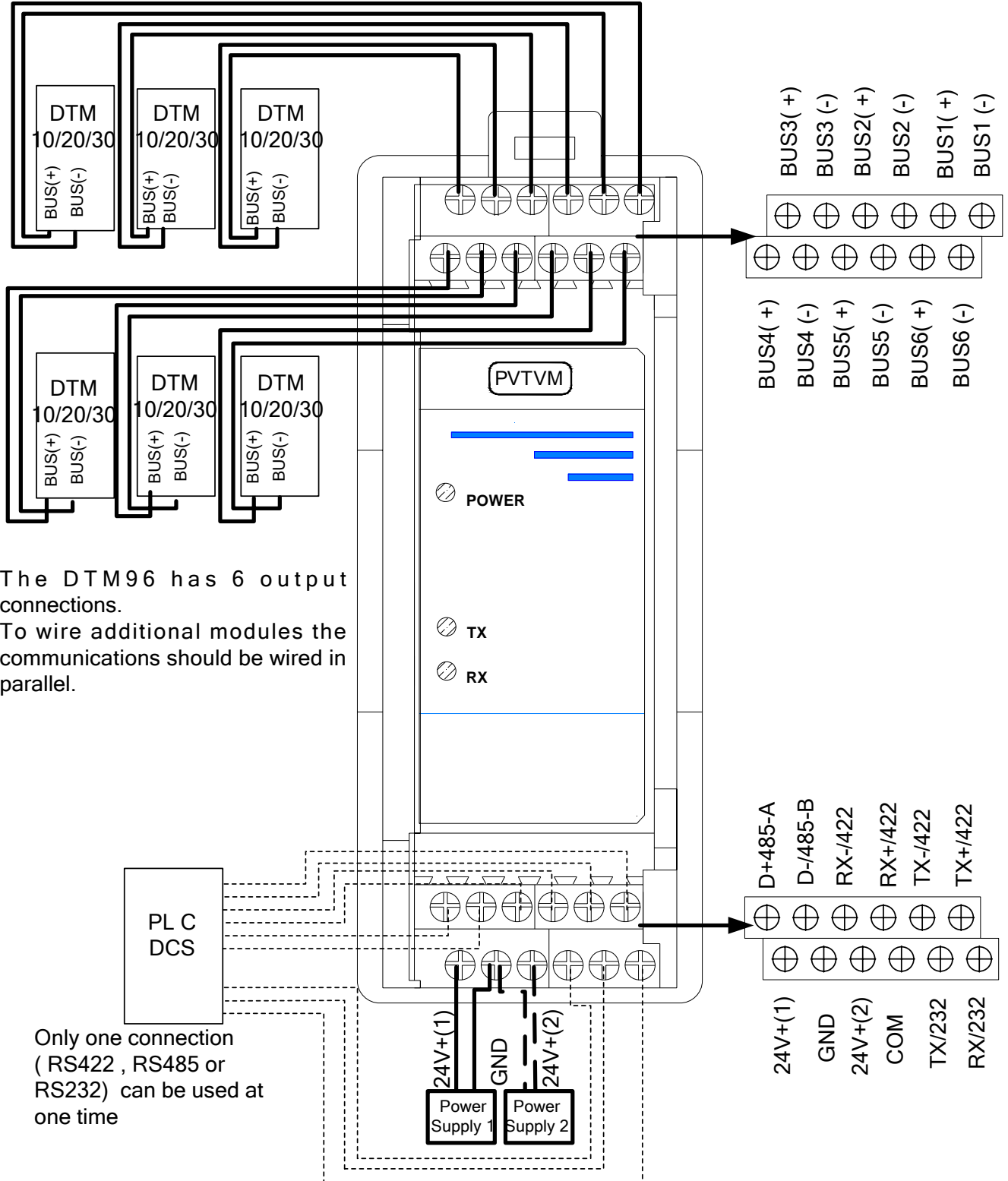* Denotes factory default.
   ** TR CU certificate is pending

Optional Accessories

TM900A

Din Rail Mounted Power Supply. It converts 100-240VAC into 24VDC and is capable of powering up to five DTM modules.

DTM96 System Installation

Installation – field-wiring diagram

The DTM96 has 6 output connections.
To wire additional modules the communications should be wired in parallel.

Only one connection (RS422 , RS485 or RS232) can be used at one time

DTM 10/20/30
BUS(+) BUS(-)

DTM 10/20/30
BUS(+) BUS(-)

DTM 10/20/30
BUS(+) BUS(-)

DTM 10/20/30
BUS(+) BUS(-)

DTM 10/20/30
BUS(+) BUS(-)

DTM 10/20/30
BUS(+) BUS(-)

PVTVM

POWER

TX

RX

PLC DCS

24V+(1) GND 24V+(2)

Power Supply 1   Power Supply 2

BUS3(+) BUS3 (-) BUS2(+) BUS2 (-) BUS1(+) BUS1 (-)

BUS4(+) BUS4 (-) BUS5(+) BUS5 (-) BUS6(+) BUS6 (-)

D+485-A D-/485-B RX-/422 RX+/422 TX-/422 TX+/422

24V+(1) GND 24V+(2) COM TX/232 RX/232

DTM-CFG Configuration and Calibration Software

DTM-CFG is the configuration and calibration software used to configure all DTM modules. DTM-CFG works with Windows XP or Windows 2000 operating system.

DTM-CFG can be connected to the DTM modules with the interface of a RS485-USB cable kit.

DTM-CFG combined with the DTM96 allows the user to remotely interface with 32 DTMs networked together in the field.

DTM-CFG Features

- ✓ **DTM Configuration**
- ✓ **DTM Calibration**
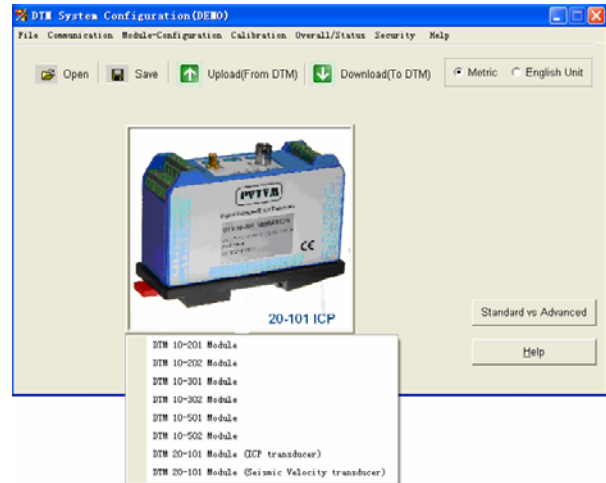
Specifications

Module Configuration:

- ✓ Module type selection
- ✓ Modbus ID address, Range
- ✓ Communication baud rate
- ✓ Auto manual search of communication port
- ✓ English or metric selection
- ✓ Password and security

Operation Configuration:

- ✓ Sensor and sensitivity selection
- ✓ Measurement unit selection
- ✓ Full-scale
- ✓ Dual-alarm set-points, time delay, latching
- ✓ Relay energized/de-energized. Relay programmed to Alert or OK
- ✓ OK set-points

Maintenance Calibration:

- ✓ ZERO calibration, SPAN calibration
- ✓ Probe linearization calibration
- ✓ Real-time overall and status display
- ✓ Record of overall and status
- ✓ Configuration parameter save as file

Order Information

DTM-CFG-K

DTM configuration and calibration software kit includes:

- ✓ DTM-CFG configuration and calibration software CD
- ✓ RS485-USB converter with cable
- ✓ User manual

DTM-CFG

DTM configuration and calibration software includes:

- ✓ DTM-CFG configuration and calibration software CD
- ✓ User manual

DTM-CAL

The DTM field calibration kit with probe calibration capability with any 5mm, 8mm and 11mm probe system.
The kit includes:

- ✓ DTM-CFG configuration and calibration software CD
- ✓ RS485-USB converter with cable
- ✓ TM0540 proximity probe field calibration kit
- ✓ User manual

Optional Accessories

RS485-USB: RS485 to USB converter with cable

RS232-USB: RS232 to USB converter with cable

DTM96: Isolated communication module

TM0540: Proximity probe field calibration kit

DTM networking and on-line condition monitoring

Display/Analysis Work Station

Display/Analysis Work Station

Display/Analysis Work Station

Ethernet

DAQ Server

DTM 96

DTM 96

DTM 96

Phase reference output

Phase reference output

Phase reference output

| DTM 10 | DTM 10 | ° ° ° | DTM 10 | DTM 501/502 |

| DTM 20 | DTM 20 | ° ° ° | DTM 20 | DTM 501/502 |

○ ○ ○

| DM 200 | DM 200 | ° ° ° | DM 200 | DTM 501/502 |

Machine Train1

Machine Train2

Machine TrainN