

Non-contact Distance Measurement System

Modular Multi-channel Distance Gaging

10DMS



FEATURES

- Modular Rack for Customized Building Block Solutions
 - Accepts Any Combination of 10 Philtec DMS Sensors
- Retro-reflective Fiberoptic Displacement Sensor Technology
 - Choice of 21 Sensor Models, RC or D Type
- Digital Output for Up To 10 Sensors thru one RS232 Port
 - Operating Software & LabVIEW™ Drivers Included
 - Ruggedized Plug-in Sensor Modules
 - Rackmount or Bench Top Stackable
 - CE Compatibility

PHILTEC

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Fiberoptic Sensors for the Measurement of Distance, Displacement and Vibration



10DMS 19" Rack Loaded

Description

The model **10DMS** is a 19" rack for powering and controlling up to 10 sensor channels. **These multi-channel Systems are intended for distance gaging of stationary or slow moving objects;** however, individual sensor channels can be queried up to 5,000 readings per second. They are equipped with Philtec's non-contact fiberoptic displacement sensors. These sensors illuminate targets with LED light and measure the intensity of light reflected back from the object under measurement. Reflectance Dependent (D) models incorporate one detector circuit. With Reflectance Compensated (RC) models, the reflected light is captured in two bundled fiber detectors. A ratiometric calculation provides the distance measurement which is independent of target reflectivity variations; i.e., **reflectance compensated.**

Designed for use with DMS sensors having digital output*, the racks can be filled with 10 Philtec DMS sensors of any model and type (RC or D). Each rack is equipped with two RS232 serial ports: one male and one female. Communication with all 10 sensors is conducted thru one RS232 port. Operating Software and LabVIEW drivers are provided. The sensors are addressable via their unique serial number. The rack can be operated individually or daisy-chained with additional racks thereby allowing communication to a larger matrix of sensors via one RS232 port.

The system can be supplied with less than 10 sensors and later upgraded to include more channels. Distance data from 10 channels can be read thru one serial port in less than 0.2 seconds; 50 channels are read in less than one second.

* DMS are microprocessor based systems with gap calibrations stored on-board. They provide direct output of distance, reflectance and amplifier temperature via RS-232 protocol. 25 calibrations for various conditions can be stored per channel.

Sensor Modules



Philtec's mini-DMS sensors are configured as plug-in modules allowing easy installation and removal.



They can be operated remotely from the racks using the auxiliary AC/DC power convertor and the adaptor Y cable shown here. Any sensor can be installed at any position in the rack.



10DMS GENERAL SPECIFICATIONS

Width	19" (482.4 mm)	
Depth	13" (330.2 mm)	
Height	5" (127.0 mm)	
Weight	11.5 lb unloaded (5.2 kg)	26.5 lb loaded w/10 channels
Input Voltage	100 to 260 VAC, 50/60 Hz	Fuse 0.400 amp time delay, 250 V, 5 x 20 mm
Input Current Usage	40 mv/channel at 120 VAC	20 mv/channel at 240 VAC
Operating Temperature	0°C to 50°C	
Output	RS232 at 19.2 kb	125 ms time to read 10 channels

The RS232 pins are standard. From a PC:

Pins 1, 7 & 9 = not connected

Pin 2 = Receiver

Pins 4, 6 & 8 = connected all together

Pin 3 = Transmitter

Pin 5 = Ground

Ordering Info

Specify "Model 10DMS". This provides the 19" rack mainframe which encases an included power supply and operates on AC power. Includes RS232 serial cable. An optional auxiliary AC/DC power supply and adaptor cable can be used to power a single sensor outside of the rack. All multi-channel systems are provided with operating software and LabVIEW drivers.

Sensors are ordered separately. Specify "mcDMS-model number-options" and the quantity desired. For example, mcDMS-RC100-BT1, qty 8.

Software

(The most current edition of DMS control software is posted at <http://www.philtec.com/firmware.htm>)

The DMS Setup and Control software opens at the **Com Port** tab.

1. Select com port

Note there is a toggle switch:

- Single Serial Number
- 10DMS Rack

2. When using a **10DMS rack**, toggle down and enter the sensor serial numbers

3. Click Open Com Port



SOFTWARE SETUP & CONFIGURATION

Use the **Configuration Tab** to setup the sensor for measurements. The sensor should be fixtured in place perpendicular to the target to be measured. Click the Title Bar of each section for instructions.

1. **Channel Select:** select the sensor channel or the sensor serial number.

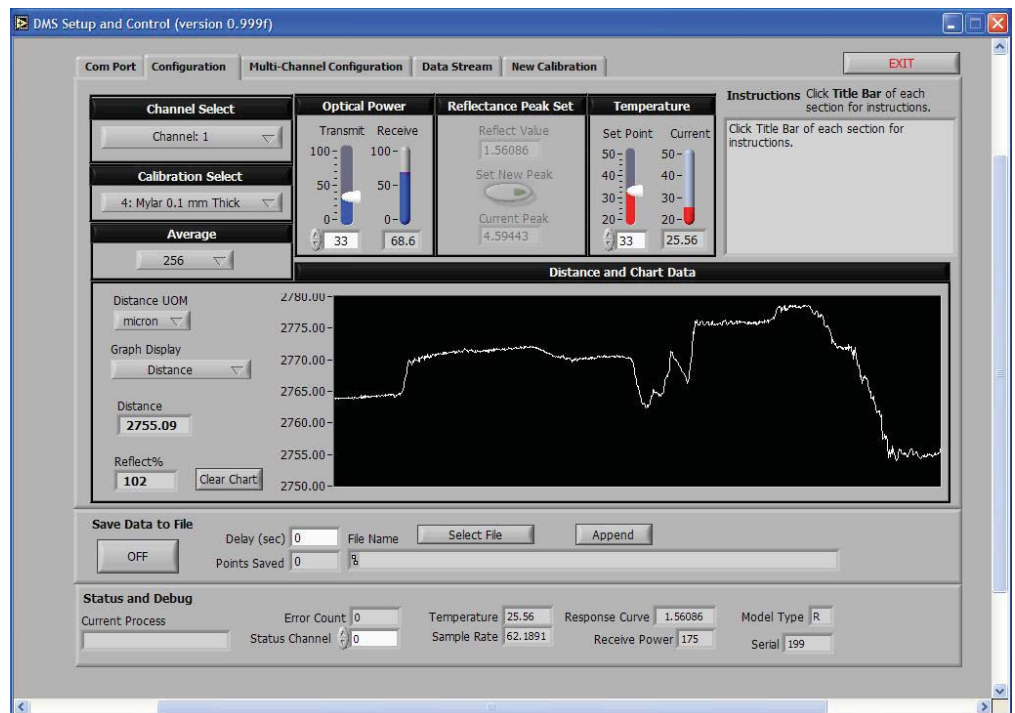
2. **Calibration Select:** choose the appropriate calibration data table.

3. Move the sensor thru its operating range and stop at the highest Receive Power.

4. At **Optical Power**, using the slide control, adjust the Transmit Power so the Peak Receive Power is maximized

5. Reset the operating gap to the desired starting point.

6. **Temperature:** Use the slide control to set the temperature of the electronics. If the heater is not needed it can be turned off (set to 0) to reduce power consumption.



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