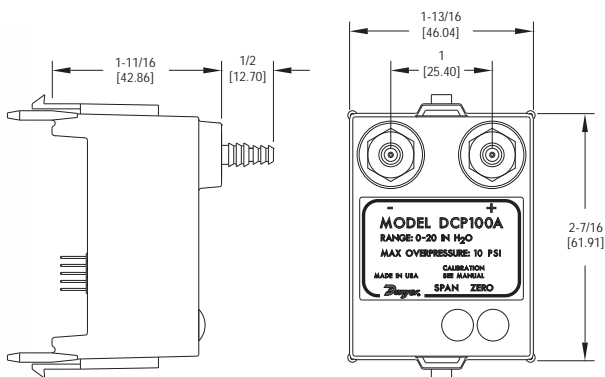




## Series DCP100A/200A Pressure Modules

## Specifications – Installation &amp; Operating Instructions



The DCP100A or DCP200A pressure modules are designed exclusively for use with the Dwyer® DCT1000 Dust Collector Timer Controller boards for on-demand cleaning requirements. These series of modules are available in 10" w.c. [2.49 kPa] or 20" w.c. [4.98 kPa] ranges, which allow for differential process pressure measurement as indicated on the display of the master controller. An isolated 4-20 mA readout channel is provided for remote pressure display. The 4-20 mA output may be wired either for use with an external power supply and indicator or using the isolated on-board 24 volt power supply to power the loop.

**SPECIFICATIONS**

**Pressure Ranges:** 10" w.c. or 20" w.c.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Pressure Limit:** 10 psi (68.95 kPa).

**Pressure Limit (differential):** 10 psi (68.95 kPa).

**Accuracy:** ±1.5% F.S. @ 73°F (22.8°C).

**Output Signal:** 4-20 mA.

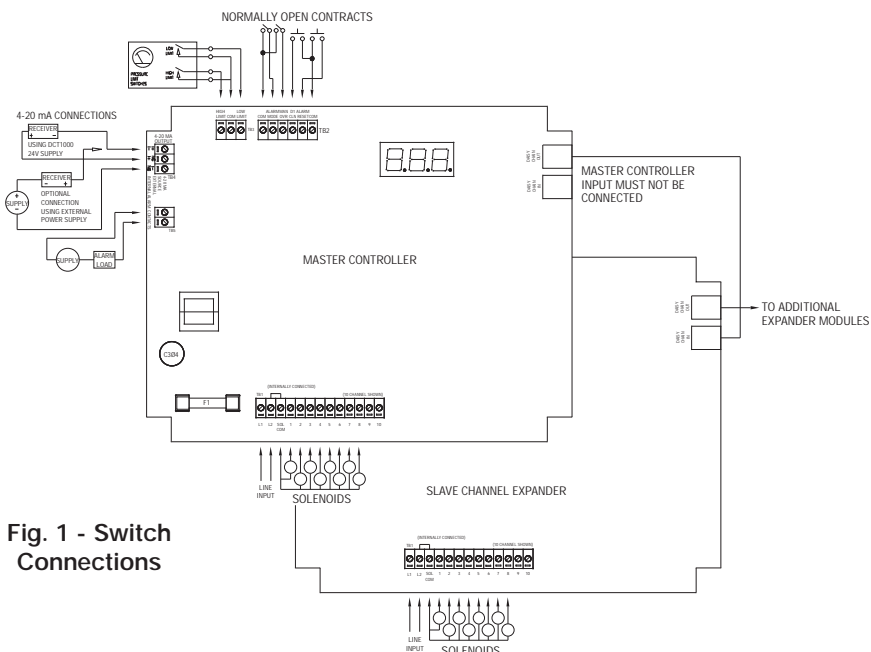
**Alarm Contacts:** 1.5A inductive load, 3A resistive load @ 30 VAC or 40 VDC.

**Process Connections:** Two barbed connections for use with 1/8" (3.18 mm) or 3/16" (4.76 mm) I.D. tubing.

**Weight:** 5.5 oz (155.9 g).

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**Fig. 1 - Switch Connections**

### 3.0 Pressure Module Maintenance 4 1.0 Installation



**Caution:** Prior to installing the DCP100A/200A please review the operating specifications carefully.

Some operating systems, especially in pneumatic conveying applications, may see static pressure or vacuum conditions that exceed the capability of the DCP100A/200A pressure module. For these conditions there are a number of alternate Dwyer Instruments, Inc. pressure products that can be used to meet your application requirements, all of which can be terminated to the Dwyer® DCT1000 Dust Collector Timer Controller. For more information on these and other Dwyer® products, please call us at (219) 879-8000, or visit us on the web at [www.dwyer-inst.com](http://www.dwyer-inst.com) or [www.dust-controls.com](http://www.dust-controls.com).

#### 1.1 Location

The system should be located in an enclosure that meets relevant safety standards and electrical codes. There are no other special orientation requirements as the pressure module is not orientation sensitive.

Care should be observed when routing the air hoses to ensure that any potential condensation or moisture will not drain into the sensor. Where heavy condensation is present, a drip loop or an in-line filter should be installed to ensure long term operation.

#### 1.2 Connections

When a pressure module is installed, the 4-20 mA process signal and the alarm relay contacts are available. The circuit may be used with the internal 24-volt power source or with an external source. In either case, the 4-20 mA circuit is isolated from ground and other signals. The alarm relay contacts are isolated, normally open contacts. Pressure connections may be made to the stepped hose barbs with either 1/8" or 3/16" I.D. tubing. The following subparagraphs describe the external switch connections. Refer to Figure 1 (above) for switch connection illustration.


#### 1.3 Pressure Module Installation

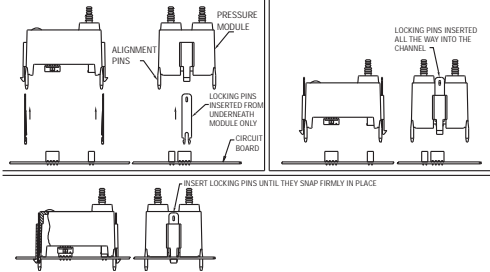
The pressure module is attached to the Master Controller using integral connectors on both units. The insertion ports for the pressure module are located in the upper

left quadrant of the DCT1000 Master Controller. The pressure module can be removed by compressing the retaining clips on each end of the module, then gently pulling the module out of the master controller board.

When inserting the module, the following procedure should be adhered to insure proper installation:

- Examine the bottom of the pressure module and note the orientation of the connectors.
- Align the module so that these connectors match the connector receptacles on the controller board.
- Orient the module with the four alignment pins over their respective mounting holes.
- Gently press the module into the connectors and snap the retaining clips on either end of the module into their slots.
- Always install and service this device with the power off and a lockout installed if required. "Hot" plugging the pressure module into an operating system may damage the system or cause the calibration parameters to be erased.

 **Caution:** Do not force the module into the connectors. Forcing the insertion may damage the connectors. Properly aligned, the module should snap into place.



### 1.3.1 Alarm Mode Switch Connection

The auto alarm reset is controlled by the alarm mode switch connection. To enable the auto alarm reset the alarm mode input must be connected to a common connection. A jumper may be used when auto alarm reset is always active. A switch may be used if there are times that the auto

alarm reset must be disabled. The switch must be an isolated contact and wired such that no connection is made between either of the wires and ground.

### 1.3.2 Alarm Reset Switch Connection

The alarm may be reset either by pressing the Alarm Reset button on the control panel or by an external switch connected between the alarm-reset terminal and one of the common terminals. The alarm reset will only operate if the pressure module is installed and the pressure has returned to a normal condition.

### 1.3.3 Connecting the 4-20 mA loop

The pressure module provides an isolated 4-20 mA output, which may be used to remotely monitor the differential pressure across the dust bags or cartridges. The connection is made on the master control module at the terminal block designated for this signal. The connection is a 2-wire configuration with the option of using either an external 15 to 35 VDC power source or using the internal 24 VDC source.

### 1.3.4 Connecting the Alarm Relay

With the pressure module installed, a relay contact is provided for controlling an external alarm. This relay is a single form-A contact. It is activated when either the high alarm threshold is exceeded, or the pressure drops below the low alarm threshold. The connection is made at the two-pin connector TB5.

## 2.0 Demand Mode using a DCP100A/200A Pressure Module

The DCT1000 system may be configured to be a self-contained on-demand control system with the installation of the DCP100A/200A pressure module. When this module is installed, the master controller detects it and automatically sets the system to an on-demand mode, enabling features associated with the pressure sensor. The following subparagraphs describe the setup and operation of these pressure related features.

## 2.1 High Limit Setup

The High Limit Setup sets the pressure at which the cleaning cycle will begin. This value may be between zero and the pressure module calibration pressure. Normally, the High Limit should be above the Low Limit. If, however, the High Limit pressure is set below the Low Limit, the cleaning cycle will begin when the High Limit is exceeded and stop when the pressure falls below the High Limit. The Low Limit in this case will have no effect. Pressing both Up and Down buttons simultaneously and holding for about four seconds will restore the factory setting for High Limit to 5.0" w.c. [1.24 kPa].

## 2.2 Low Limit Setup

The operation of the Low Limit mode is identical to the High Limit mode except that the default Low Limit pressure is 3.0" w.c. [0.75 kPa]. The upper settable value is the calibration pressure of the pressure module and the lower limit is zero. Press the Select button until the Low Limit indicator is illuminated. Use the Up and Down controls to set the limit to the desired setting. Pressing both Up and Down buttons simultaneously and holding for about four seconds will restore the factory default.

## 2.3 High Alarm Setup

The operation of the High Alarm Setup is identical to the High and Low Limit Setup. The High Alarm default is 0.0" w.c. The upper settable value is the calibration pressure of the pressure module and the lower limit is zero. Press the Select button until the High Alarm indicator is illuminated. Use the Up and Down controls to set the limit to the desired setting. Pressing both Up and Down buttons simultaneously and holding for about four seconds will restore the factory default.

## 2.4 Low Alarm Setup

The operation of the Low Alarm Setup is identical to the High and Low Limit Setup. The Low Alarm default is 0.0" w.c. The upper settable value is the calibration pressure of the pressure module and the lower limit is zero. Press the Select button until the Low Alarm indicator is illuminated. Use the Up and Down controls to set the limit to the desired setting. Pressing both Up and Down buttons simultaneously and holding for about four seconds will restore the factory default.

## 2.5 Auto Alarm Reset Setup

The Auto Alarm Reset Setup mode allows the auto alarm reset time to be selected. This value may be set between zero and 255 seconds. The factory default value is five seconds. When the auto alarm reset is enabled by shorting the auto alarm reset terminal to a common terminal, the alarm will be reset after the pressure returns to the normal range and the selected timeout period has expired.

## 3.0 Pressure Module Maintenance

The pressure module should require very little maintenance under normal operational conditions. However, periodic calibration may be desirable to assure accuracy of the readings. The module may be removed and returned to the factory for calibration.

**Still need help? Please feel free to contact one of our customer service representatives at 219-879-8000 or visit us on the web at [www.dwyer-inst.com](http://www.dwyer-inst.com) or [www.dust-controls.com](http://www.dust-controls.com). Thank you for choosing Dwyer Instruments.**