

Part Description: Pressure Transducer 100PSI, 20' lead 800-2100

Borgen Part Number: 65167

To order this part from Borgen Systems:

Phone 800-383-7509

Email: [service@borgensystems.com](mailto:service@borgensystems.com)

## CPC Pressure Transducer Specifications and Installation Instructions

This bulletin provides technical information about the pressure transducer supplied by CPC.

### Description

The pressure transducer design previously supplied by CPC, which were Eclipse transducers manufactured by Data Instruments, have been discontinued in favor of an improved transducer design. The improved transducer model is similar in all operating specifications to the Eclipse transducer and is a direct replacement.

### Cautions, Warnings, and Notices

- The new CPC transducer requires +5VDC power to operate. **DO NOT connect this transducer to +12VDC power. Doing so will damage the transducer and void the warranty.**
- Previous transducer models required installation techs to set the input type dip switch to the DOWN position on CPC input boards. The new CPC transducer requires you to set the input type dip switch UP.

### Part Numbers

Table 1 lists the part numbers for all pressure transducers currently and previously available from CPC, including the part numbers for the new transducers.

Part #	Transducer Type	Port	Status
800-2100	CPC 100PSI	1/8" Male NPT	Current
800-2200	CPC 200PSI	1/8" Male NPT	Current
800-2500	CPC 500PSI	1/8" Male NPT	Current
800-1100	Eclipse 100PSI	1/8" Male NPT	Discontinued
800-1200	Eclipse 200PSI	1/8" Male NPT	Discontinued
800-1500	Eclipse 500PSI	1/8" Male NPT	Discontinued
800-0105	Standard Transducer - 100PSI	1/4" Female SAE with Schrader Depressor	Discontinued
800-0205	Standard Transducer - 200PSI	1/4" Female SAE with Schrader Depressor	Discontinued
800-0505	Standard Transducer - 500PSI	1/4" Female SAE with Schrader Depressor	Discontinued

Part #	Transducer Type	Port	Status
800-0101	Standard Transducer - 100PSI	1/8" Male NPT	Discontinued
800-0201	Standard Transducer - 200PSI	1/8" Male NPT	Discontinued
800-0501	Standard Transducer - 500PSI	1/8" Male NPT	Discontinued

**Table 1 - Transducer Part Numbers and Types**

## Hardware Specifications

### Supply Voltage

The CPC transducer (800-2100, 800-2200, and 800-2500) requires an excitation voltage of +5 VDC. This is the same supply voltage required by the Eclipse transducer, but NOT the same as the “standard” transducers, which required +12 VDC.

*Important! Do not connect the CPC transducer to +12 VDC. Doing so will damage the transducer and void the warranty.*

### Operating Temperature Range

The CPC transducer is rated to withstand ambient temperatures from -22°F — 158°F (-30°C — +70°C), and media (refrigerant) temperatures from -40°F — 300°F (-40°C — 149°C).

In ambient temperatures from +90°F — +160°F (+32°C — +71°C), the maximum allowable media temperature is derated from +300°F (149°C) by 2° for every one degree that ambient temperature is above +90°F (+32°C).

### Output Signal

The new transducer’s output signal voltage varies from 0.5 — 4.5 VDC as the pressure varies from zero to the transducer’s maximum value. When the transducer reads a pressure that is above 110% of its maximum rating, the signal voltage will stop at ~4.9 VDC.

The maximum error between the measured pressure and the pressure signified by the output signal voltage is ±1.5%. This means the output signal will have a maximum error of ±1.5 PSI for the 100PSI transducer, ±3 PSI for the 200PSI transducer, and ±7.5 PSI for the 500PSI transducer.

### Fittings

All transducer models have male 1/8" NPT fittings. This is the same fitting used by the Eclipse pressure transducer, so using it in place of an Eclipse will not require any access fitting replacement. If replacing a standard transducer with 1/4" SAE port and Schrader depressor, the valve fitting will have to be replaced by a female 1/8" NPT port.

*Note: On request, CPC can supply replacements for “standard” transducers equipped with a female 1/4" SAE port with Schrader depressor. Contact CPC if you require such a transducer.*

## Transducer Cable

The CPC transducer is supplied with a 20' cable for connecting the transducer to +5VDC power and an input board point. The cable plugs in to the top of the transducer using a Packard Metri-Pack 12065287 cable connector. This connector also fits the discontinued Eclipse pressure transducer.

## Overpressure, Burst Pressure, and Vacuum Pressure

Table 2 gives the overpressure, burst pressure, and vacuum pressure PSI ratings for each CPC transducer model.

The overpressure rating is the PSI which, when exceeded, will cause the transducer to function incorrectly.

The burst pressure rating is the highest PSI the transducer can withstand without leaking or breaking.

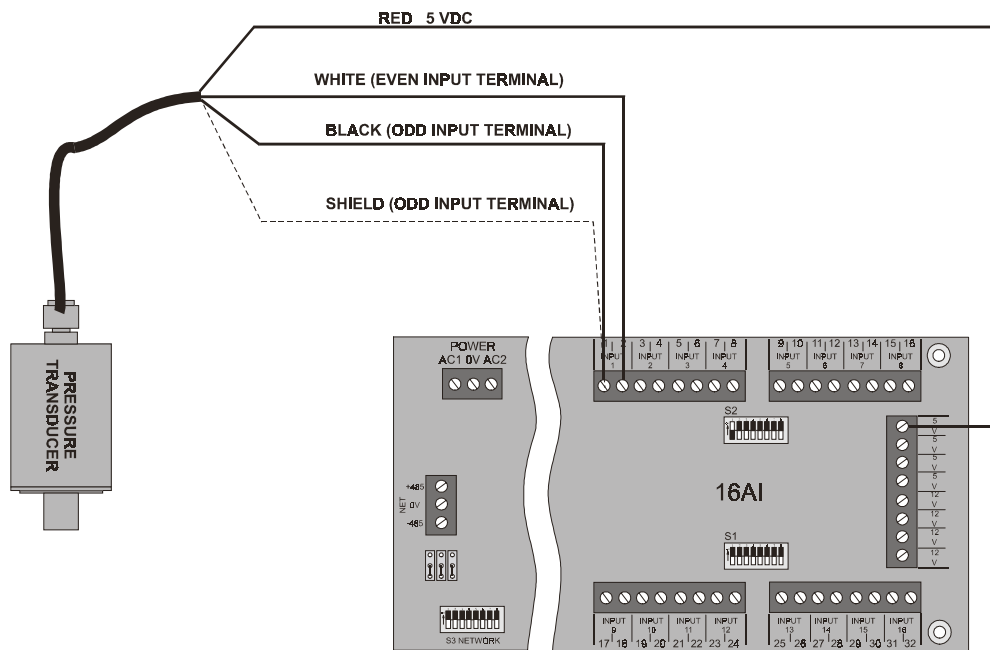
The vacuum pressure is the amount of vacuum the transducer can withstand before the transducer starts to read incorrectly. *Note: no damage will be done to the transducer by any amount of applied vacuum. There is no need to close transducer valves or remove transducers when applying vacuum.*

Model	Overpressure	Burst Pressure	Vacuum
CPC 100PSI	300 PSIG	1000 PSIG	-10 PSIG
CPC 200PSI	400 PSIG	1000 PSIG	-14.7 PSIG
CPC 500PSI	1000 PSIG	2500 PSIG	-14.7 PSIG

**Table 2 - Overpressure, Burst Pressure, and Vacuum Ratings**

## Installation

1. Wrap the transducer pipe fitting with Teflon tape to ensure a tight seal.
2. Screw the transducer on to the access valve. Tighten by using a wrench on the hex nut above the fitting. Do not use the transducer casing to apply torque.
3. Attach the connector of the cable harness to the port at the top of the transducer.
4. Connect the cable harness wires to the 16AI or 16AIE board as shown in *Figure 1*. **If connection to the input board requires more than the 20' of wire included with the cable harness, use Belden #8771 (shielded, 3 conductor, 22AWG) or equivalent to extend the cable.**
5. On switch S1 or S2 on the 16AI or 16AIE, set the input dip switch rocker corresponding to the input number to the UP position. *This is different from the required input dip switch setting for all previous CPC transducers.* If replacing an old pressure transducer with the new CPC pressure transducer, you must change the input dip switch setting from DOWN to UP.



26513044

*Figure 1 - Pressure Transducer Installation*

## Replacing Eclipse Transducers with New CPC Transducers

If the CPC transducer will be replacing an Eclipse transducer, no extra wiring is required if the Eclipse was already connected to an input board.

1. Close the pressure transducer valve.
2. Remove the connector from the top of the Eclipse transducer.
3. Remove the old pressure transducer and replace it with the CPC pressure transducer. Be sure to wrap the transducer pipe fitting with Teflon tape to ensure a tight seal. Tighten by using a wrench on the hex nut above the fitting. Do not use the transducer casing to apply torque.
4. Plug the old cable into the new transducer.

## Controller Programming

When setting up pressure transducer inputs in Einstein RX or REFLECS RMCC refrigeration control systems, set the sensor type to “Eclipse - 100PSI”, “Eclipse - 200PSI”, or “Eclipse - 500PSI.”

## Pressure Transducer Output Signal Voltages

Table 3 lists the transducer output voltages and their corresponding pressure readings.

Transducer Voltage	Pressure Value - 100PSI Transducer	Pressure Value - 200PSI Transducer	Pressure Value - 500PSI Transducer
0.5 V	0 PSI	0 PSI	0 PSI
0.7 V	5 PSI	10 PSI	25 PSI
0.9 V	10 PSI	20 PSI	50 PSI
1.1 V	15 PSI	30 PSI	75 PSI
1.3 V	20 PSI	40 PSI	100 PSI
1.5 V	25 PSI	50 PSI	125 PSI
1.7 V	30 PSI	60 PSI	150 PSI
1.9 V	35 PSI	70 PSI	175 PSI
2.1 V	40 PSI	80 PSI	200 PSI
2.3 V	45 PSI	90 PSI	225 PSI
2.5 V	50 PSI	100 PSI	250 PSI
2.7 V	55 PSI	110 PSI	275 PSI
2.9 V	60 PSI	120 PSI	300 PSI
3.1 V	65 PSI	130 PSI	325 PSI
3.3 V	70 PSI	140 PSI	350 PSI
3.5 V	75 PSI	150 PSI	375 PSI
3.7 V	80 PSI	160 PSI	400 PSI
3.9 V	85 PSI	170 PSI	425 PSI
4.1 V	90 PSI	180 PSI	450 PSI
4.3 V	95 PSI	190 PSI	475 PSI
4.5 V	100 PSI	200 PSI	500 PSI

**Table 3 - Voltage to Pressure Chart for CPC Transducers**