


Intelligent, AC-Input, Pulse Cleaning of Bag House Dust Collectors

Models DNC-T2310 and DNC-T2320

FEATURES

- On-board differential pressure sensor
- 4 - 20 mA output for DP
- 8 character alpha-numeric display
- Microprocessor based control for stable timing from -40°C to 65°C
- **Enhanced timer option:** monitor additional devices; record dust collector data; network timers together remote network monitor; remote network control
- RS232 port for remote monitor and control
- Automatic output setup capability
- Expanded cycle mode allows additional dust collector controllers to expand output capabilities
- High pressure alarm indication
- Output fault detection
- Alarm output contacts
- Alarm input sensors
- **Pulse time:** line synchronized to eliminate 8 ms triac turn off variation per output
- 10 A 400 V output triacs for maximum protection against output shorts; 200 VA load rating
- Conformally coated for protection against vibration, humidity, and contamination
- **Metal chassis provided:** for mounting directly into nema 4 box
- Timer functionally tested to eliminate field failures
- **Input protection:** 30 joule metal oxide varistor
- **One year warranty:** warranted to be free from defects in materials or workmanship for one year from date of manufacture
-  File #E65038

Models T2310 and T2320 are microprocessor-based bag house filter controllers which combine a ten or twenty output sequencer with a solid state differential pressure sensor. This offers a small, low-cost replacement to the separate solid state sequencer and pressure gauge combination most often used in on-demand pulse jet cleaning systems. These controllers will sense the pressure difference across the filters of a bag house and initiate a cleaning

cycle when the filters start to impede the air flow. When the pressure drops to normal the controller will stop cycling.

Standard Operating Logic: The timers can operate in the following modes:

- **Auto output:** only configured outputs will be pulsed. Output faults will be detected and indicated.
- **Manual output:** outputs will recycle after last output used.
- **Output step:** a single cleaning pulse can be initiated by pressing the output step key regardless of pressure input.
- **Continuous cycle:** controller will cycle indefinitely when the bypass/cycle down input is shorted.
- **Cycle down:** the outputs will be pulsed through a user selected number of complete cycles when the bypass/cycle down input is shorted. This cycle will occur regardless of pressure input.
- **Expanded output mode:** controller will cycle to output #10 or #20, then will initiate an extended output mode via the alarm input and output terminals to NCC's DNC-T2000 series dust collector controllers. This will facilitate systems which require greater than 10 or 20 outputs.

Standard Timer Operation Status

Indication: The Timer can show the following information on its 8-character alpha-numeric display during normal operation:

- DP from 0" to 15" water column
- High or Low DP Alarms
- Solenoid Fault Conditions
- Current Output being Pulsed
- Auxiliary Alarm Input Closures

Upon occurrence of any alarm event, the alarm status is reported on the display along with the output number that was pulsed during the time of the event.

- **Alarm Outputs:** The isolated Alarm Output contacts will close for alarm conditions such as output faults, high pressure alarm, warm-up failure, etc. During an alarm condition, a corresponding message is displayed.
- **Alarm Input:** A closure across the Alarm Input terminals will be indicated on the display as well as initiate the Alarm Output.



In addition to the standard operation of the T2310 and T2320, an enhanced operation option is available with the use of the DNC-T2300-I/O Remote Input/Output module in conjunction with the DNC-T2300-DSP Remote Annunciator Panel. The T2310 and T2320 Timers along with the DNC-T2300-I/O constitutes the Enhanced Timer system which allows the user to monitor and record the data parameters associated with a dust collector system. This system can range in size from 1 to 255 dust collectors, all reporting to a central location, the DNC-T2300-DSP.

Enhanced Timer Operation

Status Indication: The Timer can show the following information on its 8 character alpha-numeric display during normal operation:

- DP from 0" to 15" water column
- High or Low DP Alarms
- Solenoid Fault Conditions
- Current Output being Pulsed
- Auxiliary Alarm Input Closures
- DNC-T2300-I/O Analog Input Status
- DNC-T2300-I/O Alarm Input Closures

Upon occurrence of any alarm event, the alarm status is reported on the display along with the output number that was pulsed during the time of the event.

4-16 DUST COLLECTOR CONTROLS

SPECIFICATIONS

FACTORY DEFAULT SETTINGS

Lo Pressure = 2" water column
HI Pressure = 4" water column
Alarm Pressure = 14" water column
Output Quantity = 10
Off Time = 15 seconds
On Time = 0.10 seconds
Output Configuration = Manual
I/O Expansion = No

INPUTS

Voltage: 105 -135 VAC, 50/60 Hz.
Maximum Ratings at 135 VAC Input Voltage:
 Power Consumption: 10 VA, without loads

DNC-T2310:

Bypass Switch Open Circuit Voltage: 24 VDC
 Bypass Switch Short Circuit Current: 4.3 mA
 Alarm Inputs 1-3:
 Open Circuit Voltage: 24 VDC
 Short Circuit Current: 4.3 mA

DNC-T2320:

Bypass Switch Open Circuit Voltage: 24 VDC
 Bypass Switch Short Circuit Current: 4.3 mA
 Alarm Inputs 1-3:
 Open Circuit Voltage: 24VDC.
 Short Circuit Current: 4.3 mA
 Auxiliary Input #4: 90-135 VAC, 50/60 Hz;
 6.6 mA at 135 VAC

AIR PRESSURE MEASUREMENT

Sensor Type: Silicon piezoresistive transducer with dual inlets

Measurement Range: 0.0 to 15.0" of water

Accuracy: ±2% of full scale at 25°C ±6% of full scale over temperature and voltage range

Maximum Continuous Pressure: 10 psi

DISPLAY

Type: 8-character, 16-segment vacuum fluorescent display; characters .2" high, alpha-numeric

TIMING:

Solenoid ON Time Range: .01-.50 sec.

Solenoid OFF Time Range: 7 -999 sec.

Timing Accuracy: -2 ms, +10 ms or ±1%, whichever is greater; Solenoid ON Time is synchronized to the AC line

OUTPUTS

Maximum Solenoid Output: 200 VA or W at max. duty cycle

Solenoid Output Voltage: Input voltage 2.5 VAC at 200 VA load

Solenoid Output Type: Solid state triac

Solenoid Output Short Circuit Protection:

3 AG fast acting
 120 V units: 3 A/250 VAC fuse
 240 V units: 1.5 A/250 VAC fuse

DNC-T2310:

Alarm Output Type: 1-FORM A relay contact
 Alarm Output Rating: 3 A at 120/240 VAC

DNC-T2320:

Alarm Output Type: 1-FORM A relay contact
 Alarm Output Rating: 3 A at 120/240 VAC
 Aux. Output #4 Type: 1-FORM A relay contact
 Aux. Output #4 Rating: 3 A at 120/240 VAC

Current Loop:

Type: 4 - 20 mA current loop, current is sourced by the controller. Signal represents 0 to 15 inches of differential pressure (DP)
 Accuracy: ±.3 mA of displayed pressure

SERIAL COMMUNICATIONS

Type: RS232

Terminal Emulation: ANSI VT100

Mode: 9600 Baud, 8-Data Bits 1-Start Bit 1-Stop Bit, X ON - X OFF, No Parity

Connector: 9-Pin male IBM compatible D-SUB connector

ENVIRONMENTAL

Operating Temperature Range: -40° to 65°C

Environmental Protection: Conformal coating for humidity and vibration

Contact factory for additional information

ORDERING INFORMATION

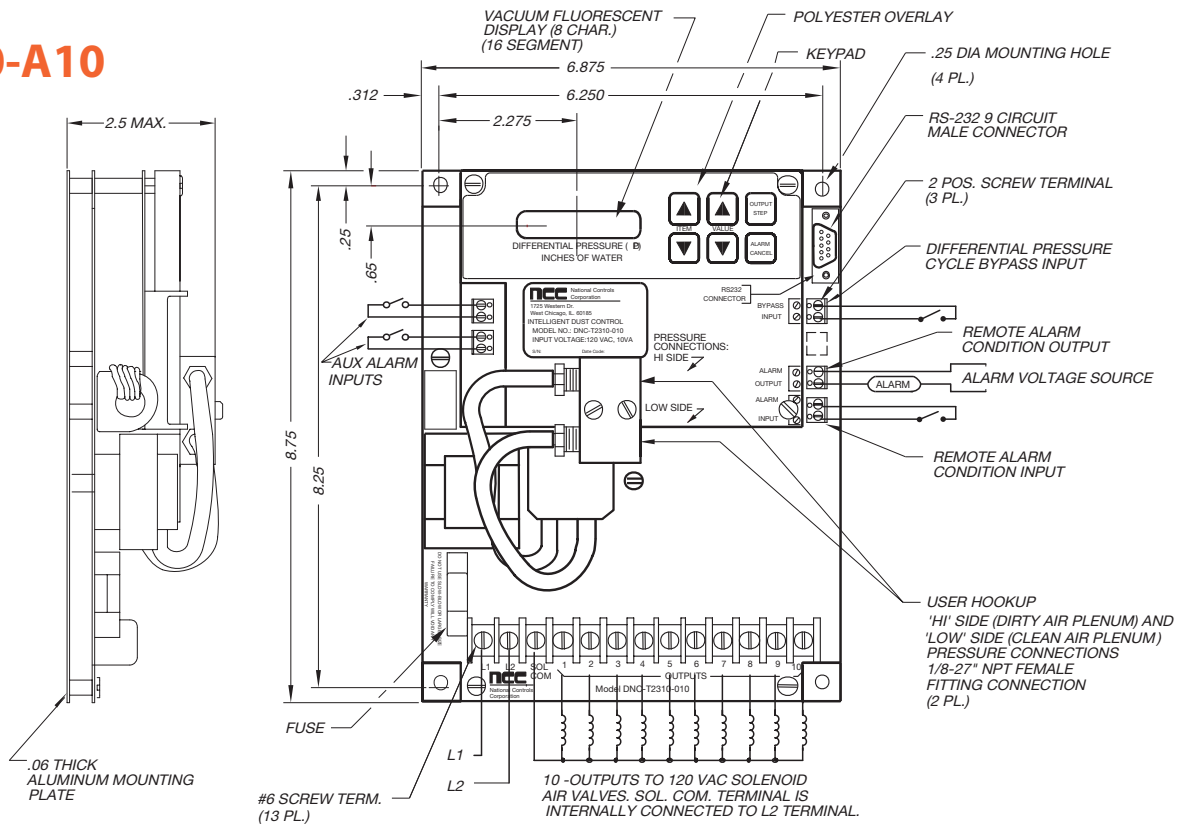
OUTPUTS	DESCRIPTION	AUX. INPUTS	INPUT VOLTAGE	OFF TIME	PART NUMBER
10	4-20 mA Loop	3	105 to 135 VAC	7 to 999 sec.	DNC-T2310-A10
10	4-20 mA Loop and 24 hr. clock	1	105 to 135 VAC	7 to 999 sec.	DNC-T2310-B10
10	4-20 mA Loop	3	210 to 270 VAC	7 to 999 sec.	DNC-T2310-A220
10	4-20 mA Loop and 24 hr. clock	1	210 to 270 VAC	7 to 999 sec.	DNC-T2310-B220
20	4-20 mA Loop	4*	105 to 135 VAC	7 to 999 sec.	DNC-T2320-A10
20	4-20 mA Loop and 24 hr. clock	2*	105 to 135 VAC	7 to 999 sec.	DNC-T2320-B10
20	4-20 mA Loop	4*	210 to 270 VAC	7 to 999 sec.	DNC-T2320-A220
20	4-20 mA Loop and 24 hr. clock	2*	210 to 270 VAC	7 to 999 sec.	DNC-T2320-B220
10	4-20 mA Loop in NEMA 4X box	3	105 to 135 VAC	7 to 999 sec.	DNC-T2310-KIT
20	4-20 mA Loop in NEMA 4X box	4*	105 to 135 VAC	7 to 999 sec.	DNC-T2320-KIT

ACCESSORY	DIMENSIONS	PART NUMBER
NEMA 4 Enclosure - Steel	10" x 8" x 4"	BOX-A1008-CHNF
NEMA 4 Enclosure - Steel	12" x 10" x 5"	BOX-A1210-CHNF
NEMA 4 Window Enclosure - Fiberglass	12" x 10" x 6"	BOX-A1210-CHSC
Pilot Lamp	NEMA 4 Rated Red Light	ASL-00RED-NEMA-4
ON/OFF Switch	NEMA 4 Rated w Legend Plate	MSW-0DPST-001

* When unit is configured for expanded mode operation, input #4 is not available

AMETEK NCC offers NEMA 4 type enclosures for mounting our controls. These enclosures are made of heavy gauge steel or fiberglass and have a continuous hinge cover. All seams are continuously welded. The finish is gray hammer-tone enamel inside and out, over phosphatized surfaces for steel units, smooth gray finish for fiberglass units.

**Model
DNC-T2310-A10**



**Model
DNC-T2320-A10**

