Four line backlit LCD

GOYEN PRECISION P2

TOTAL DUST COLLECTOR CONTROL SYSTEMS

200 OUTPUT DEMAND CONTROLLER

PENTAIR ENVIRONMENTAL SYSTEMS

GOYEN PRECISION P2

The Goyen Precision series dust collector cleaning systems controller has a unique modular format that allows a simple Sequential Mode controller to be easily upgraded to Enhanced Differential Pressure Mode control, analog and digital I/O, and full SCADA and DCS integration.

Goyen's Precision controller grows with the demands of yours and your customer's business.

PRODUCT DESCRIPTION

This new generation cleaning system controller is presented as an easily configurable master plus expansion card platform.The master controller has 10 on-board outputs, which may be expanded to 200 outputs total through the connection of up to nineteen 10 output expansion cards. All outputs feature individual push-button manual triggers and LED lights.

The expansion cards are available with compact push-in terminals or large screw-terminal types.

The Continuous Mode interface gives dependable and familiar reverse pulse cleaning control on a timed basis.The electrical on time ranges from 30 to 500 ms, with a pause between pulses of 1 to 999 seconds.

The Enhanced Demand Mode interface provides easy cleaning systems control flexibility.

The P-2 interface provides:

• Demand cleaning on the basis of high and low pressure limits.

• Demand cleaning on the basis of a high point and a selectable % pressure drop.

• Selection of displayed pressure units (kPa, Pa, mm H_2O, inches H_2O, mm Hg).

• Minimum pulse rates while in demand mode.

• A selection of pre-programmed cleaning patterns to minimise dust re-entrainment, while eliminating spaghetti wiring.

• Configurable filter pre-coating settings.

• Blowdown cycles on automatic basis or hardwired to the fan circuit.

• A tube cleaner can be optionally specified to ensure pressure lines to the integrated pressure transducer remain clear within dusty environments.
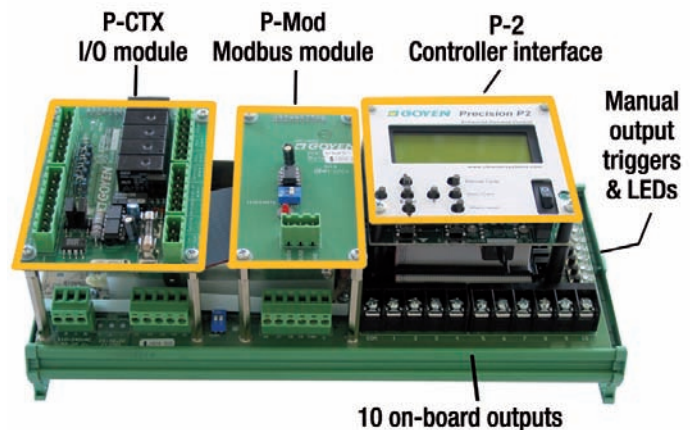
P-2DC-CTX-MOD
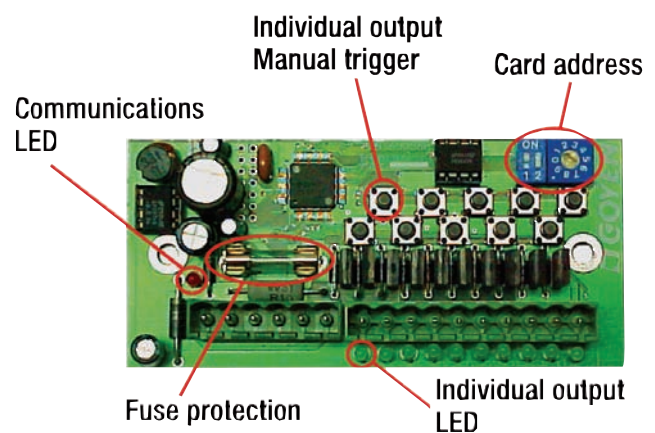
Compact format expansion card, PS-C

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- A clear back-lit LCD display, viewable from a wide range of angles.
- Audible button press confirmation.
- 5 languages;English, German, Italian, French, Spanish.
- Power out memory retention.
- Scrolling display during operation showing all parameter settings.
- Automatic detection of connected slaves, solenoids, and communications modules on start-up.
- Hour and cycle counts.
- Factory defaults restore.

ALARMS

Alarms include:

- Open circuit and closed circuit solenoid failure detection and identification
- Service alarms at 100K, 500K and 950K cycles
- Watchdog alarm
- Insufficient power
- Circuit over temperature
- High dP alarm
- Auxiliary alarm
- Low tank pressure (when connected to a pressure transmitter).

An alarm delay of up to 255 seconds can be applied, and the alarm may be reset either at the controller interface or remotely via the P-CTX or P-MOD communications cards.

MODBUS INTERCONNECT MODULE

Protocol – MODBUS two wire RS485 half duplex

**Comms rate** – 9600 baud, 1 stop bit, 8 data bits, no parity

Terminating resistor – DIP switch slectable terminating resistor if the Master is on the end of a MODBUS network.

| READ ONLY DATA	WRITE ONLY DATA	READ/WRITE DATA	
Instantaneous dP	Restore factory defaults	Language	Blowdown mode
Cycling status	Hour counter reset	Electrical on-time	Tube cleaner off/on
Power status	Reset cycles	Electrical off-time	Tube cleaner on time
Watchdog alarm	Reset service alarm	Pressure units	Tube cleaner off time
Coil failure	Reset general alarm	Demand cleaning mode	Enhanced Demand Mode
Service alarm		High dP limit	Hour counter value
Low header pressure alarm		Low dP limit	Number of expansion cards
Auxiliary alarm		DP range	Number of outputs on
		Alarm delay	expansion cards
		High dP alarm	Cycle count
		Filter pre-coating mode	Skip outputs (0–10)
		Pattern cleaning mode	Activate output address ##–##
		Number of blowdown cycles	Run
		Automatic blowdown cycle setting	Stop

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TOTAL DUST COLLECTOR CONTROL SYSTEMS

Basic Configuration
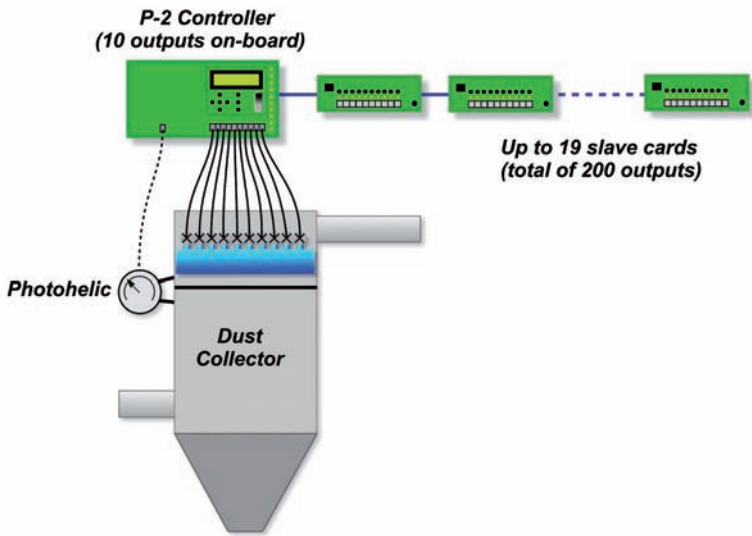
I/O Configuration
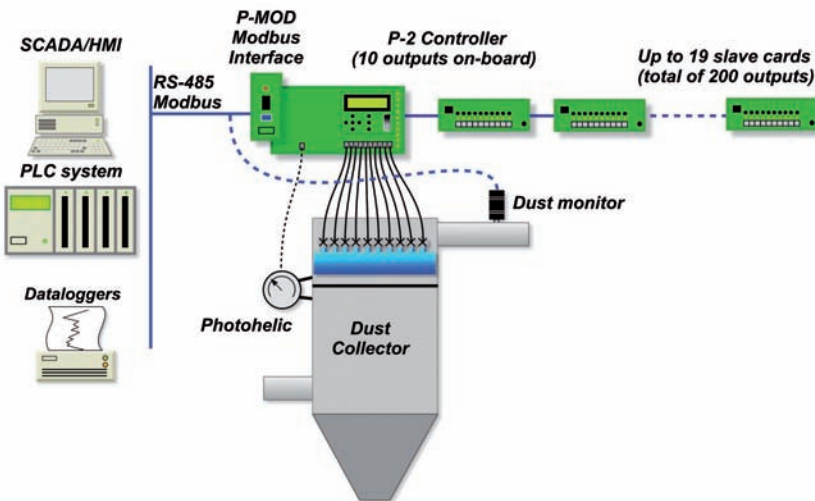
COMMUNICATIONS

The Precision controller may be expanded with an I/O card (P-CTX) or a two wire half-duplex RS485 card programmed with the Modbus protocol (P-MOD).

P-CTX allows control of the Precision controller from devices such as programmable logic controllers and remote control panels.P-CTX also provides a 4–20 mA output to allow remote monitoring or logging of the instantaneous system differential pressure. An auxiliary input allows the connection and monitoring of additional diagnostic sensors such as hopper levels.

P-MOD allows full integration of Precision into SCADA/HMI systems. With each output individually addressable and all controller events accessible, total DCS integration with particulate, gas monitoring devices and process controls is possible.

ENCLOSURE CHOICES

The Precision controller is available as either standard DIN-mounted boards or for incorporation into your own control cabinets, in painted steel IP65 enclosures, or stainless steel IP65 enclosures.

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ELECTRICAL SPECIFICATION

Supply power (input)/Terminal output voltage (output)

For AC in DC out boards (with maximum load): Input: 110–240 V AC 50/60 Hz ±10%, fuse protected to 260 V AC Output: 24 V DC at 60 W (2.5 A) for master and expansion cards.

For AC in AC out boards (with maximum load): Input: 100–130 V AC and 210–260 V AC 50/60 Hz, fuse protected to 260 V AC Output: Max rating at 120 V AC +10%, 310 W (2.36 A), Max rating at 240 V AC +10%, 350 W (1.34 A).

For DC in DC out boards (with maximum load): Input: 24–48 V DC ±10%, fuse protected transient suppression to 60 V DC spikes Output: 24 V DC at 60 W (2.5 A) for master and expansion cards.

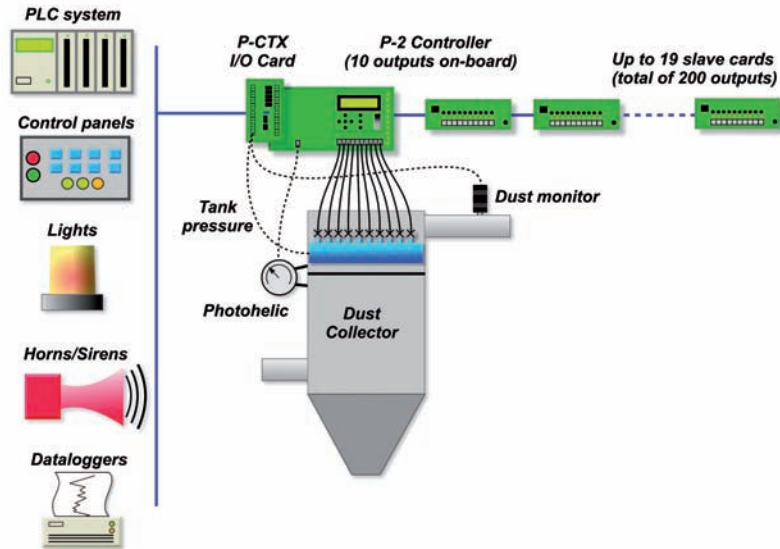## MECHANICAL/ENVIRONMENTAL SPECIFICATION

Enclosure type (optional) – Painted steel or stainless steel

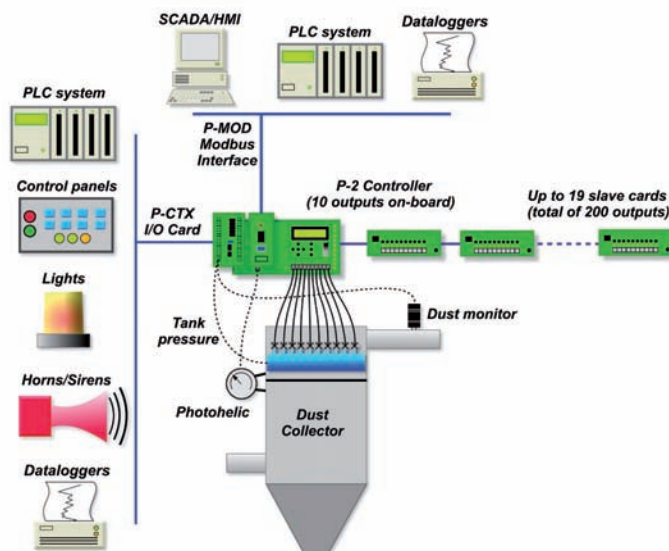**Operating/Storage temperature range** – 0–70°C (32–158°F)

Vibration – Reliable operation up to 55 Hz, 1.5 mm double amplitude

Mechanical shock – Shock up to 100 m/s^2

Distributed Control Configuration

Distributed Control and I/O Configuration

PRODUCT SPECIFICATION
Master and Expansion Cards

INTERFACE	PRECISION P-2
4 line back-lit LCD display	✓
Tactile input buttons	✓
Individual output LEDs	✓
Manual output trigger for each terminal (100ms duration) [for AC/DC, DC/DC only]	✓
Manual cleaning cycle trigger	✓
Scrolling display showing system settings during operation	✓
English, German, Italian, Spanish, French language support	✓
Pressure units (kPa, Pa, inWG, mmWG, mmHG)	✓
Menu lockout (security code)	✓
Slave Communications LED	✓
Power LED & power switch	✓
START-UP	
Automatic detect connected terminals	✓
Automatic detect connected expansion cards	✓
System self diagnostic on start up	✓
Automatic power supply detection	✓
12 month memory retention without power	✓
Factory defaults reset	✓
OPERATION	
Hour count	✓
Cycle count with service alarms	✓
Electrical on-time selection (30 ms to 500 ms)	✓
Electrical off time selection (1s to 999s)	✓
Fan Contact Blowdown Cycles	✓
Automatic Blowdown Cycles	✓
Sequential Mode Cleaning	✓
Demand Mode Cleaning (set high and low dP limits)	✓
Demand Mode Cleaning (set high limit and dP range)	✓
Enhanced Demand Mode Cleaning (minimum pulse rate)	✓
Pre-programmed Pattern Mode Cleaning	✓
Filter precoating function	✓
TERMINALS AND CONTACTS	
10 × AC/DC solenoid outputs on Master suits wires from 12–22 AWG (0.5 to 2.5 mm²)	✓
Fan contacts	✓
Auxiliary pressure gauge contacts	✓
Auxiliary alarm contact (example to siren or light)	✓
Tube cleaner contacts	✓

INTERFACE	PRECISION P-2
2 wire, half duplex RS485 Master/Slave communication	✓
Up to 19 expansion cards connected	✓
Large format expansion card support	✓
Compact format expansion card support	✓
ALARMS	
Coil failure (open circuit)	✓
Coil failure (closed circuit)	✓
Service alarm (100 K, 500 K, 950 K cycles)	✓
Watchdog alarm	✓
Insufficient power pre-warning	✓
Low tank pressure (when connected to pressure transducer)	With PLC Interconnect
High dP alarm	✓
Auxiliary alarm	With PLC Interconnect
Alarm delay (0 to 255s)	✓

STANDARD ENCLOSURE DETAILS (DIMENSIONS IN MM)
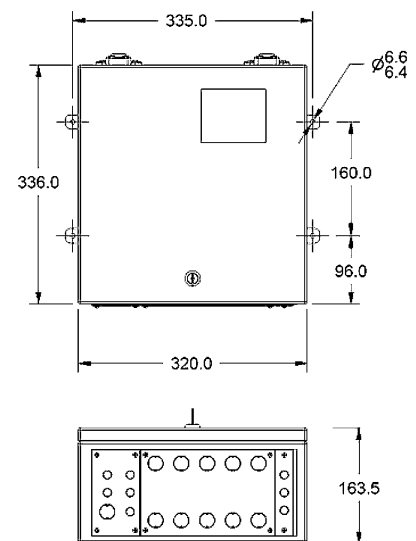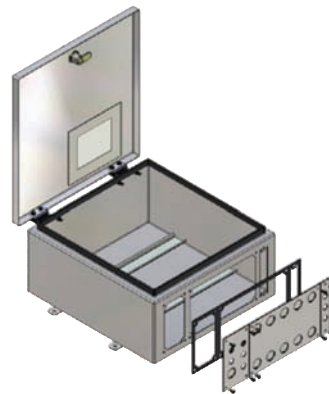
I/O MODULE (P-CTX)

DIGITAL IN	
Demand/Continuous mode contact	Allows remote switching between demand and sequential cleaning modes when Combined with Precision P-2
Auxiliary contact	Allows monitoring of other devices in the installation, for example tribo-electric probes
Manual cycle contact	Allows remote activation of the manual cleaning cycle feature
Low header pressure contact	Allows the installation of a low pressure switch on the cleaning system pressure vessel
Service alarm reset contact	Allows remote resetting of the service alarm
General alarm reset contact	Allows remote resetting of coil failure, low header pressure, high dP, and auxiliary alarms

DIGITAL OUT	
Tube cleaner contact	Allows the installation of Goyen's tube cleaning device.Useful to clear lines running to remote pressure switches or dP gauges mounted to the dust collector.
Power contacts	Allows remote monitoring of the power status of the controller.
Cycling contacts	Allows remote monitoring of the controller status with regards to cycling or paused.
Watchdog contacts	Allows remote monitoring of the pulse controller's heartbeat.
Coil failure alarm contacts	Allows remote notification that a coil failure has occurred.
Service alarm contact	Allows remote monitoring of service alarm condition.
High dP alarm contact	Allows remote monitoring of a high dP alarm condition.

ANALOGUE OUT	
4–20 mA Instantaneous dP contacts	Allows remote monitoring of the instantaneous dP of the system.These are powered contacts.

HOW TO ORDER
Examples
P-2DCT-CTX-SS:

24 to 48 VDC input power demand master, with tube cleaner and I/O card in a stainless steel enclosure.

Interfaces, communications cards, and expansion cards may be separately ordered as:

PS-L: Large 10 station expansion card – DC output

PS-LA: Large 10 station expansion card – AC output (use with AA interface only)
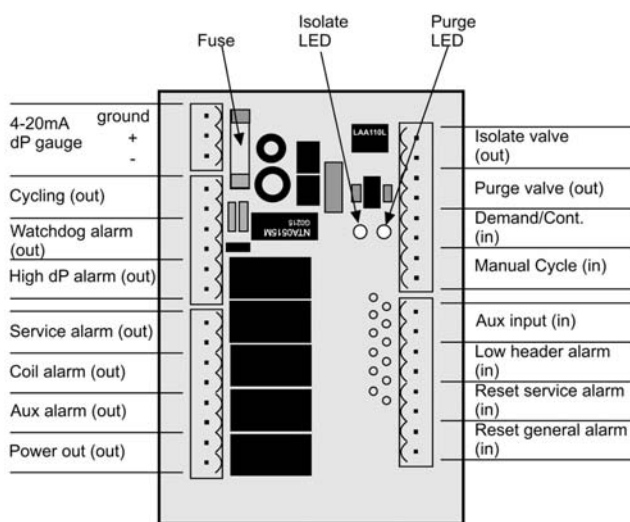
PS-C: Compact 10 station expansion card – DC output

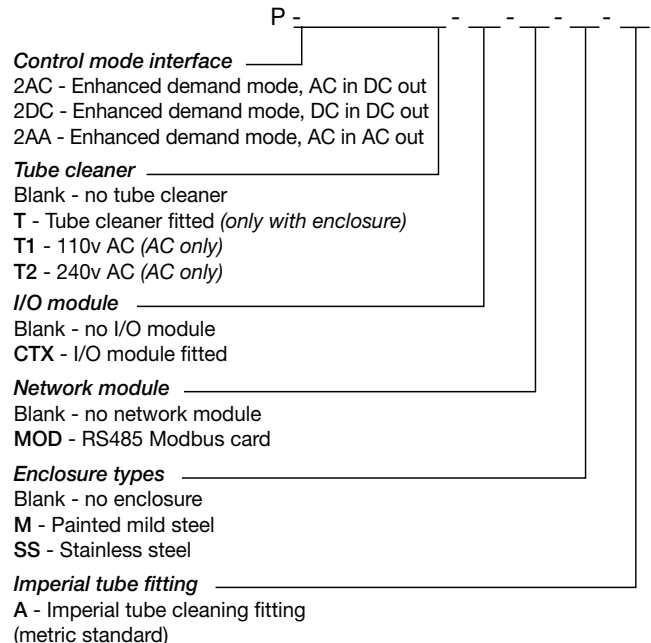PS-CA: Compact 10 station expansion card – AC output (use with AA interface only)

P-MOD: Modbus RS485 communications card

P-CTX: Digital/Analog I/O card

P-2: Enhanced Demand Mode interface only (for in-field upgrades)

P-CTX Terminal Layout

P - ___ - _ - _ - _ - _

Control mode interface
2AC - Enhanced demand mode, AC in DC out
2DC - Enhanced demand mode, DC in DC out
2AA - Enhanced demand mode, AC in AC out

Tube cleaner
Blank - no tube cleaner
T - Tube cleaner fitted *(only with enclosure)*
T1 - 110v AC *(AC only)*
T2 - 240v AC *(AC only)*

I/O module
Blank - no I/O module
CTX - I/O module fitted

Network module
Blank - no network module
MOD - RS485 Modbus card

Enclosure types
Blank - no enclosure
M - Painted mild steel
SS - Stainless steel

Imperial tube fitting
A - Imperial tube cleaning fitting (metric standard)

PENTAIR

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