



Description

The LONMARK[®] certified Basic Predator[®] Variable Air Volume/Constant Volume (VAV/CV) Controller with integrated Siemens GDE actuator provides direct digital control of pressure-independent, variable air volume, single duct VAV/CV, and constant volume zone boxes. The predator VAV/CV Controller with actuator is designed to reside on a LONWORKS[®] network, providing seamless interaction with all LONMARK products. Predator with the GDE actuator is the most cost-effective combination controller/actuator platform for many VAV/CV application requirements.

Features

- Integral shaft-mount actuator speeds installation and setup.
- Conforms and is certified to the LONMARK interoperability guidelines, enabling information sharing with other LONMARK products.
- LONMARK-compliant with space-comfort functional profile number 8502
- Field-selectable parameters allow entry and updating of setpoint and control parameters via the TALON[®] Interface.
- Unique, two-piece design, consisting of a plenum-rated Enclosure Cover with Embedded Controller Board and a separate Wiring Base with the actuator, to protect electronic parts from potential damage during installation.
- Advanced PID control minimizes offset and maintains tighter setpoint control.

- Return to service from power failure without operator intervention.
- Separate minimum and maximum air-volume settings for heating and cooling modes.

Applications

The Basic Predator VAV/CV Controller with Siemens GDE actuator can be configured to control a variety of VAV and CV pressure independent zone applications, including:

- VAV/CV cooling only
- VAV/CV cooling or heating
- VAV/CV with hot water reheat or baseboard radiation
- VAV/CV with electric reheat (up to two stages)

Hardware

The unique design of our Predator VAV/CV controller with actuator consists of two components:

1. Enclosure Cover with an Embedded Controller Board
2. Wiring Base with Actuator

This design reduces threat of damage to the controller board during installation and reduces service time. The wiring connections are made to the wiring base, allowing this component to be installed early in the project cycle. Additionally, if the board needs repair, the controller board can easily be removed without disrupting the wiring connections.

Enclosure Cover with an Embedded Controller Board

To further enhance the protection of the controller board, it is embedded into the enclosure cover. Installation consists of snapping the enclosure cover onto the wiring base.

The Enclosure Cover with Embedded Controller Board is available with 2 Inputs, 4 Digital Outputs, 1 Room Sensor port, 1 Airflow Sensor.

The Controller Board communicates to all LONMARK devices via a Neuron[®]-chip. The controllers are shipped with pre-loaded applications, reducing engineering start-up time.

The control application is stored in Flash memory. Flash memory allows an application to be changed without removing and replacing the existing controller or memory chip.

Differential Pressure Sensor

The Differential Pressure Sensor connects to the air terminal box air-velocity sensing elements to provide measurement of the differential pressure. The measured value is converted to actual airflow in CFM (l/s) by the Predator VAV/CV controller.

Siemens GDE Actuator

The Siemens OpenAir GDE131.1P Direct-coupled 24 Vac Non-spring Return Rotary Electric Actuator is designed for three-position (floating) control of building HVAC dampers. This actuator features compact design, easy-to-see position indicator, and quiet, low-power operation.

Wiring Base

The base includes a pre-mounted and wired, Siemens GDE actuator. It features input / output connections designed specifically to meet Predator application requirements, helping make this product package a very cost-effective solution for many applications.

Controller Specifications

Specification	
Processor Type	Neuron 3150
Processor Clock Speed	10 MHz – Neuron
Network Communication	TP/XF-10 (78.8K bps)
Memory Size	49 K Flash Memory 10K SRAM
Voltage Requirements	24 Vac @ 50/60 Hz
Power Consumption with actuator	8 VA plus loads
Ambient Operating Environment	+32°F to +122°F (0°C to +50°C) 5 to 95% RH (Non-condensing)
Agency Listings	UL/CUL 916 PAZX/PAZX7 (Enclosed Energy Management) LONMARK 3.2
Regulatory Compliance	FCC Part 15, Class B CISPR 22 Class B CE Mark Australian EMC Framework
Predator with Actuator Base Dimensions:	6.6" H x 10.2" W x .5" D (168 mm x 259 mm x 12.7 mm)
Weight	3.37 lbs. (.X kg)

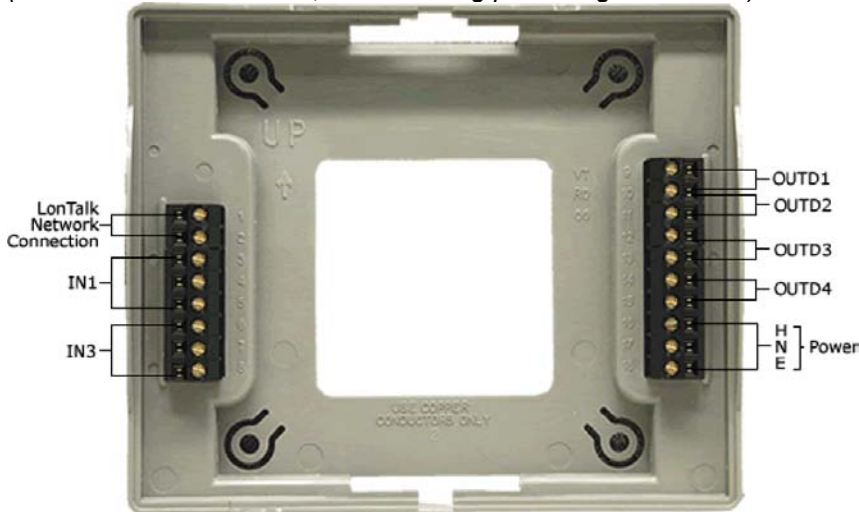
Actuator Specifications

Power Supply	
Operating Voltage	24 Vac +15%, -15%
Frequency	50/60 Hz
Power Consumption	2.3 VA
Equipment Rating	UL—Class 2, CSA Class III per EN60730
Function	
Torque	44 lb-in (5 Nm)
Runtime for 90° opening or closing	90 sec. At 60 Hz
Nominal angle of rotation	(108 sec. At 50 Hz)
Maximum angular rotation	90°
	95°
Mounting	
Shaft size	3/8 to 5/8 inch (8 to 16mm) diameter 1-1/2 inch (38 mm)
Minimum shaft length	
Housing	
Material	Durable plastic
Gear lubrication	Silicone free

Ambient Conditions Ambient temperature – operation Storage and transport Ambient humidity (non-condensing)	32 to 122°F (0 to 50°C) (limited by Controller) -22 to 140°F (-30 to 60°C) 95% R.H.
Agency Certification	UL listed to UL873; C-UL certified to Canadian Standard; C22.2 No. 24-93
Miscellaneous Pre-cabled connection Life cycle	18 AWG Designed for over 50,000 full stroke cycles and 1.5 million repositions at rated torque and temperature

Wiring Diagram

(Basic Predator Controller, not indicating pre-wiring to Actuator)



Wiring Recommendations:

Input	20 to 22 AWG
DO	18 to 22 AWG
Power	16 to 18 AWG
Lon Network	22 AWG Level 4

Transformer Requirements and Recommended Voltages

Type	Class 2 , 24 VAC, 50/60 Hz
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Optional Accessories

Predator Room Temperature Sensors

The Predator Room Temperature Sensors offer a wide range of features and functions. These sensors work with the Staefa TALON building automation system to deliver exceptional occupant comfort in even the most demanding application environments. The product family range includes temperature-sensing-only variants up to types that include LCD display, setpoint, and override.

All sensors incorporate precision temperature sensing elements to accurately and reliably measure room temperature. Their compact design results in an attractive, inconspicuous installation. A styled ventilation ring optimizes airflow through the cover for fast measurement response.

Predator Room Sensor Specifications

Dimensions	3-11/32" H × 2-1/2" W × 1-1/2" D (85 mm × 63 mm × 38 mm)
Temperature Monitoring Range	55° to 95°F (13° to 35°C)
Thermistor Resistance Value	10,000 Ohms @ 77°F (25°C)
Setpoint Range	55-95°F
Calibration Adjustments	None Required
Standard Colors	White

Ordering Information

Controllers

Description	Product Number
Predator VAV with Siemens GDE 131.1U Actuator 2IN 4DO 1AVS 2 IN (1) 100 K Ω Thermistor / (1) 0-10 Vdc or Dry Contact 4 DO Triac 1 AVS 0 to 1.5" WC 1 RTS 10 K Ω Thermistor Room Sensor	587-100
Predator With Siemens GDE 131.1P Actuator Wiring Base	587-165

Accessories

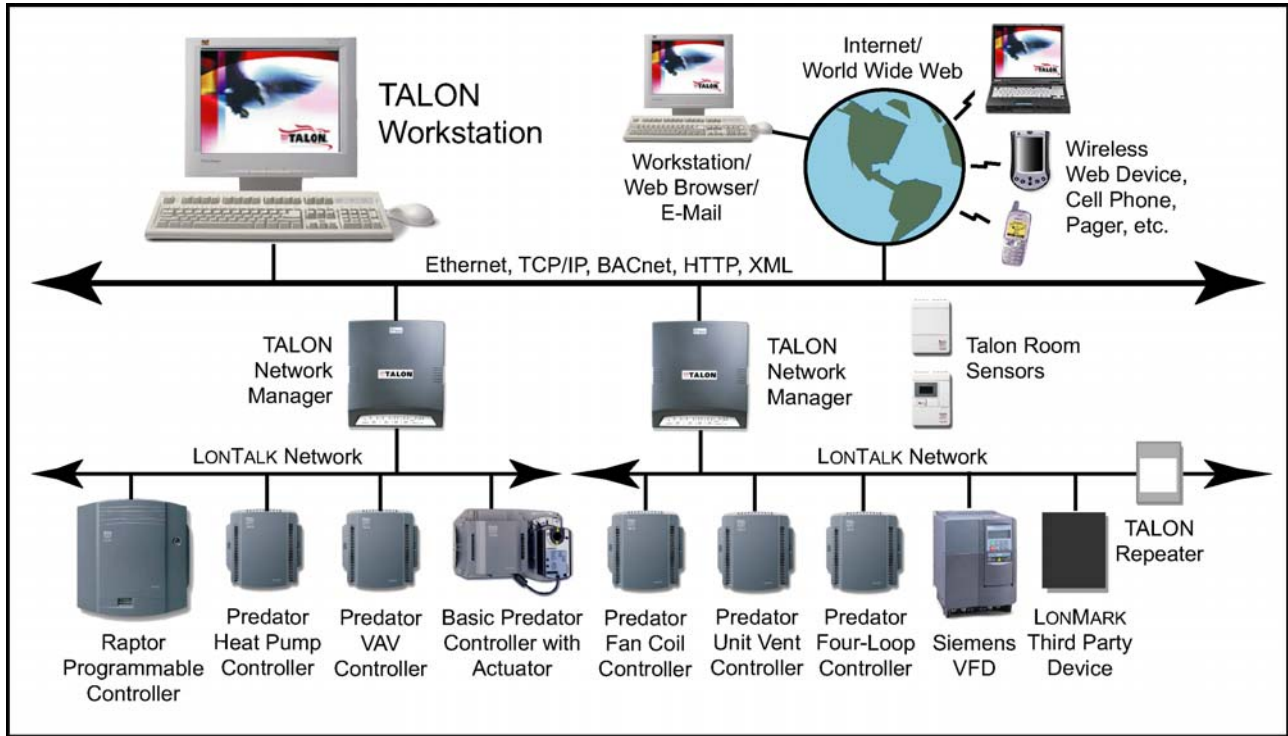
Description	Product Number
Predator Room Sensors	
Sensing Only	587-180
Override	587-181
Setpoint	587-182
Temperature Display	587-183 ¹
Setpoint and Override	587-184
Override and Temperature Display	587-185 ¹
Setpoint and Temperature Display	587-186 ¹
Setpoint, Override and Temperature Display	587-187 ¹

Documentation

Description	Product Number
TALON Information Library CD	587-980

1. Sensor will display Fahrenheit or Celsius temperature.

TALON Architecture



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