

SR-991

Product Line: Design Products

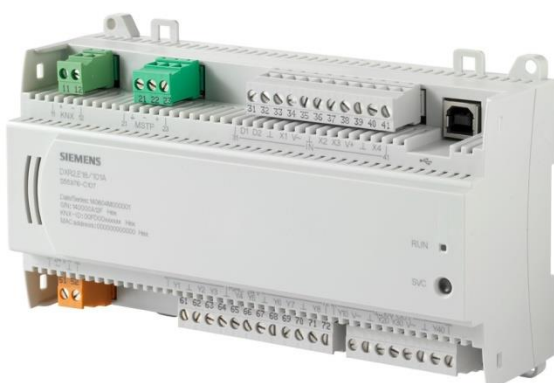
Distribution: APOGEE
System Channels Only

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P1 DXR



Product Description

The new P1 DXR allows you to replace a P1 TEC controller with the latest Design DXR2 hardware platform. Using existing P1 network wiring and field panels, the device's firmware generates P1 TEC points for the configured application type.

Unique Selling Points

- P1 Protocol Communication
- USB interface
- Flexible and highly configurable applications to meet customer requirements using current ABT tool set
- Upgradable to a standard BACnet MS/TP DXR via a firmware upgrade at no cost when needed

Reason for Release

As the legacy P1 TEC platform nears retirement, we realize that the challenges of managing service replacement needs of existing P1 TECs will become challenging and migration of FLNs is not always cost feasible. The P1 DXR offers a solution to effectively replace installed TECs when required. Price and positioning are not designed for use on new installations and is in line with our APOGEE BACnet system strategy.

List of Key Product Features

- Uses existing P1 network wiring and field panels
- Uses ABT Site to configure TEC functionality in the P1 DXR
- Supports US and CA engineering units
- Requires PL-Link room operator unit or standalone room temperature sensor, Total Room Automation (TRA) is not supported.

Sales Release

Name	P1 DXR
Delivery Release/Orders Accepted Date (month)	August 2019
Delivery Time/Lead Time	Shipping by Mid-August / Available through SAP.
Sales Channels/Regions Where Product is Sold	U.S., Canada, Asia Pacific, Latin America, and the United Kingdom
Price Information	Please refer to the reference price information in the current price list.
Embargo Designator (ECCN, AL, ...)	EAR99

References

Sales Documentation

Document	Part Number	Comments
Desigo DXR Controllers – Product Overview	A6V11238549	Available Electronically

Product Documentation

Document	Part Number	Comments
P1 DXR T12P Submittal Sheet	A6V11524146	Available Electronically
P1 DXR T18 Submittal Sheet	A6V11524148	Available Electronically
Installation Instructions	A6V11516808	Available Electronically
DXR Configuration and Sizing Guideline	A6V10730590	Available Electronically
Wiring Guidelines	125-3002	Available Electronically
P1 DXR – TEC VAV and Fan Powered Box Migration	A6V11504404	Available Electronically
P1 DXR – TEC Fan Coil and Unit Vent Migration	A6V11504410	Available Electronically
P1 DXR – TEC Heat Pump Migration	A6V11504412	Available Electronically
QMX3 Room Unit Data sheet	149-151	Available Electronically
QMX2 Data Sheet	A6V11207411	Available Electronically
Semi-Flush Mount Sensor for DXR	149-603	Available Electronically

Product Description

The family of Desigo DXR controllers has just been expanded with the new P1 DXR controller.

The new P1 DXR allows you to swap out failed P1 TECs with the new hardware and still maintain the P1 communication wiring between the remaining P1 TECs and supervisory controllers. Please see the

compatibility section below for more details. This allows you to competitively support a loyal, existing customer and at the same time provide new, upgradable hardware. This makes you cost competitive for replacing a small amount of P1 TECs right now and allows your customer to protect their hardware investment in the future. The main reason is that these P1 DXRs are upgradeable and can be turned into a regular BACnet MS/TP DXR. This solution provides you an excellent opportunity to discuss a long term migration strategy from P1 TECs to Designo BACnet DXRs, using the P1 DXR as a catalyst.

The typical standard HVAC applications are supported including:

- Variable Air Volume and Fan Powered Box
- Fan Coil and Unit Ventilators
- Heat Pump

There are two hardware options for the P1 DXR based on the application type and required inputs and outputs needed.

Application Type	P1 DXR Hardware
VAV, FPB	DXR2.T12P-102B (2-AI/UI, 1-BI, 1-ΔP, 2-AO, 6-BO)
	DXR2.T18-101B ¹⁾ (4-AI/UI, 2-BI, 4-AO, 8-BO)
FCU, UV, HP	DXR2.T18-101B (4-AI/UI, 2-BI, 4-AO, 8-BO)

¹⁾ T18 hardware does not have onboard DP sensing. If T18 hardware is selected for VAV or FPB, an external DP sensor must be provided and wired.

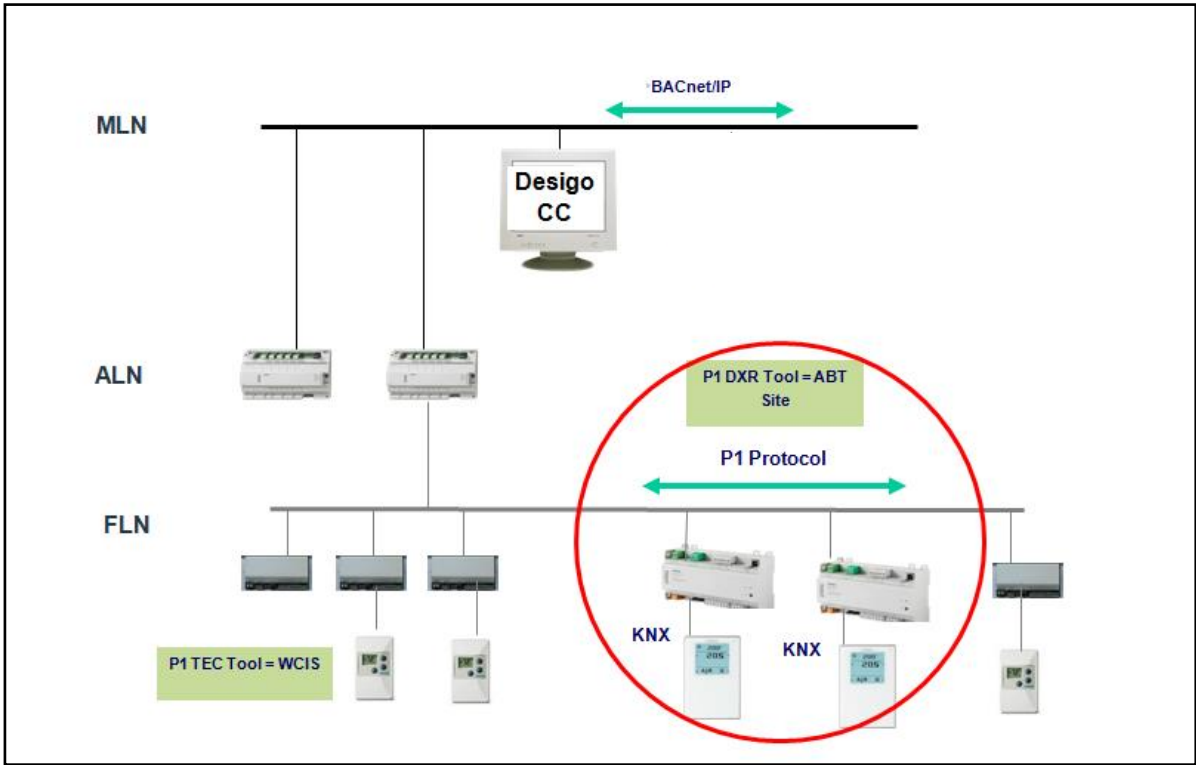


Image: P1 DXR in Apogee System Architecture

Features, Functions and Benefits

Features	Functions	Benefits
P1 Protocol	Supports the legacy controller communication protocol and wire	Eliminates the need and expense to pull new communication wire to support

	between the room and supervisory controllers	BACnet MS/TP or BACnet IP devices
USB Interface	High speed connection between hardware and ABT Site tool	Quickly upgrade firmware or download application templates through a fast connection
Highly Configurable	Configurable applications using the ABT Site tool to meet a wide range of sequences	Configuration flexibility reduces the need to create custom programming for the device to meet many unique customer specifications
Flexible Inputs and Outputs	Digital and analog outputs along with universal inputs provide support for multiple sensing types.	More flexible option, if and when, new components (e.g., sensors, actuators) need to be replaced as well as the legacy room controller
PL-Link Room Units and Sensors	Complete array of room unit and sensor offerings	Provide attractive and future proof room sensing options with the new platform
Upgradeable to BACnet	Download new firmware to turn a P1 DXR to a BACnet MS/TP DXR without changing hardware	Customer invests in the hardware once and can be upgraded in the future when ready

Technical Data

Please see the datasheets for the complete list of technical information.

High Level Overview of P1 DXR Steps

Please see the application specific migration document for all of the details:

- Obtain the correct replacement hardware.
- Select the correct P1 DXR application template in ABT Site.
- Configure the P1 DXR template to match the TEC application being replaced.
- Download the configured template to P1 DXR.
- Install P1 DXR on the network.
- Commission the devices, including input/output points.

Control Function Match Between P1 TEC & P1 DXR

The intent of the P1 DXR is **not** to match the exact control sequence of the P1 TEC, but to provide HVAC control of the same equipment. The P1 DXR uses the standard DXR applications and those do vary compared to the legacy P1 TEC applications. An exact control function match between the P1 TEC and its P1 DXR replacement may not exist for every feature in the application. The following list describes which TEC features are not provided, or are not required, in a P1 DXR device:

- Differential pressure sensor periodic zero calibration:
 - The differential pressure sensor in the DXR does not require initial or periodic zero differential pressure calibration.
- Autozero modules:
 - Not required for DXR actuators calibration or differential pressure zero correction.
- Spare floating control actuator:
 - No spare output is provided for floating control actuators in DXR devices.
 - Spare outputs are provided for analog (0-10v), or binary outputs.
 - Spare inputs are provided for binary input or analog (0-10v) inputs.

- Single heating/cooling temperature setpoint and control:
 - DXRs conform to building and industry requirements for separation of heating and cooling temperature setpoints.
 - Unlike TEC, the comfort cooling and comfort heating setpoint, both internal and from a room unit, cannot be the same value, but must have at least 1 degree of separation (e.g. Cooling = 74 degrees; Heating = 73 degrees).
- More than one terminal hot water coil:
 - A second heating coil can be configured by selecting a terminal heating/cooling 2 pipe with a fixed h/c changeover set to heating.
- Primary air or water local temperature sensor for changeover control:
 - Changeover control for air or water is provided by network or PPCL commands.
- More than two stages of electric heating coils (FCU and HP):
 - Three stage of electric heat can be provided in VAV and FPB applications.
- P1 TEC's can supply up to 12 VA to a triac load and the P1 DXR will supply up to 6 VA to a triac load. It may be necessary to install an interposing relay and larger transformer when controlling older Heat Pump and Fan Coil equipment to verify that the correct triac load is being supplied.
- PWM control for more than one electric heat stage:
 - Option for analog control of electric heat for full modulating control.
- Dual Duct single discharge pressure sensor configuration
- Dual Duct one inlet and one discharge pressure sensor configuration:
 - Option provided for two inlet pressure sensors.
- Face-by-pass damper control (FCU and HP)
- More than two HP or DX stages (FCU and HP)

Standards, directives and approvals	
UL Listing	UL916
Suitable for plenum area installation	UL1995
Federal Communications Commission	FCC CFR 47 Part 15 Class B
CSA Compliance and cUL certification	C22.2 No. 205
Environmental compatibility - RoHS Compliant	The product environmental declaration contains data on environmentally compatible product design and assessments (composition, packaging, environmental benefit, disposal).
ASHRAE 90.1 Supported	
Quality	ISO 9001 (Quality)

Sales Strategy

New Systems

The Desigo BACnet DXR family of controllers released in October of 2015 is the controller of choice for new installations. It supports a wide range of applications, with new applications and features being added on a regular basis. Please see the sales release (SR-886) for the latest information on this exciting controller and all of its capabilities.

Existing Systems

We understand that there is a huge base of loyal customers that need to be supported with our latest offering. Some of you have already converted your customers from the P1 TECs to the BACnet TECs to take advantage of the features provided by that controller. Now you will have another option for your customers.

Below are your replacement options for existing systems:

1. P1 TECs to Designo BACnet DXR Option

- Use a Designo DXR, which requires a BACnet MS/TP FLN network supported by the field panel. There are two options for the field panel in this scenario: (1) For RS-485 and Ethernet P2 ALN: The Designo DXRs can be connected to the FLN of an MS/TP integration driver supporting a P2 ALN.
- (2) For BACnet IP ALN: The Designo DXRs can be connected to the MS/TP FLN of any BACnet IP panel. This can be a standard BACnet IP panel with firmware revision 3.4 or greater
- Re-wiring of the room controllers for BACnet MS/TP or IP will be required.
- New Room Units (QMX3 series) and communication wire for use with the DXR will be required.

2. P1 TECs to P1 DXR Option

- One to one replacement of a P1 TEC directly with a P1 DXR will require the use of ABT Site.
- New Room Units (QMX3 series) and room unit communication wire for use with the P1 DXR will be required.

P1 DXR hardware will be able to be upgraded with new firmware to make it a standard BACnet MS/TP DXR in the future, when your customer is ready to move forward with a full APOGEE BACnet offering.

Compatibility

P1 DXR Product Compatibility	
Management Level	Designo CC 2.1 and later
	Insight Graphics V3.14 and later; service patch is required that contains P1 DXR import application feature – available on SIOS via Technical Support
Automation Level	Firmware 3.4 or later
Field Level	QMX... Room Units

ABT Site Version	App. Library Version	DXR/FW Version
3.3.1	2.12.0.002	01.21.50.128

Estimating

These parts will be supported in our online pricing documents and estimating tools upon release

Order Information and Pricing

Please note the ordering information listed below is primarily for our international customers as they update their SAP systems with the latest product information. Always refer to your current price list for the most up to date pricing information.

The P1 DXR are priced in line with the P1 TECs for the remaining of this fiscal year.

Beginning on October 1st, 2019 the P1 DXR will have a significant price advantage over the legacy P1 TEC controllers.

Product Description	Orderable Part Number	Model Number (SSN)	US List Price	Mult .	GBK	ESN	Weight of Unit	Product Length/ Width/ Height
P1 DXR for VAV/FPB Apps	DXR2.T12P-102B	S55376-C168	\$ 1113	A	H5EO	ONB	10.5 oz. (300g)	7.2" x 4.2" x 2.6" (183 x 106 x 65 mm)

P1 DXR for FCU/UV/HP Apps	DXR2.T18-101B	S55376-C169	\$ 970	A	H5EO	ONB	10.5 oz. (300g)	7.2" x 4.2" x 2.6" (183 x 106 x 65 mm)
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Please use the Orderable Part number for ordering through SAP.

Support

Order information	Domestic Orders	International Orders
	<u>Contact:</u> Your Dedicated Solutions Support Specialist <u>Phone:</u> 1-800-516-9964 <u>Email:</u> Your Dedicated Solutions Support Specialist	<u>Contact:</u> Your Dedicated Solutions Support Specialist <u>Phone:</u> 1-847-941-5050 <u>Email:</u> Your Dedicated Solutions Support Specialist
Return Items	Domestic Orders	International Orders
	<u>Contact:</u> Your Dedicated Solutions Support Specialist <u>Phone:</u> 1-800-516-9964 <u>Email:</u> Your Dedicated Solutions Support Specialist <u>Physical Return:</u> Siemens Industry Smart Infrastructure 1000 Deerfield Parkway Buffalo Grove, IL 60089	<u>Contact:</u> Your Dedicated Solutions Support Specialist <u>Phone:</u> 1-847-941-5050 <u>Email:</u> Your Dedicated Solutions Support Specialist <u>Physical Return:</u> Siemens Industry Smart Infrastructure 1000 Deerfield Parkway Buffalo Grove, IL 60089

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