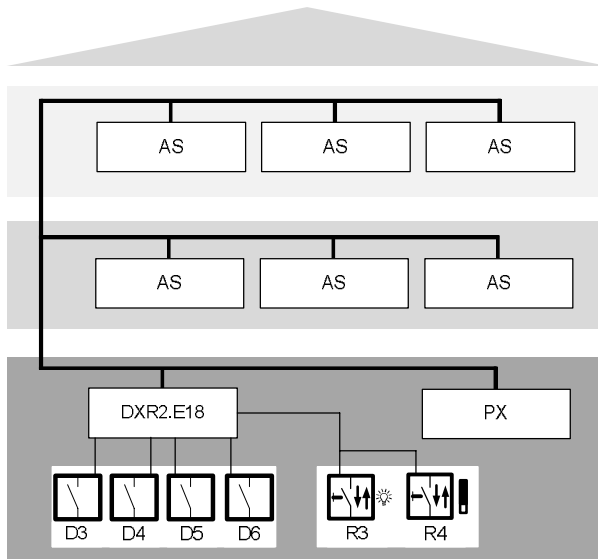




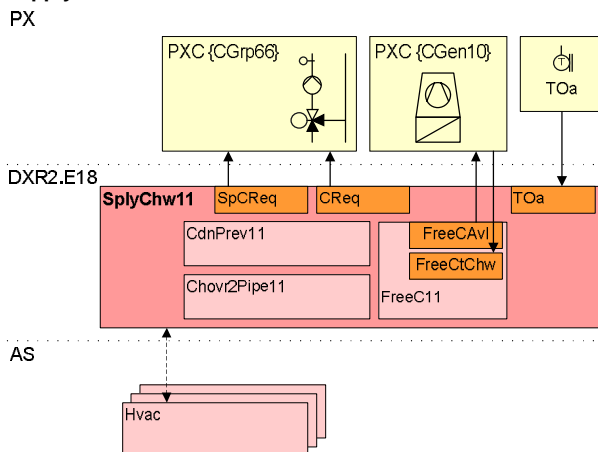
- **Collection and preparing HVAC supply and demand signals as BACnet data points for:**
 - 2 x groups for chilled water supply
 - 2 x groups for hot water supply
 - 1 x group for demand-controlled air supply
- **Room operating mode control for 4 groups via digital input**
- **Manual central operation of facades via KNX PL-Link button**
- **Manual central operation of lighting via KNX PL-Link button**

Plant diagram



DXR2.E18	Automation station for HVAC supply chain	AS	Automation station in the room
R3, R4	KNX PL-Link button for central switching/dimming of luminaires and facade control	D3, D4, D5, D6	Digital signals for room operating mode
		PX	Automation station for supply plants (Siemens PX or BACnet third-party device)

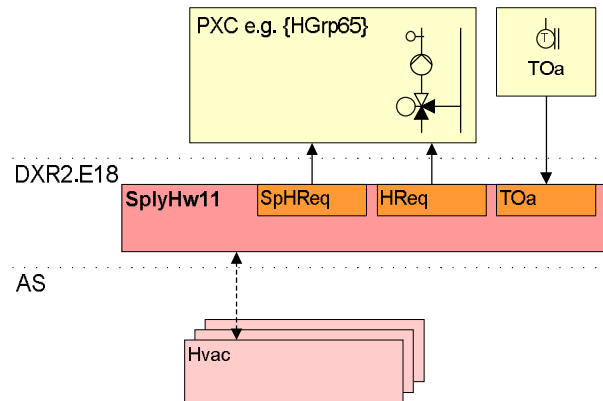
Function diagrams Supply chain chilled water



CdnPrev11	Condensation prevention 11	FreeCTChw	Free cooling temperature chilled water
Chovr2Pipe11	Changeover function for 2-pipe 11	HVAC	HVAC room function
CHwTOa	Supply chain chilled water outside temperature	PXC {CGen10}	Primary application cooling 10
CReq	Cooling request	PXC {CGrp86}	Primary application cooling group 86
FreeC11	Free cooling 11	SpCReq	Setpoint for cooling request
FreeCAvI	Free cooling available	SplyChw11	Supply chain chilled water 11
		TOa	Outside temperature

Supply chain hot water

PX



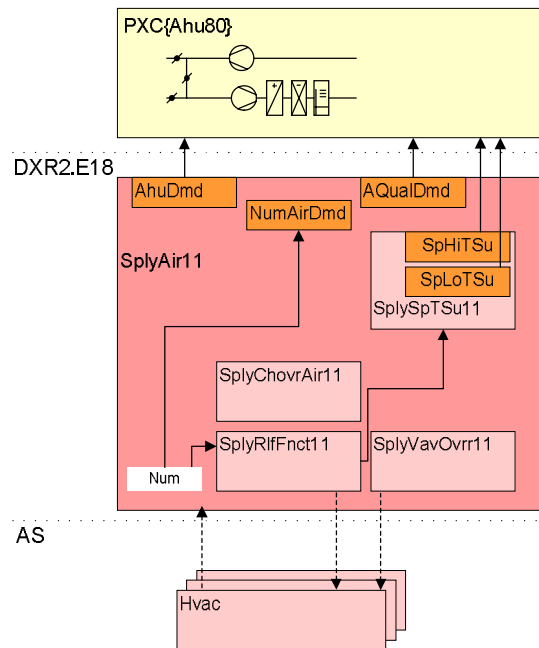
HReq
SpHReq

Heating request
Setpoint for heating request

PXC {HGrp65} Primary application heating group 65
SplyHw11 Supply chain hot water 11

Supply chain air

PX



AhuDmd Demand for air handling unit
AQualDmd Air quality demand
NumAirDmd Number of rooms with air demand
PXC{Ahu80} Primary application air handling unit 80
SpHiTSu Setpoint high for supply air temperature
SpLoTSu Setpoint low for supply air temperature
SplyAir11 Supply chain air 11

SplyChovrAir11 Supply chain changeover condition for air 11 (hot/cold air)
SplyRlfFnct11 Supply chain relief function 11
SplySpTSu11 Supply chain setpoint for supply air temperature 11
SplyVavOvrr11 Supply chain VAV overridden value 11

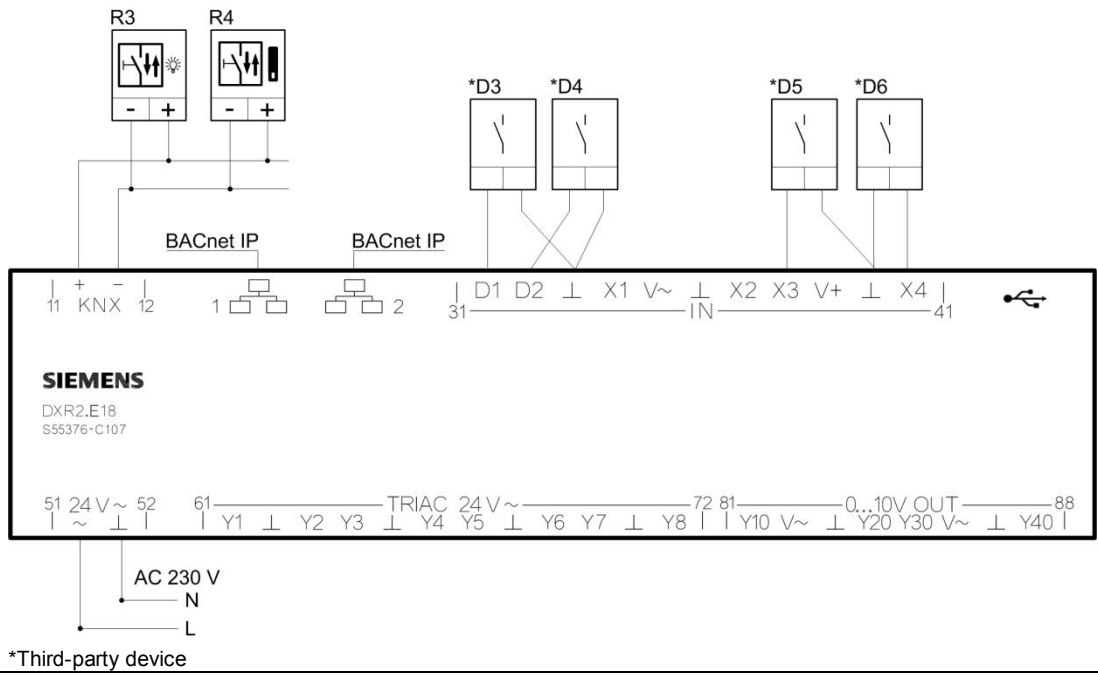
Description of functions	Basic function	Options
	<ul style="list-style-type: none"> • 2 x coordination of supply and demand signals for chilled water <ul style="list-style-type: none"> ○ Setpoint determination for cooling request ○ Free cooling ○ Disable chilled water sequence based on outside temperature ○ Condensation prevention using local condensation monitors in the rooms ○ Centrale valve kick control ○ Central override of all cooling valves • 2 x coordination of supply and demand signals for hot water <ul style="list-style-type: none"> ○ Setpoint determination for heating request ○ Disable hot water sequence based on outside temperature ○ Centrale valve kick control ○ Central override of all heating valves • 1 x coordination of supply and demand signals for air <ul style="list-style-type: none"> ○ Activate supply air supply by a minimum number of rooms with fresh air demand ○ Supply air temperature selection ○ Relief function for stable operation of air handling unit ○ Central override of all VAV 	<ul style="list-style-type: none"> • 4 central groups for controlling room operating mode via one digital input. It can be switched between 2 room operating modes per group. • Room operating mode control can be enabled for each group on 3 additional groups with a delay on large buildings. • 2 central groups of manual operation of blinds via KNX PL-Link switch. • Manual blinds operation can be enabled for each group on 3 additional groups with a delay on large buildings. • 2 central groups of manual operation of blinds via KNX PL-Link switch. • VAV position selection for AirOptiControl by damper position, air flow deviation, or setpoint evaluation of air flow.
		Variants
		<ul style="list-style-type: none"> • The room operating modes can be commanded on the DXR2 via a BACnet reference.

Siemens devices	Key	Device	Datasheet	Product no.	No.
	DXR2...	Compact room automation station, BACnet/IP, 24 V, DIN housing, 2 DI, 4 UI, 8 DO Triacs, 4 AO 0...10 V	N9205	DXR2.E18-101A DXR2.E18-102A	1
			N9207	DXR2.M18-101A DXR2.M18-102A	

Optional third-party device	Key	Device	No.
	R3	I/O pushbutton interface UP 220/31	1
	R4	I/O pushbutton interface UP 220/31	1
	D3, D4, D5, D6	Digital contact to control room operating mode	4

²⁾ Additional documents on www.siemens.com/gamma-td

Connection diagram



Application
configuration

	Equipment	Values/range	Template settings
Central HVAC function	Supply chain hot water 1	None Active	Active
	Supply chain hot water 2	None Active	Active
	Supply chain chilled water 1	None Active	Active
	Condensation prevention 1	None Active	Active
	Changeover function 2-pipe 1	None Active	Active
	Free cooling 1	None Active	Active
	Supply chain chilled water 2	None Active	Active
	Condensation prevention 2	None Active	Active
	Changeover function 2-pipe 2	None Active	Active
	Free cooling 2	None Active	Active
	Supply chain air	None Active	Active
	Relief function	None Active	Active
	Supply air temperature setpoint determination	None Active	Active
	Changeover condition determination air	None Active	Active
	Dew point evaluation	None Active	Active
	Evaluation room air humidity	None Active	Active
VAV override	None Active	Active	

Optional
configuration

	Equipment	Values/range	Template settings
On-board input	Operating mode switch 1	None D1; Normally open X3; Normally open	D1; Normally open
	Operating mode switch 2	None D2; Normally open X4; Normally open	D2; Normally open
	Operating mode switch 3	None X3; Normally open	X3; Normally open
	Operating mode switch 4	None X4; Normally open	X4; Normally open
KNX PL-Link device	Light switch 1	None UP 220/31; 2 x dimming UP 221/2; 1 x dimming UP 221/3; 1 x dimming UP 285/2; 1 x dimming UP 285/3; 1 x dimming	UP 220/31; 2 x dimming

Optional configuration

	Equipment	Values/range	Template settings
KNX PL-Link device	Light switch 2	None UP 220/31; 2 x dimming UP 221/2; 1 x dimming UP 221/3; 1 x dimming UP 285/2; 1 x dimming UP 285/3; 1 x dimming	None
	Blinds switch 1	None UP 220/31; 2 x blinds control UP 221/2; 1 x blinds control UP 221/3; 1 x blinds control UP 285/2; 1 x blinds control UP 285/3; 1 x blinds control	UP 220/31; 2 x blinds control
	Blinds switch 2	None UP 220/31; 2 x blinds control UP 221/2; 1 x blinds control UP 221/3; 1 x blinds control UP 285/2; 1 x blinds control UP 285/3; 1 x blinds control	None
Central shading function	Central operation shading 1 switch-on delay 1	None Active	None
	Central operation shading 1 switch-on delay 2	None Active	None
	Central operation shading 1 switch-on delay 3	None Active	None
	Central operation shading 2 switch-on delay 1	None Active	None
	Central operation shading 2 switch-on delay 2	None Active	None
	Central operation shading 2 switch-on delay 3	None Active	None

Standard values

	Parameter	Values/range	Template settings
VAV override value	Enable supply air VAV override value	Yes No	No
	Supply air VAV override value	0...1000 %	50 %
	Enable extract air VAV override value	Yes No	No
	Extract air VAV override value	0...1000 %	50 %

Engineering

- The ABT Site engineering tool is required to engineer DXR2 automation stations.
- See the Siemens Download Center www.siemens.com/bt/download for the latest application configurations and workflow tutorials.
- The following evaluation functions can be configured for the AirOptiControl function:
 - Via the VAV damper positions (if known)
 - Via the VAV supply air flow deviation (if air flow is known)
 - Via VAV setpoint evaluation (if neither the damper position nor the air flow is known)

Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41-724 24 24
Fax +41 41-724 35 22
www.siemens.com/buildingtechnologies

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