

Intelligent Valve

BACnet Objects



Control valve with integrated energy data acquisition for ventilation and air conditioning plants as well as precontrol groups. Sensor-guided dynamic flow control.

Intelligent Valve product types:

- ASE4U10E
- EVG4U10E015; EVG4U10E020; EVG4U10E025; EVG4U10E032; EVG4U10E040; EVG4U10E050
- EXG4U10E015; EXG4U10E020; EXG4U10E025; EXG4U10E032; EXG4U10E040; EXG4U10E050
- EVF4U20E065; EVF4U20E080; EVF4U20E100; EVF4U20E125
- EXF4U20E065; EXF4U20E080; EXF4U20E100

This Object List is valid for the following product version:

- Model info: ASE4U10E; HW=2.1.0
- Firmware revision: 09.54.12.07; APP=1.18.6462; SVS300.6.SBC=15.00; ISC=1.00
- Application software version: AAS-20:SU=SiUn; APT=HvacFnct34 ; APTV=2.111; APS=1

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General Information

Date	2021-10-01
Vendor name	Siemens Smart Infrastructure
Vendor ID	7
Product name	Intelligent Valve
Product model number	ASE4U10 used in <ul style="list-style-type: none"> • EVG4U10E.. (e.g. EVG4U10E020) • EXG4U10E.. (e.g. EXG4U10E032) • EVF4U20E.. (e.g. EVF4U20E065) • EXF4U20E.. (e.g. EVF4U20E100)
BACnet protocol version	1
BACnet protocol revision	15
BACnet device profile	B-ASC (BACnet Application Specific Controller)
Firmware revision	09.54.12.07; APP=1.18.6462; SVS300.6.SBC=15.00; ISC=01.00
BACnet application software version	AAS-20:SU=SiUn; APT=HvacFnct34; APTV=2.111; APS=1
BACnet interoperability	Data Sharing-ReadProperty-B Data Sharing-ReadPropertyMultiple-B Data Sharing-WriteProperty-B Data Sharing-WritePropertyMultiple-B Data Sharing-Change Of Value-B Device Management-Dynamic Device Binding-B Device Management-Dynamic Object Binding-B Device Management-DeviceCommunicationControl-B Device Management-TimeSynchronization-B Device Management-UTCTimeSynchronization-B Device Management-ReinitializeDevice-B Device Management-Restart-B Scheduling – Weekly Schedule Internal-B
Data Link Layer Options	BACnet/IP – Annex J – non-BBMD Funcionality

Used Object Types

Object type		Optional properties	Writable properties
AI	Analog Input	Description COV Increment	COV Increment
AO	Analog Output	Description COV Increment	Present Value Relinquish Default COV Increment
AV	Analog Value	Description	Present Value
BI	Binary Input	Description Active Text Inactive Text	-
BV	Binary Value	Description Active Text Inactive Text	Present Value
Device	Device	Description	Object Identifier Object Name Location Description
MSV	Multi-State Value	Description State Text	Present Value
PIV	Positive Integer Value		-



The current application on the device does not support those options for multi-state objects which are *italicized* (e.g. [5] *Ni1000 (DIN)*). These options will become active with future versions of the application.

Object List Structure

The object list is clustered according to use cases – the chapter Proposed Objects for Integration into an Automation Station as dynamic control valve [→ 6] comprises a selection of the objects considered essential in the case the Intelligent Valve is integrated via BACnet for control operation and monitoring. The two sub-chapters contain a selection of objects from the other chapters.

The other chapters are equivalent to the structure used in the configuration and commissioning tool ABT Go, following the major workflow phases: Operation [→ 12] – Commissioning [→ 30] – Configuration [→ 53].

Recommendation: Objects requiring a COV adaption according to line size

The default COV (change-of-value) of several present values is factory set for the smallest line size DN 15 – e.g. Present Volume Flow (PrVfl):

- Range DN 15: approximately 0.015...1.5 m³/h
- COV increment = 0.01 m³/h


For larger line sizes, this will lead to very high data traffic on BACnet. In order to avoid this, it is recommended to adapt the COV values for the objects in the table below according to line size.

Object name:	PrVfl	PrPwr		PrDiffPVlv	PrAdaVfIMax
Object description:	Present volume flow	Present power		Present differential pressure valve	Present adapted maximum volume flow
		Heating (55/40)	Cooling (6/12)		
Default COV	0.01 m ³ /h	0.01 kW	0.01 kW	0.1 kPa	0.1 m ³ /h
	[m³/h]	[kW]		[kPa]	[m³/h]
DN 15	0.02	0.4	0.15	1	0.1
DN 20	0.06	0.8	0.3	1	0.1
DN 25	0.1	1.2	0.5	1	0.1
DN 32	0.15	2	0.75	1	0.2
DN 40	0.25	3	1.2	1	0.3
DN 50	0.36	4.5	2	1	0.5
DN 65	0.6	8	3	1	1
DN 80	1	12	5	1	1.2
DN 100	1.4	18	7	1	2
DN 125	2.4	30	12	1	3
	2 % steps	2 % steps			2.5 % steps

Proposed Objects for Integration into an Automation Station as Dynamic Control Valve

Control

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
SpRelMdb %Pit%'HVAC'VlvCtl'SpRelMdb	Control Valve	Relative setpoint Modbus Active if in Basic Configuration setpoint source [3] Network (Modbus RTU) is selected.	Available in cloud		N	Address	0
	Flow Temp.		Write		N	R/W	R/W
	Heating Circuit		Unit		[%]	Resolution	0.01 %
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	100	Max.	10'000
			Default		0	Register	1
SpRel %Pit%'HVAC'VlvCtl'SpRel	Control Valve	Relative setpoint Setpoint to the device – the base for the calculation of the absolute setpoint PrSpVfl or PrSpPwr , depending on the operation mode selected.	Available in cloud		N	Address	5
	Flow Temp.		Write		Y	R/W	R
	Heating Circuit		Unit		[%]	Resolution	0.01 %
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	100	Max.	10'000
			Default		0	Register	6
PrSpSrc %Pit%'HVAC'PrSpSrc	Control Valve	Present setpoint source Shows the configured application and setpoint source. Currently selection between: <ul style="list-style-type: none"> • [1]: Dynamic balancing valve with continuous analog signal on terminal X1; • [2]: Dynamic balancing valve with setpoint via Modbus RTU (SpRelMdb); • [3]: Dynamic balancing valve with setpoint via BACnet IP (SpRel); • [4]: Heating circuit control with local setpoint according to heating curve based on measured outside temperature; • [5]: Supply temperature control with setpoint according to analog signal on terminal X1; • [6]: Supply temperature control with setpoint via Modbus RTU (SpTFIMdb); • [7]: Supply temperature control with setpoint via BACnet IP; • [8]: Differential pressure control with setpoint via BACnet IP. 	Available in cloud		N	Address	16
	Flow Temp.		Write		N	R/W	-
	Heating Circuit		Unit		-	Resolution	-
	(Δp Control)		Options	[1] Relative setpoint terminal [2] Relative setpoint Modbus [3] Relative setpoint remote [4] Heat circuit outside temp. comp. [5] Flow temp. setpoint terminal [6] Flow temp. setpoint Modbus [7] Flow temp. setpoint remote [8] Diff. pressure setpoint remote			
				Default		[1] Relative setpoint terminal	Register

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
CtlSta %Plt%'HVAC'VlvCtl'CtlSta	Control Valve	MSV40 MSV63 Based on selection for CtlMod , the failure state of the sensors and, provided limitations are active, the respective operation mode are determined – e.g. whether the valve switches from output control to volume flow if a temperature sensor fails.	Available in cloud	Y	Address	17	
	Flow Temp.		Write	N	R/W	R	
	Heating Circuit		Unit	-	Resolution	-	
	(Δp Control)		Options	[1] Position [2] Volume flow [3] Power [4] Maximum power limit [5] Minimum volume flow limit [6] Maximum volume flow limit [7] Min.return temp.limitation [8] Max.return temp.limitation [9] Flow/return temp.diff.limitation [10] Override			
			Default	-	Register	18	
HCSta %Plt%'HVAC'VlvCtl'HCSta	Control Valve	MSV53 MSV64 Based on the temperatures on B26 and B7, the valve decides if it is cooling (B26 < B7) or heating (B26 > B7). ⇒ Writing in the respective flow and energy accumulator objects.  Flow Temp. Control behavior depends on design temperatures, NOT on heating/cooling state.	Available in cloud	Y	Address	18	
	Flow Temp.		Write	N	R/W	R	
	Heating Circuit		Unit	-	Resolution	-	
	(Δp Control)		Options	[1] Neither [2] Heating [3] Cooling			
			Default	-	Register	19	
PrSpVfl %Plt%'HVAC'VlvCtl'PrSpVfl	Control Valve	AV37 AV69 Present setpoint volume flow control, either calculated from SpRel * VflMax , or resulting from an additional limitation.	Available in cloud	Y	Address	7	
	Flow Temp.		Write	N	R/W	R/W	
	Heating Circuit		Unit	[m³/h]	Resolution	0.01 m³/h	
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	1000	Max.	28'800
			Default	-	Register	8	

Object name	Obj. type/ID		Description	BACnet Properties		Modbus		
PrVfl %Pit%'HVAC'VlvCtl'PrVfl	Control Valve	AV39	Present volume flow Value measured by the flow sensor.	Available in cloud	Y	Address	6	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit	AV70		Unit	[m³/h]	Resolution	0.01 m³/h	
	(Δp Control)			Options	Value min.	0	Min.	0
				Value max.	1000	Max.	50'000	
	Default	-	Register	7				
PrSpPwr %Pit%'HVAC'VlvCtl'PrSpPwr	Control Valve	AV38	Present setpoint power Present output setpoint in output control, either calculated from SpRel * PwrMax , or resulting from an additional limitation.	Available in cloud	Y	Address	9	
	Flow Temp.			Write	N	R/W	R/W	
	Heating Circuit	-		Unit	[kW]	Resolution	0.1 kW	
	(Δp Control)			Options	Value min.	0	Min.	0
				Value max.	10'000	Max.	65'536	
	Default	-	Register	10				
PrPwr %Pit%'HVAC'VlvCtl'PrPwr	Control Valve	AV40	Present power Output calculated as a product of PrVfl , TRtPrim and TFIPrim .	Available in cloud	Y	Address	8	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit	AV71		Unit	[kW]	Resolution	0.1 kW	
	(Δp Control)			Options	Value min.	0	Min.	0
				Value max.	10'000	Max.	65'536	
	Default	-	Register	9				
TRtPrim %Pit%'TRtPrim	Control Valve	AI2	Primary return temperature Present value of local connected temperature sensor at B26.	Available in cloud	N	Address	12	
	Flow Temp.	-		Write	N	R/W	R	
	Heating Circuit			Unit	[°C]	Resolution	0.01 °C (offset -10 °C)	
	(Δp Control)			Options	Value min.	-10	Min.	0
				Value max.	150	Max.	16'000	
	Default	-	Register	13				

Object name	Obj. type/ID	Description	BACnet Properties		Modbus				
TFIPrim %Pt%TFIPrim	Control Valve	A13	Primary flow temperature Present value of local connected temperature sensor at B7.	Available in cloud	N	Address	11		
	Flow Temp.	-		Write	N	R/W	R		
	Heating Circuit	-		Unit	[°C]	Resolution	0.01 °C (offset -10 °C)		
	(Δp Control)	-		Options	Value min.	-10	Min.	0	
					Value max.	150	Max.	16'000	
			Default	-	Register	12			
VivPosFb %Pt%VivPosFb	Control Valve	A11	Valve position feedback Present control valve position based on the feedback signal on terminal U.	Available in cloud	Y	-			
	Flow Temp.			Write	N				
	Heating Circuit			Unit	[%]				
	(Δp Control)			Options	Value min.			0	
					Value max.			100	
			Default	0					
MnFit %Pt%'HVAC'AlmBd'MnFit	Control Valve	MSV57	Main fault Shows the main fault of the device	Available in cloud	Y	Address	19		
	Flow Temp.			Write	N	R/W	R		
	Heating Circuit			Unit	-	Resolution	-		
	(Δp Control)			Options	[1] No fault [2] Prim. flow temp., sensor fault [3] Prim. return temp., sensor fault [4] Flow temp., sensor fault [5] Return temp., sensor fault [6] Vol. flow, sensor fault [7] Valve actuator fault [8] Valve actuator, pos. feedb. fault [9] Valve actuator, no pos. feedb. [10] Relative setpoint, fault [11] Flow temp., setpoint fault [12] Diff. press. primary, sensor fault [13] Vol. flow, wrong flow direction [14] Vol. flow, air bubbles [15] Vol. flow, cannot reach max. value [16] Valve diff. press. above max. value [17] Vol. flow sensor, comm. error [18] Outside air temp., sensor fault [19] Vol. flow, cannot reach setpoint				
				Default	-	Register	20		



Monitoring

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
OphDev %Plt%'HVAC'OphDev	Control Valve	Operating hours device Accumulated operating hours of the device	Available in cloud		N	Address	180
	Flow Temp.		Write		N	R/W	R
	Heating Circuit		Unit		[h]	Resolution	2 h
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	999'999	Max.	65'535
				Default	0	Register	181
TotHVfl %Plt%'HVAC'TotHVfl	Control Valve	Total heating volume flow Accumulated volume flow of the device in heating operation (TRtPrim < TFIPrim)	Available in cloud		Y	Add.	Low value 190
	Flow Temp.		Write		N	R/W	R
	Heating Circuit		Unit		[m ³]	Res.	Low 0.01
	(Δp Control)					High	6.55350E+02
			Options	Value min.	0	Min.	0
				Value max.	20'000'000	Max.	65'535
			Default	0	Register	191 / 192	
TotCVfl %Plt%'HVAC'TotCVfl	Control Valve	Total cooling volume flow Accumulated volume flow of the device in cooling operation (TRtPrim > TFIPrim)	Available in cloud		Y	Add.	Low value 192
	Flow Temp.		Write		N	R/W	R
	Heating Circuit		Unit		[m ³]	Res.	Low 0.01
	(Δp Control)					High	6.55350E+02
			Options	Value min.	0	Min.	0
				Value max.	20'000'000	Max.	65'535
			Default	0	Register	193 / 194	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus			
TotHEngy %Pit%'HVAC'TotHEngy	Control Valve	Total heating energy Accumulated energy of the device in heating operation (TRtPrim < TFIPrim)	Available in cloud	Y	Add.	Low value	194	
	Flow Temp.					AV50	High value	195
			Write	N	R/W		R	
							Unit	[kWh]
			High	6.55350E+03				
(Δp Control)	Options	Value min.	0	Min.	0			
		Value max.	2'000'000'000		Max.	65'535		
	Default	0	Register	195 / 196				
TotCEngy %Pit%'HVAC'TotCEngy	Control Valve	Total cooling energy Accumulated energy of the device in cooling operation (TRtPrim > TFIPrim)	Available in cloud	Y	Add.	Low value	196	
	Flow Temp.					AV51	High value	197
			Write	N	R/W		R	
							Unit	[kWh]
			High	6.55350E+03				
(Δp Control)	Options	Value min.	0	Min.	0			
		Value max.	2'000'000'000		Max.	65'535		
	Default	0	Register	197 / 198				


Operation



Present Values


Object name	Obj. type/ID		Description	BACnet Properties			Modbus	
TRtPrim %Pit%TRtPrim	Control Valve	AI2	Primary return temperature Present value of local connected temperature sensor at B26.	Available in cloud	N	Address	12	
	Flow Temp.	-		Write	N	R/W	R	
	Heating Circuit			Unit	[°C]	Resolution	0.01 °C (offset -10 °C)	
	(Δp Control)			Options	Value min.	-10	Min.	0
				Value max.	150	Max.	16'000	
Default	-	Register	13					
TFIPrim %Pit%TFIPrim	Control Valve	AI3	Primary flow temperature Present value of local connected temperature sensor at B7.	Available in cloud	N	Address	11	
	Flow Temp.	-		Write	N	R/W	R	
	Heating Circuit			Unit	[°C]	Resolution	0.01 °C (offset -10 °C)	
	(Δp Control)			Options	Value min.	-10	Min.	0
				Value max.	150	Max.	16'000	
Default	-	Register	12					
HCSta %Pit%HVACVivCtiHCSta	Control Valve	MSV53	Heating/cooling state  Value calculated by the application! Based on the temperatures on B26 and B7, the valve decides if it is cooling (B26 < B7) or heating (B26 > B7). ⇒ Writing in the respective flow and energy accumulator objects.  Flow Temp. Control behavior depends on design temperatures, NOT on heating/cooling state.	Available in cloud	Y	Address	18	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit	MSV64		Unit	-	Resolution	-	
	(Δp Control)			Options	[1] Neither [2] Heating [3] Cooling			
				Default	-	Register	19	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
CtlSta %Pit%'HVAC'VlvCtl'CtlSta	Control Valve	Control state Based on selection for CtlMod , the failure state of the sensors and, provided limitations are active, the respective operation mode are determined – e.g. whether the valve switches from output control to volume flow if a temperature sensor fails.	Available in cloud	Y	Address	17	
	Flow Temp.		Write	N	R/W	R	
	Heating Circuit		Unit	-	Resolution	-	
	(Δp Control)		Options	[1] Position [2] Volume flow [3] Power [4] Maximum power limit [5] Minimum volume flow limit [6] Maximum volume flow limit [7] Min.return temp.limitation [8] Max.return temp.limitation [9] Flow/return temp.diff.limitation [10] Override			
			Default	-	Register	18	
PrSpSrc %Pit%'HVAC'PrSpSrc	Control Valve	Present setpoint source Shows the configured application and setpoint source. Currently selection between: <ul style="list-style-type: none"> [1]: Dynamic balancing valve with continuous analog signal on terminal X1; [2]: Dynamic balancing valve with setpoint via Modbus RTU (SpRelMdbs); [3]: Dynamic balancing valve with setpoint via BACnet IP (SpRel); [4]: Heating circuit control with local setpoint according to heating curve based on measured outside temperature; [5]: Supply temperature control with setpoint according to analog signal on terminal X1; [6]: Supply temperature control with setpoint via Modbus RTU (SpTFIMdbs); [7]: Supply temperature control with setpoint via BACnet IP; [8]: Differential pressure control with setpoint via BACnet IP. 	Available in cloud	N	Address	16	
	Flow Temp.		Write	N	R/W	-	
	Heating Circuit		Unit	-	Resolution	-	
	(Δp Control)		Options	[1] Relative setpoint terminal [2] Relative setpoint Modbus [3] Relative setpoint remote [4] Heat circuit outside temp. comp. [5] Flow temp. setpoint terminal [6] Flow temp. setpoint Modbus [7] Flow temp. setpoint remote [8] Diff. pressure setpoint remote			
			Default	[1] Relative setpoint terminal	Register	17	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
SpRel %Pit%'HVAC'VlvCtl'SpRel	Control Valve	AV16	Relative setpoint Setpoint to the device – the base for the calculation of the absolute setpoint PrSpVfl or PrSpPwr , depending on the operation mode selected.	Available in cloud	N	Address	5
	Flow Temp.			Write	Y	R/W	R
	Heating Circuit	-		Unit	[%]	Resolution	0.01 %
	(Δp Control)			Options	Value min.	0	Min.
				Value max.	100	Max.	10'000
			Default	0	Register	6	
PrAdaVflMax %Pit%'HVAC'VlvCtl'PrAdaVflMax	Control Valve	AV99	Present adapted maximum volume flow Represents the present adapted value of the maximum volume flow.	Available in cloud	N	Address	135
	Flow Temp.			Write	N	R/W	R
	Heating Circuit	-		Unit	[m³/h]	Resolution	0.01 m³/h
	(Δp Control)			Options	Value min.	0	Min.
				Value max.	500	Max.	28'800
			Default	-	Register	136	
PrSpVfl %Pit%'HVAC'VlvCtl'PrSpVfl	Control Valve	AV37	Present setpoint volume flow Present volume flow setpoint in volume flow control, either calculated from SpRel * VflMax , or resulting from an additional limitation.	Available in cloud	Y	Address	7
	Flow Temp.			Write	N	R/W	R/W
	Heating Circuit	AV69		Unit	[m³/h]	Resolution	0.01 m³/h
	(Δp Control)			Options	Value min.	0	Min.
				Value max.	1000	Max.	28'800
			Default	-	Register	8	
PrVfl %Pit%'HVAC'VlvCtl'PrVfl	Control Valve	AV39	Present volume flow Value measured by the flow sensor.	Available in cloud	Y	Address	6
	Flow Temp.			Write	N	R/W	R
	Heating Circuit	AV70		Unit	[m³/h]	Resolution	0.01 m³/h
	(Δp Control)			Options	Value min.	0	Min.
				Value max.	1000	Max.	50'000
			Default	-	Register	7	
PrSpPwr %Pit%'HVAC'VlvCtl'PrSpPwr	Control Valve	AV38	Present setpoint power Present output setpoint in output control, either calculated from SpRel * PwrMax , or resulting from an additional limitation.	Available in cloud	Y	Address	9
	Flow Temp.			Write	N	R/W	R/W
	Heating Circuit	-		Unit	[kW]	Resolution	0.1 kW
	(Δp Control)			Options	Value min.	0	Min.
				Value max.	10'000	Max.	65'536
			Default	-	Register	10	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus			
PrPwr %Pit%'HVAC'VlvCtl'PrPwr	Control Valve	AV40	Present power Output calculated as a product of PrVfi, TRtPrim and TFIPrim.	Available in cloud	Y	Address	8	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit	AV71		Unit	[kW]	Resolution	0.1 kW	
	(Δp Control)			Options	Value min.	0	Min.	0
				Value max.	10'000	Max.	65'536	
Default	-	Register	9					
PrDiffPVlv %Pit%'HVAC'VlvCtl'PrDiffPVlv	Control Valve	AV41	Present differential pressure of valve Value calculated from present volume flow and present position (= kv value).  Just a calculation, not a measurement!	Available in cloud	N	Address	10	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit	AV66		Unit	[kPa]	Resolution	0.1 kPa	
	(Δp Control)			Options	Value min.	0	Min.	0
				Value max.	700	Max.	7000	
Default	-	Register	11					
VlvPosFb %Pit%'VlvPosFb	Control Valve	AI1	Valve position feedback Present control valve position based on the feedback signal on terminal U.	Available in cloud	Y	Address	4	
	Flow Temp.			Write	N	R/W	R	
	Heating Circuit			Unit	[%]	Resolution	0.01 %	
	(Δp Control)			Options	Value min.	0	Min.	0
		Value max.		100	Max.	10'000		
Default	0	Register	5					

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
VlvTyp %Plt%'HVAC'VlvCtl'VlvTyp	Control Valve	Valve type Shows the type of the installed Intelligent Valve  Object is written by the application. If no flow sensor is connected: [1] EVG4U10E015	Available in cloud	N	Address	-	
	Flow Temp.		Write	N	R/W		
	Heating Circuit		Unit	-	Resolution		
	(Δp Control)		Options	[1] EVG4U10E015 [2] EVG4U10E020 [3] EVG4U10E025 [4] EVG4U10E032 [5] EVG4U10E040 [6] EVG4U10E050 [7] EVF4U20E065 [8] EVF4U20E080 [9] EVF4U20E100 [10] EVF4U20E125 [12] EXG4U10E015 [13] EXG4U10E020 [14] EXG4U10E025 [15] EXG4U10E032 [16] EXG4U10E040 [17] EXG4U10E050 [18] EXF4U20E065 [19] EXF4U20E080 [20] EXF4U20E100	Min.		
					Max.		
			Default	-	Register		
NomPipeSize %Plt%'HVAC'VlvCtl'NomPipeSize	Control Valve	Nominal pipe size Line size of the installed Intelligent Valve  Object is written by the application.	Available in cloud	N	Address	112	
	Flow Temp.		Write	N	R/W	R	
	Heating Circuit		Unit	[mm]	Resolution	1 mm	
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	500	Max.	500
			Default	-	Register	113	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
VovrMod %Pt%'HVAC'VlvCtl'VovrMod	Control Valve	Valve override mode Allows overriding the current control state manually.  Object is written by Modbus or manually.	Available in cloud	N	Address	1	
	Flow Temp.		MSV92	Write	Y	R/W	R/W
	Heating Circuit		-	Unit	-	Resolution	-
	(Δp Control)			Options [1] None [2] Fully open [3] Fully close [4] Minimum volume flow [5] Nominal volume flow [6] Maximum volume flow [7] Design power [8] Maximum power [9] Keep position [10] Cancel	[1] None [2] Fully open [3] Fully close [4] Minimum volume flow [5] Nominal volume flow [6] Maximum volume flow [7] Design power [8] Maximum power [9] Keep position		
			Default	[1] None	Register	2	

Counters (Diagnostics)

Object name	Obj. type/ID	Description	BACnet Properties		Modbus				
OphDev %Plt%'HVAC'OphDev	Control Valve	Operating hours device Accumulated operating hours of the device	Available in cloud		N	Address	180		
	Flow Temp.		Write		N	R/W	R		
	Heating Circuit		AV47	Unit		[h]	Resolution	2 h	
	(Δp Control)		Options		Value min.	0	Min.	0	
					Value max.	999'999	Max.	65'535	
			Default		0	Register	181		
TotHVfl %Plt%'HVAC'TotHVfl	Control Valve	Total heating volume flow Accumulated volume flow of the device in heating operation (TRtPrim < TFIPrim)	Available in cloud		Y	Add.	Low value	190	
	Flow Temp.						High value	191	
	Heating Circuit		AV48	Write		N	R/W	R	
	(Δp Control)		Unit		[m ³]	Res.	Low	0.01	
						High	6.55350E+02		
			Options		Value min.	0	Min.	0	
					Value max.	20'000'000	Max.	65'535	
			Default		0	Register	191 / 192		
TotCVfl %Plt%'HVAC'TotCVfl	Control Valve	Total cooling volume flow Accumulated volume flow of the device in cooling operation (TRtPrim > TFIPrim)	Available in cloud		Y	Add.	Low value	192	
	Flow Temp.						High value	193	
	Heating Circuit		AV49	Write		N	R/W	R	
	(Δp Control)		Unit		[m ³]	Res.	Low	0.01	
						High	6.55350E+02		
			Options		Value min.	0	Min.	0	
					Value max.	20'000'000	Max.	65'535	
			Default		0	Register	193 / 194		

Object name	Obj. type/ID	Description	BACnet Properties		Modbus				
TotHEngy %Pit%'HVAC'TotHEngy	Control Valve	Total heating energy Accumulated energy of the device in heating operation (TRtPrim < TFIPrim)	Available in cloud		Y	Add.	Low value	194	
								High value	195
	Flow Temp.		AV50	Write		N	R/W	R	
	Heating Circuit			Unit		[kWh]	Res.	Low	0.1
	(Δp Control)			Options		Value min.	0	Min.	0
				Value max.	2'000'000'000	Max.	65'535		
			Default		0	Register	195 / 196		
TotCEngy %Pit%'HVAC'TotCEngy	Control Valve	Total cooling energy Accumulated energy of the device in cooling operation (TRtPrim > TFIPrim)	Available in cloud		Y	Add.	Low value	196	
								High value	197
	Flow Temp.		AV51	Write		N	R/W	R	
	Heating Circuit			Unit		[kWh]	Res.	Low	0.1
	(Δp Control)			Options		Value min.	0	Min.	0
				Value max.	2'000'000'000	Max.	65'535		
			Default		0	Register	197 / 198		

Alarms



Intelligent Valve does not provide BACnet alarming. However, a few binary values are available, each representing an individual alarm, as well as the multi-state value **MnFit**, representing the highest ranked current fault, including state text.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
MnFit %Pit%'HVAC'AlmBd!'MnFit	Control Valve	Main fault Shows the main fault of the device	Available in cloud	Y	Address	19	
	Flow Temp.		Write	N	R/W	R	
	Heating Circuit		Unit	-	Resolution	-	
	(Δp Control)		Options	[1] No fault [2] Prim. flow temp., sensor fault [3] Prim. return temp., sensor fault [4] Flow temp., sensor fault [5] Return temp., sensor fault [6] Vol. flow, sensor fault [7] Valve actuator fault [8] Valve actuator, pos. feedb. fault [9] Valve actuator, no pos. feedb. [10] Relative setpoint, fault [11] Flow temp., setpoint fault [12] Diff. press. primary, sensor fault [13] Vol. flow, wrong flow direction [14] Vol. flow, air bubbles [15] Vol. flow, cannot reach max. value [16] Valve diff. press. above max. value [17] Vol. flow sensor, comm. error [18] Outside air temp., sensor fault [19] Vol. flow, cannot reach setpoint			
			Default	-	Register	20	
Alm1004 %Pit%'HVAC'AlmBd!'Alm1004	Control Valve	Outside air temperature, sensor fault	Available in cloud	N	-		
	Flow Temp.		Write	N			
	Heating Circuit		Unit	-			
	(Δp Control)		Options	[1] Active [2] Inactive			
			Default	-			

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
Alm1050 %Pit%'HVAC'AlmBdl'Alm1050	Control Valve	BV7	Primary flow temperature, sensor fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1051 %Pit%'HVAC'AlmBdl'Alm1051	Control Valve	BV8	Primary return temperature, sensor fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1052 %Pit%'HVAC'AlmBdl'Alm1052	Control Valve	BV9	Flow temperature, sensor fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1054 %Pit%'HVAC'AlmBdl'Alm1054	Control Valve	BV10	Volume flow, sensor fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
Alm1055 %Pit%HVAC'AlmBdl'Alm1055	Control Valve	BV11	Valve actuator fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1056 %Pit%HVAC'AlmBdl'Alm1056	Control Valve	BV12	Valve actuator, position feedback fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1057 %Pit%HVAC'AlmBdl'Alm1057	Control Valve	BV13	Valve actuator, no position feedback	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1058 %Pit%HVAC'AlmBdl'Alm1058	Control Valve	BV14	Relative setpoint, fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
Alm1059 %Pit%'HVAC'AlmBdl'Alm1059	Control Valve	BV15	Flow temperature, setpoint fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm1060 %Pit%'HVAC'AlmBdl'Alm1060	Control Valve	BV16	Diff. pressure primary, sensor fault	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm2050 %Pit%'HVAC'AlmBdl'Alm2050	Control Valve	BV17	Volume flow, wrong flow direction	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm2051 %Pit%'HVAC'AlmBdl'Alm2051	Control Valve	BV18	Volume flow, air bubbles in hydraulics	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
Alm2052 %Pit%'HVAC'AlmBdl'Alm2052	Control Valve	BV19	Volume flow, cannot reach maximum value	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm2053 %Pit%'HVAC'AlmBdl'Alm2053	Control Valve	BV20	Valve differential pressure above max. value	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm2054 %Pit%'HVAC'AlmBdl'Alm2054	Control Valve	BV23	Volume flow, cannot reach setpoint	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	
Alm3050 %Pit%'HVAC'AlmBdl'Alm3050	Control Valve	BV21	Volume flow sensor, communication error	Available in cloud	N	-
	Flow Temp.			Write	N	
	Heating Circuit			Unit	-	
	(Δp Control)			Options	[1] Active [2] Inactive	
				Default	-	

Heating circuit



Heating Circuit is empty for these applications

- Dynamic control valve
- Differential pressure control

Objects are only activated when applications **Flow temp. setpoint / Heating Circuit** are selected.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus			
TOa %Pit%HVAC'Hcr'TOa	Control Valve	Outside air temperature Shows the present value of the outside temperature measured by the sensor connected to X1	Available in cloud		-			
	Flow Temp.		N					
	Heating Circuit		N					
			Unit				[°C]	
			Options	Value min.			-50	
		Value max.	50					
	(Δp Control)	-	Default		-			
SpTFI %Pit%HVAC'Hcr'SpTFI	Control Valve	Flow temperature setpoint Setpoint for supply temperature control loop	Available in cloud		N	Address	14	
	Flow Temp.		Y		R/W	R		
	Heating Circuit		Unit		[°C]		Resolution	0.01 °C
			Options	Value min.	0	Min.	0	
				Value max.	120	Max.	12'000	
	(Δp Control)	AV14	Default		-	Register	15	
TFI %Pit%TFI	Control Valve	Flow temperature Shows the present secondary flow temperature (sensor connected to X3)	Available in cloud		N	Address	15	
	Flow Temp.		N		R/W	R		
	Heating Circuit		Unit		[°C]		Resolution	0.01 °C (offset -10 °C)
			Options	Value min.	-10	Min.	0	
				Value max.	150	Max.	16'000	
	(Δp Control)	-	Default		-	Register	16	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
ToaDsgn %Pit%HVAC'Hcr'ToaDsgn	Control Valve	- Design outside temperature Minimum design outside temperature for the heating curve setpoint SpTFIDs	Available in cloud		N	-	
	Flow Temp.		Write		Y		
	Heating Circuit		AV11	Unit			[°C]
	(Δp Control)		-	Options	Value min.		-40
					Value max.		20
			Default		-10		
ToaHi %Pit%HVAC'Hcr'ToaHi	Control Valve	- Outside temperature high Maximum design outside temperature for the heating curve SpTFIHi	Available in cloud		N	-	
	Flow Temp.		Write		Y		
	Heating Circuit		AV10	Unit			[°C]
	(Δp Control)		-	Options	Value min.		-40
					Value max.		20
			Default		15		
SpTFIDs %Pit%HVAC'Hcr'SpTFIDs	Control Valve	- Flow temp. setp for design outside temp. Flow temperature setpoint at the design outside temperature	Available in cloud		N	-	
	Flow Temp.		Write		Y		
	Heating Circuit		AV9	Unit			[°C]
	(Δp Control)		-	Options	Value min.		0
					Value max.		90
			Default		60		
SpTFIHi %Pit%HVAC'Hcr'SpTFIHi	Control Valve	- Flow temp. setp for high outside temp. Flow temperature setpoint at the high outside temperature	Available in cloud		N	-	
	Flow Temp.		Write		Y		
	Heating Circuit		AV8	Unit			[°C]
	(Δp Control)		-	Options	Value min.		0
					Value max.		90
			Default		30		
DrygFncSta %Pit%HVAC'Hcr'DrygFncSta	Control Valve	- Drying function state Shows if the drying function for the plant was executed or not.	Available in cloud		N	-	
	Flow Temp.		Write		N		
	Heating Circuit		MSV87	Unit			-
	(Δp Control)		-	Options			[1] Not executed [2] Running [3] Executed
				Default			[1] Not executed

Room Heating



Room Heating is empty for these applications:

- Dynamic control valve
- Supply temperature control
- Differential pressure control

Objects are only activated when application **Heating Circuit** is selected.

Object name	Obj. type/ID		Description	BACnet Properties		Modbus
RopModSched %Pit%HVAC'Hcr'RopModSched	Control Valve	-	Room operation mode scheduler Opens the weekly scheduler for the heating circuit	Available in cloud	N	-
	Flow Temp.	-		Write	N	
	Heating Circuit	Schedule 1		Unit	-	
	(Δp Control)	-		Options	Opens scheduler	
				Default	-	
PrROpMod %Pit%HVAC'Hcr'PrROpMod	Control Valve	-	Present room operation mode Shows the current room operation mode	Available in cloud	N	-
	Flow Temp.	-		Write	N	
	Heating Circuit	MSV80		Unit	-	
	(Δp Control)	-		Options	[1] Comfort [2] Pre-Comfort [3] Economy [4] Protection	
				Default	-	
RsnPrOpMod %Pit%HVAC'Hcr'RsnPrOpMod	Control Valve	-	Reason for present room operation mode Shows whether the scheduler or a manual overwrite command defines the current room operation mode	Available in cloud	N	-
	Flow Temp.	-		Write	N	
	Heating Circuit	MSV79		Unit	-	
	(Δp Control)	-		Options	[1] Exception [2] Room low temperature protection [3] Operating mode selection [4] Manual operating mode selection [5] Heating limit [6] OSSC model [7] Heating limit economy [8] Quick setback [9] Scheduler	
				Default	-	

Object name	Obj. type/ID		Description	BACnet Properties		Modbus
ROpMod %Plt%HVAC'Hcr'ROpMod	Control Valve	-	Room operation mode Shows the room operation mode and allows to switch it manually. A manual switch will last until the next power dip or a deactivation of the manual overwrite.	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	MSV55		Unit	-	
	(Δp Control)	-		Options	[1] Comfort [2] Pre-Comfort [3] Economy [4] Protection	
				Default	-	
SpHCmf %Plt%HVAC'Hcr'SpHCmf	Control Valve	-	Heating setpoint for Comfort Room temperature setpoint for room operation mode Comfort	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	AV2		Unit	[°C]	
	(Δp Control)	-		Options	Value min. 6 Value max. 36	
				Default	21	
SpHPcf %Plt%HVAC'Hcr'SpHPcf	Control Valve	-	Heating setpoint for Pre-Comfort Room temperature setpoint for room operation mode Pre-Comfort	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	AV3		Unit	[°C]	
	(Δp Control)	-		Options	Value min. 6 Value max. 36	
				Default	19	
SpHEco %Plt%HVAC'Hcr'SpHEco	Control Valve	-	Heating setpoint for Economy Room temperature setpoint for room operation mode Economy	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	AV4		Unit	[°C]	
	(Δp Control)	-		Options	Value min. 6 Value max. 36	
				Default	16	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
SpHPrt %Plt%HVAC'Hcr'SpHPrt	Control Valve	-	Heating setpoint for Protection Room temperature setpoint for room operation mode Protection	Available in cloud	N	-	
	Flow Temp.	-		Write	N		
	Heating Circuit	AV5		Unit	[°C]		
	(Δp Control)	-		Options	Value min.		6
					Value max.		36
			Default	10			
SbstTR %Plt%HVAC'Hcr'SbstTR	Control Valve	-	Substitute room temperature	Available in cloud	N	-	
	Flow Temp.	-		Write	Y		
	Heating Circuit	AV87		Unit	[°C]		
	(Δp Control)	-		Options	Value min.		-30
					Value max.		50
			Default	-			

Settings for Hydraulic Balancing

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
Siftst %Pit%'HVAC'VlvCtl'Siftst	Control Valve	Self-test Starts or stops the self-test sequence, which checks the flow sensor, goes to maximum volume flow VfiMax , to nominal flow VfiNom and finally to closed position to check operation.	Available in cloud	N	Address	-
	Flow Temp.		Write	Y	R/W	
	Heating Circuit		Unit	-	Resolution	
	(Δp Control)		Options	[1] Ready [2] Start [3] Stop	Min.	
			Default	-	Max.	
					Register	
FrcVfiMax %Pit%'HVAC'VlvCtl'FrcVfiMax	Control Valve	Force maximum volume flow Forces the valve to maximum volume flow VfiMax for 10 minutes.	Available in cloud	N	Address	-
	Flow Temp.		Write	Y	R/W	
	Heating Circuit		Unit	-	Resolution	
	(Δp Control)		Options	[1] Ready [2] Start [3] Stop	Min.	
			Default	-	Max.	
					Register	
VfiNomVlv %Pit%'HVAC'VlvCtl'VfiNomVlv	Control Valve	Nominal volume flow for valve Nominal volume flow of the installed Intelligent Valve.	Available in cloud	N	Address	120
	Flow Temp.		Write	N	R/W	R/W
	Heating Circuit		Unit	[m ³ /h]	Resolution	0.01 m ³ /h
	(Δp Control)		Options	Value min. 0 Value max. 1000	Min.	0
			Default	-	Max.	28'800
					Register	121
VfiMax %Pit%'HVAC'VlvCtl'VfiMax	Control Valve	Maximum volume flow Absolute limitation setpoint for the maximum volume flow – value range depends on valve line size.	Available in cloud	Y	Address	122
	Flow Temp.		Write	Y	R/W	R
	Heating Circuit		Unit	[m ³ /h]	Resolution	0.01 m ³ /h
	(Δp Control)		Options	Value min. ... Value max. ...	Min.	0
			Default	VfiNomVlv	Max.	28'800
					Register	123

Object name	Obj. type/ID	Description	BACnet Properties		Modbus			
VfIMaxRel %Pit%'HVAC'VlvCtl'VfIMaxRel	Control Valve	AV23	Relative maximum volume flow (not available for application differential pressure control)	Available in cloud	N	Address	121	
	Flow Temp.			Write	Y	R/W	R/W	
	Heating Circuit	AV68	Relative limitation setpoint for the maximum volume flow – sets the maximum volume flow setpoint relative to VfINomVlv.	Unit	[%]	Resolution	0.01 %	
	(Δp Control)			Options	Value min.	30	Min.	0
				Value max.	100	Max.	3000	
		Default		Register	122			
EnVfIMin %Pit%'HVAC'VlvCtl'EnVfIMin	Control Valve	BV4	Enable minimum volume flow (not available for application differential pressure control)	Available in cloud	Y	Address	123	
	Flow Temp.			Write	Y	R/W	R/W	
	Heating Circuit		Switches the minimum volume flow limitation function (VfIMin/VfIMinRel) on and off: <ul style="list-style-type: none"> [1] No: switched off; [2] Yes: switched on. 	Unit	-	Resolution	-	
	(Δp Control)			Options	[1] No [2] Yes		0 = Disabled 1 = Enabled	
				Default		Register	124	
VfIMin %Pit%'HVAC'VlvCtl'VfIMin	Control Valve	AV24	Minimum volume flow (not available for application differential pressure control)	Available in cloud	Y	Address	125	
	Flow Temp.			Write	Y	R/W	R	
	Heating Circuit		Limitation setpoint for the minimum volume flow – depends on valve line size.	Unit	[m ³ /h]	Resolution	0.01 m ³ /h	
	(Δp Control)			Options	Value min.	...	Min.	0
				Value max.	...	Max.	28'800	
		Default		Register	126			
VfIMinRel %Pit%'HVAC'VlvCtl'VfIMinRel	Control Valve	AV25	Relative minimum volume flow (not available for application differential pressure control)	Available in cloud	N	Address	124	
	Flow Temp.			Write	Y	R/W	R/W	
	Heating Circuit		Limitation setpoint for the minimum volume flow – depends on valve line size.	Unit	[%]	Resolution	0.01 %	
	(Δp Control)			Options	Value min.	2.5	Min.	250
				Value max.	20	Max.	2000	
		Default		Register	125			

Control Settings for Control Behavior (“Valve”)

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
VlvDsgn %Pit%'HVAC'VlvCtl'VlvMountPos	Control Valve	Valve design States whether a 2-port or 3-port valve is installed.	Available in cloud	N	Address	111
	Flow Temp.		Write	-	R/W	R/W
	Heating Circuit		Unit	-	Resolution	-
	(Δp Control)		Options	[1] 2-port [2] 3-port		
			Default	[1] 2-port	Register	112
VlvMountPos %Pit%'HVAC'VlvCtl'VlvMountPos	Control Valve	Valve mounting position States whether the valve is installed in flow or return – currently, the application does not require this information.	Available in cloud	N	Address	110
	Flow Temp.		Write	N	R/W	R/W
	Heating Circuit		Unit	-	Resolution	-
	(Δp Control)		Options	[1] Flow [2] Return		
			Default	[2] Return	Register	111
CtlMod %Pit%'HVAC'VlvCtl'CtlMod	Control Valve	Control mode (only relevant for application dynamic control valve) Define the operation: <ul style="list-style-type: none"> [1] Position mode = kvs value [2] Volume flow control = ePICV [3] Output control = energy valve In all operation modes, the maximum flow limitation is active, and the output measuring and energy accumulation is also active.	Available in cloud	Y	Address	113
	Flow Temp.		Write	Y	R/W	R/W
	Heating Circuit		Unit	-	Resolution	-
	(Δp Control)		Options	[1] Position [2] Volume flow [3] Power		
			Default	[2] Volume flow	Register	114
EnAdaVfiMax %Pit%'HVAC'VlvCtl'EnAdaVfiMax	Control Valve	Enable adapted maximum volume flow Activated a function which learns the flow requirement for the specific consumer and adapts the maximum volume flow VfiMax dynamically. <ul style="list-style-type: none"> [1] No: switched off [2] Yes: switched on 	Available in cloud	N	Address	133
	Flow Temp.		Write	Y	R/W	R/W
	Heating Circuit		Unit	-	Resolution	-
	(Δp Control)		Options	[1] No [2] Yes		0 = Disabled 1 = Enabled
			Default	[1] No	Register	134

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
CmpMod %Plt%'HVAC'VlvCtl'CmpMod	Control Valve	MSV41 Compensation mode (only relevant for application dynamic control valve) Define the volume flow characteristic ($X1/Vfl$) in volume flow control. The valve operates either: <ul style="list-style-type: none"> [1] as a linear; [2] equal percentage valve; or [3] compensates a dedicated heat exchanger characteristic. 	Available in cloud		N	Address	114
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		-	Resolution	-
	(Δp Control)		Options	[1] Volume flow linear [2] Volume flow exponential [3] Heat exchanger characteristic			
			Default	[1] Volume flow linear	Register	115	
CmpVflCoef %Plt%'HVAC'VlvCtl'CmpVflCoef	Control Valve	AV31 Compensation volume flow coefficient (only relevant for application dynamic control valve) Exponent value n_{gl} for a logarithmic flow curve, e.g. $n_{gl} = 3$.	Available in cloud		N	Address	115
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		-	Resolution	0.01
	(Δp Control)		Options	Value min.	1	Min.	100
				Value max.	4	Max.	400
			Default		3	Register	116

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
CmpHxCoeff %Plt%'HVAC'VlvCtl'CmpHxCoeff	Control Valve	AV32 Compensation heat exchanger coefficient (only relevant for application dynamic control valve) A-value for if the flow curve should correct a dedicated heat exchanger curve.	Available in cloud		N	Address	116
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		-	Resolution	0.01
	(Δp Control)		Options	Value min.	0.1	Min.	10
				Value max.	1	Max.	100
		Default		0.3	Register	117	
DiffPPrimPrcv2 %Plt%'DiffPPrimPrcv2	Control Valve	AI58 Process value 2 for differential pressure primary (only relevant for application differential pressure control and with signal type selection for X3 Dp10V(1Mpa-Max)) If, for differential pressure control , a freely configurable pressure sensor is selected with DiffPPrimPrcv2 , the user can define the measuring range of this differential pressure sensor.	Available in cloud		N	Address	-
	Flow Temp.		Write		Y	R/W	
	Heating Circuit		Unit		[kPa]	Resolution	
	(Δp Control)		Options	Value min.	0	Min.	
				Value max.	1000	Max.	
		Default		1000	Register		

Settings for Limitation Functions and Output Control – Dynamic Control Valve, Supply Temperature Control and Heating Circuit

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
TFIPrimDsgn %Plt%'HVAC'VlvCt!'TFIPrimDsgn	AV29	Design primary flow temperature Primary flow temperature which was used for design of the consumer and for the valve sizing.	Available in cloud		Y	Address	140
			Write		Y	R/W	-
			Unit		[°C]	Resolution	0.01 °C (offset -10 °C)
			Options	Value min.	-10	Min.	0
				Value max.	120	Max.	13'000
			Default		55	Register	141
TRtPrimDsgn %Plt%'HVAC'VlvCt!'TRtPrimDsgn	AV30	Design primary return temperature Primary return temperature which was used for design of the consumer and for the valve sizing.	Available in cloud		Y	Address	141
			Write		Y	R/W	-
			Unit		[°C]	Resolution	0.01 °C (offset -10 °C)
			Options	Value min.	-10	Min.	0
				Value max.	120	Max.	13'000
			Default		40	Register	142
PwrDsgn %Plt%'HVAC'VlvCt!'PwrDsgn	AV26	Design power Calculated design output = valve fully open at maximum flow and design temperatures reached (product of VfIMax , TFIPrimDsgn and TRtPrimDsgn).	Available in cloud		N	Address	142
			Write		N	R/W	R
			Unit		[kW]	Resolution	0.1 kW
			Options	Value min.	0	Min.	0
				Value max.	10'000	Max.	65'535
			Default		-	Register	143
PwrMax %Plt%'HVAC'VlvCt!'PwrMax	AV27	Maximum power Absolute limitation value for the output – with this value, a temporary limitation of the output can be set below design values.	Available in cloud		Y	Address	144
			Write		Y	R/W	R
			Unit		[kW]	Resolution	0.1 kW
			Options	Value min.	0	Min.	0
				Value max.	10'000	Max.	65'535
			Default		PwrDsgn	Register	145

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
PwrMaxRel %Pit%'HVAC'VlvCtl'PwrMaxRel	AV28	Relative maximum power Relative limitation value for the output. PwrDsgn is 100%. Any value below limits the maximum power below design output.	Available in cloud	N	Address	143	
			Write	Y	R/W	R/W	
			Unit	[%]	Resolution	0.01 %	
			Options	Value min.	0	Min.	0
				Value max.	100	Max.	10'000
			Default	100	Register	144	
EnTRtLm %Pit%'HVAC'VlvCtl'EnTRtLm	BV5	Enable return temperature limitation Switches the return temperature limitation function (SpHTRt/SpCTRt) on and off. <ul style="list-style-type: none"> [1] Active: switched on [2] Inactive: switched off 	Available in cloud	Y	Address	160	
			Write	Y	R/W	R/W	
			Unit	-	Resolution	-	
			Options	[1] Active [2] Inactive		0 = Disabled 1 = Enabled	
			Default	[2] Inactive	Register	161	
			SpHTRt %Pit%'HVAC'VlvCtl'SpHTRt	AV52	Return temperature setpoint for heating Temperature limitation setpoint to activate the maximum return temperature limitation in heating mode	Available in cloud	Y
Write	Y	R/W				R/W	
Unit	[°C]	Resolution				0.01 °C	
Options	Value min.	0				Min.	0
	Value max.	100				Max.	10'000
Default	40	Register				162	
SpCTRt %Pit%'HVAC'VlvCtl'SpCTRt	AV53	Return temperature setpoint for cooling Temperature limitation setpoint to activate the minimum return temperature limitation in cooling mode	Available in cloud	Y	Address	162	
			Write	Y	R/W	R/W	
			Unit	[°C]	Resolution	0.01 °C	
			Options	Value min.	0	Min.	0
				Value max.	100	Max.	10'000
			Default	12	Register	163	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
GainTRtCtr %Plt%'HVAC'VlvCtl'GainTRtCtr	AV62	Return temperature limitation gain Gain for the return temperature limitation controller <ul style="list-style-type: none"> 0 = slow 10 = aggressive 	Available in cloud		N	Address	163
			Write		Y	R/W	R/W
			Unit		[%/°C]	Resolution	0.01 %/°C
			Options	Value min.	0	Min.	0
				Value max.	10	Max.	1000
			Default		0	Register	164
TnTRtCtr %Plt%'HVAC'VlvCtl'TnTRtCtr	PIV5	Return temperature limitation "Nachstellzeit" Reset time to configure the return temperature limitation controller	Available in cloud		N	Address	164
			Write		Y	R/W	R/W
			Unit		[s]	Resolution	1 s
			Options	Value min.	1	Min.	1
				Value max.	600	Max.	600
			Default		0	Register	165
EnTDiffFIRtLm %Plt%'HVAC'VlvCtl'EnTDiffFIRtLm	BV24	Enable flow/return temperature difference limitation Switch the ΔT limitation function (SpHTRt/SoCTRt) on and off <ul style="list-style-type: none"> [1] Active = switched on [2] Inactive = switched off 	Available in cloud		N	Address	165
			Write		Y	R/W	R/W
			Unit		-	Resolution	-
			Options		[1] Active [2] Inactive		0 = Disabled 1 = Enabled
			Default		[2] Inactive	Register	166
			SpTDiffFIRtLm %Plt%'HVAC'VlvCtl'SpTDiffFIRtLm	AV92	Setpoint flow/return temperature difference limitation ΔT limitation setpoint to activate the maximum return temperature limitation in heating mode	Available in cloud	
Write		Y				R/W	R/W
Unit		[K]				Resolution	0.01 K
Options	Value min.	0				Min.	0
	Value max.	40				Max.	4000
Default		6				Register	167

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
GainTDFIRtCtr %Plt%'HVAC'VlvCtl'GainTDFIRtCtr	AV93	Flow/return temperature difference control gain Gain for ΔT limitation controller <ul style="list-style-type: none"> • 0 = slow • 10 = aggressive 	Available in cloud		N	Address	168
			Write		Y	R/W	R/W
			Unit		[%/K]	Resolution	0.01 %/K
			Options	Value min.	0	Min.	0
				Value max.	10	Max.	1000
			Default		2	Register	169
TnTDiffFIRtCtr %Plt%'HVAC'VlvCtl'TnTDiffFIRtCtr	PIV11	ΔT limitation "Nachstellzeit" Reset time to configure the return temperature limitation controller	Available in cloud		N	Address	169
			Write		Y	R/W	R/W
			Unit		[s]	Resolution	1 s
			Options	Value min.	1	Min.	1
				Value max.	600	Max.	600
			Default		0	Register	170

Settings for Limitation Functions and Output Control - Differential Pressure Control

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
SpDiffP %Plt%'HVAC'VlvCtl'SpDiffP	AV21	Setpoint for differential pressure control Can be set manually in ABT Go to a fixed value or remotely via BACnet IP.	Available in cloud		-	
						N
			Write			Y
			Unit			[kPa]
			Options	Value min.		20
				Value max.		500
Default		40				

Settings for Heating Control



This section is empty for these applications:

- Dynamic control valve
- Differential pressure control

Objects are only displayed and accessible when applications **Flow temperature control** or **Heating circuit** are selected.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus
SpTFIMaxHcr %Plt%HVAC'Hcr'SpTFIMaxHcr	Control Valve	Max.flow temp.setpoint for heat.circ. Defines the maximum flow temperature for the heating circuit – ensures that the system does not overheat under rare, exceptionally low outside temperatures	Available in cloud		-
	Flow Temp.		N		
	Heating Circuit		AV13		
	(Δp Control)		-		
			Write	Y	
			Unit	[°C]	
			Options	Value min.	0
				Value max.	90
			Default		60
SpTFIMinHcr %Plt%HVAC'Hcr'SpTFIMinHcr	Control Valve	Min.flow temp.setpoint for heat.circ. Defines the minimum flow temperature for the heating circuit – ensures that the system switches off under high outside temperatures	Available in cloud		-
	Flow Temp.		N		
	Heating Circuit		AV12		
	(Δp Control)		-		
			Write	Y	
			Unit	[°C]	
			Options	Value min.	0
				Value max.	90
			Default		10
ExpRad %Plt%HVAC'Hcr'ExpRad	Control Valve	Radiator exponent Exponent which considers the non-linear heat transmission of the room heating system – values: <ul style="list-style-type: none"> • Underfloor system 1.05 • Radiator 1.3 	Available in cloud		-
	Flow Temp.		N		
	Heating Circuit		AV88		
	(Δp Control)		-		
			Write	Y	
			Unit	-	
			Options	Value min.	1
				Value max.	2
			Default		1.3

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
TcnBldg %Pit%HVAC'Hcr'TcnBldg	Control Valve	-	Time constant of building Describes how fast the room temperature reaches outside temperature after switching off the heating system	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	PIV7		Unit	[h]		
	(Δp Control)	-		Options	Value min.		0
					Value max.		100
			Default	10			
HtgLm %Pit%HVAC'Hcr'HtgLm	Control Valve	-	Heating limit Describes the outside temperature when heating is switched off in Comfort and Pre-Comfort room operation mode	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	AV89		Unit	[°C]		
	(Δp Control)	-		Options	Value min.		-5
					Value max.		25
			Default	17			
HtgLmEco %Pit%HVAC'Hcr'HtgLmEco	Control Valve	-	Heating limit for Economy Describes the outside temperature when heating is switched off in Economy and Protection room operation mode	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	AV90		Unit	[°C]		
	(Δp Control)	-		Options	Value min.		-5
					Value max.		25
			Default	5			
EnPitFrPrt %Pit%HVAC'Hcr'EnPitFrPrt	Control Valve	-	Enable plant frost protection	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	BV25		Unit	-		
	(Δp Control)	-		Options	[1] No		
					[2] Yes		
			Default	-			
DlyOffHcrPu %Pit%HVAC'Hcr'DlyOffHcrPu	Control Valve	-	Switch-off delay for heating circuit pump	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	PIV12		Unit	[s]		
	(Δp Control)	-		Options	Value min.		0
					Value max.		3600
			Default	300			

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
EnKick %Pit%HVAC'Hcr'EnKick	Control Valve	Enable kick Defines whether the secondary pump connected to Q1 should receive a pimp kick during down times or not	Available in cloud		N	Address	150
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		-	Resolution	-
	(Δp Control)		Options		[1] No [2] Yes		0 = Disabled 1 = Enabled
			Default		[2] Yes	Register	151
GainHcrTFIVlvc %Pit%HVAC'Hcr'GainHcrTFIVlvc	Control Valve	Gain flow temperature control valve pos. for heating circuit Defines the gain for the supply temperature control loop	Available in cloud		N	Address	151
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		[K]	Resolution	0.01 K
	(Δp Control)		Options	Value min.	0	Min.	0
				Value max.	50	Max.	5000
		Default		10	Register	152	
TnHcrTFIVlvc %Pit%HVAC'Hcr'TnHcrTFIVlvc	Control Valve	Tn flow temperature control valve pos. for heating circuit Reset time (" <i>Nachstellzeit</i> ")	Available in cloud		N	Address	152
	Flow Temp.		Write		Y	R/W	R/W
	Heating Circuit		Unit		[s]	Resolution	1 s
	(Δp Control)		Options	Value min.	1	Min.	1
				Value max.	600	Max.	600
		Default		60	Register	153	
DrygFunct %Pit%HVAC'Hcr'DrygFunct	Control Valve	Drying function	Available in cloud		N	-	
	Flow Temp.		Write		Y		
	Heating Circuit		Unit		-		
	(Δp Control)		Options		[1] Off [2] Constant [3] Profile		
			Default		[1] Off		

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
SpTFIDrygConM %Plt%HVAC'Hcr'SpTFIDrygConM	Control Valve	-	Flow temperature setpoint for drying constant mode	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	AV98		Unit	[°C]		
	(Δp Control)	-		Options	Value min.		20
					Value max.		80
			Default	45			
DrygFunctSta %Plt%HVAC'Hcr'DrygFunctSta	Control Valve	-	Drying function state Shows if the drying function for the plant was executed or not.	Available in cloud	N	-	
	Flow Temp.			Write	N		
	Heating Circuit	AV87		Unit	-		
	(Δp Control)	-		Options	[1] Not executed		
					[2] Running		
			[3] Executed				
			Default	[1] Not executed			
TiEldDryg %Plt%HVAC'Hcr'TiEldDryg	Control Valve	-	Elapsed time drying	Available in cloud	N	-	
	Flow Temp.			Write	Y		
	Heating Circuit	AV102		Unit	[d]		
	(Δp Control)	-		Options	Value min.		0
					Value max.		25
			Default	-			

Settings for Room Heating

Object name	Obj. type/ID		Description	BACnet Properties		Modbus
EnQckSetbck %Plt%HVAC'Hcr'EnQckSetbck	Control Valve	-	Enable quick setback / Freigabe Schnellabsenkung	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	BV22		Unit	-	
	(Δp Control)	-		Options	[1] No [2] Yes	
				Default	-	
EnOscFncf %Plt%HVAC'Hcr'EnOscFncf	Control Valve	-	Enable optimum start control	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	BV27		Unit	-	
	(Δp Control)	-		Options	[1] No [2] Yes	
				Default	-	
SpTRShftBstH %Plt%HVAC'Hcr'SpTRShftBstH	Control Valve	-	Room temperature setpoint shift for boost heating	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	AV97		Unit	[°C]	
	(Δp Control)	-		Options	Value min. 0 Value max. 20	
				Default	5	
WarmUpGrdnt %Plt%HVAC'Hcr'WarmUpGrdnt	Control Valve	-	Warm-up gradient	Available in cloud	N	-
	Flow Temp.	-		Write	Y	
	Heating Circuit	AV96		Unit	[K/h]	
	(Δp Control)	-		Options	Value min. 0.1 Value max. 10	
				Default	1	

Settings for Backup Mode



Backup Mode is **empty** for applications

- Heating circuit
- Differential pressure control

Objects are only activated when applications

- **Supply temperature control** or
- **Dynamic control valve**

are selected.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
BckpMod %Pit%HVAC\VlvCtl\BckpMod	MSV42	Backup mode Defines how the device reacts when setpoint is missing, e.g. due to wiring failure on X1	Available in cloud	N	Address	170	
			Write	Y	R/W	R/W	
			Unit	-	Resolution	-	
			Options	[1] None [2] Last setpoint [3] Predefined setpoint			
			Default	[1] None	Register	171	
BckpModDly %Pit%HVAC\VlvCtl\ BckpModDly	PIV0	Backup mode activation delay Defines for how long the setpoint can be invalid before the Backup mode is activated. During the delay time, last setpoint is kept.	Available in cloud	N	Address	171	
			Write	Y	R/W	R/W	
			Unit	[s]	Resolution	1 s	
			Options	Value min.	0	Min.	0
				Value max.	36'000	Max.	36'000
			Default	900	Register	172	
BckpModValPos %Pit%HVAC\VlvCtl\ BckpModValPos	AV34	Backup mode value for position The position the device will go to, if: <ul style="list-style-type: none"> • Application is Dynamic control valve; • Control mode is Position control; • Backup mode is Predefined setpoint. 	Available in cloud	N	Address	172	
			Write	Y	R/W	R/W	
			Unit	[%]	Resolution	0.01 %	
			Options	Value min.	0	Min.	0
				Value max.	100	Max.	10'000
			Default	0	Register	173	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus			
BckpModValVfl %Plt%HVAC\VlvCtl' BckpModValVfl	AV35	Backup mode value for volume flow The volume flow in relation to the maximum volume flow the device will go to, if: <ul style="list-style-type: none"> Application is Dynamic control valve; Control mode is Volume flow control; Backup mode is Predefined setpoint. 	Available in cloud		N	Address	173	
			Write		Y	R/W	R/W	
			Unit		[%]		Resolution	0.01 %
			Options	Value min.	0	Min.	0	
				Value max.	100	Max.	10'000	
			Default		0	Register	174	
BckpModValPwr %Plt%HVAC\VlvCtl' BckpModValPwr	AV36	Backup mode value for power The power in relation to the maximum power the device will go to, if: <ul style="list-style-type: none"> Application is Dynamic control valve; Control mode is Power control; Backup mode is Predefined setpoint. 	Available in cloud		N	Address	174	
			Write		Y	R/W	R/W	
			Unit		[%]		Resolution	0.01 %
			Options	Value min.	0	Min.	0	
				Value max.	100	Max.	10'000	
			Default		0	Register	175	
BckpModValTFI %Plt%HVAC\VlvCtl' BckpModValTFI	AV91	Backup mode value for flow temperature The temperature setpoint the device will control, if: <ul style="list-style-type: none"> Application is Supply temperature control; Backup mode is Predefined setpoint. 	Available in cloud		N	Address	175	
			Write		-	R/W	R/W	
			Unit		[°C]		Resolution	0.01 °C
			Options	Value min.	0	Min.	0	
				Value max.	120	Max.	12'000	
			Default		0	Register	176	

I/O - Information



I/O – Information gives an overview about current configuration of Inputs / Outputs.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
PrSpSrc %Plt%'HVAC'PrSpSrc	Control Valve	Present setpoint source Shows the configured application and setpoint source. Currently selection between: <ul style="list-style-type: none"> [1]: Dynamic balancing valve with continuous analog signal on terminal X1; [2]: Dynamic balancing valve with setpoint via Modbus RTU (SpRelMdb); [3]: Dynamic balancing valve with setpoint via BACnet IP (SpRel); [4]: Heating circuit control with local setpoint according to heating curve based on measured outside temperature; [5]: Supply temperature control with setpoint according to analog signal on terminal X1; [6]: Supply temperature control with setpoint via Modbus RTU (SpTFIMdb); [7]: Supply temperature control with setpoint via BACnet IP; [8]: Differential pressure control with setpoint via BACnet IP. 	Available in cloud	N	Address	16
	Flow Temp.		Write	N	R/W	R
	Heating Circuit		Unit	-	Resolution	-
	(Δp Control)		Options	[1] Relative setpoint terminal [2] Relative setpoint Modbus [3] Relative setpoint remote [4] Heat circuit outside temp. comp. [5] Flow temp. setpoint terminal [6] Flow temp. setpoint Modbus [7] Flow temp. setpoint remote [8] Diff. pressure setpoint remote		
			Default	[1] Relative setpoint terminal	Register	17
PrX1Sel %Plt%'HVAC'PrX1Sel	Control Valve	Present selection for X1 Shows which setpoint is related to the analog to the analog value at terminal X1 – automatically selected according to setpoint source selection represented by PrSpSrc .	Available in cloud	N	Address	-
	Flow Temp.		Write	N	R/W	
	Heating Circuit		Unit	-	Resolution	
	(Δp Control)		Options	[1] None [2] Relative setpoint terminal [3] Flow temperature setpoint [7] Outside air temperature		Min.
			Default	[2] Relative setpoint terminal	Register	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
PrX1SelSigtyp %Pit%PrX1SelSigtyp	Control Valve	Present signal type selection for X1 Shows the signal type selected for terminal X1, provided: <ul style="list-style-type: none"> PrSpSrc is set to [1] or [5] → PrX1SelSigtyp = [2], [3] or [4]; or PrSpSrc is set to [4] → PrX1SelSigtyp = [5], [6] or [8]. 	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] None [2] 0...10 V [3] 2...10 V [4] 4...20 mA [5] Ni1000 (DIN) [6] LG-Ni1000 [8] Pt1000 (EU)	Min.
			Default		[2] 0...10 V	Max.
						Register
PrX2Sel %Pit%HVACPrX2Sel	Control Valve	Present selection for X2 Shows which process value is represented at terminal X2.	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] Disabled [4] Primary flow temperature [5] Primary return temperature [8] Temp. difference flow and return [10] Relative volume flow [11] Valve position [12] Relative power	Min.
			Default		[1] None	Max.
						Register
PrX2SelSigtyp %Pit%PrX2SelSigtyp	Control Valve	Present signal type selection for X2 Shows the signal type selected for terminal X2, provided PrX2Sel is not set to [1]	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] Disabled [2] 0...10 V [3] 2...10 V [4] 4...20 mA	Min.
			Default		[1] Disabled	Max.
						Register

Object name	Obj. type/ID		Description	BACnet Properties		Modbus	
PrX3Sel %Pit%'HVAC'PrX3Sel	Control Valve	MSV61	Present selection for X3 Shows which process value is measured at terminal X3. Automatically selected according to setpoint source selection PrSpSrc .	Available in cloud	N	Address	-
	Flow Temp.			Write	N	R/W	
	Heating Circuit			Unit	-	Resolution	
	(Δp Control)			Options	[1] Disabled [4] Flow temperature [5] Differential pressure primary	Min.	
		Default			Max.		
						Register	
PrX3SelSigtyp %Pit%'PrX3SelSigtyp	Control Valve	-	Present signal type selection for X3 Shows the signal type selected for terminal X3, provided: <ul style="list-style-type: none"> • PrSpSrc is set to [4], [5], [6] or [7] → passive temp. sensor [5], [6] or [8] expected; or • PrSpSrc is set to [8] → active differential pressure sensor [1], [2], [3] or [4] expected. 	Available in cloud	N	Address	-
	Flow Temp.	MSV85		Write	N	R/W	
	Heating Circuit	MSV84		Unit	-	Resolution	
	(Δp Control)	MSV83		Options	[5] Ni1000 (DIN) [6] LG-Ni1000 [8] Pt1000 (EU) [1] QBE3000-D1.6 [2] QBE3000-D2.5 [3] QBE3000-D4 [4] Freely adjustable span of pressure measurement	Min.	
				Default	-	Max.	
						Register	

Modbus Server Configuration



Modbus Server Configuration allows the user to set all settings for the network configuration with Modbus RTU. Even if not selected as Network Source, most datapoints are available on Modbus RTU in parallel to BACnet IP.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
MbPort1LnTrmnt %Plt%MbPort1LnTrmnt	BV31	Modbus port 1 line termination Defines if the line termination for Modbus RTU is activated or not.	Available in cloud	N	Address	100	
			Write	Y	R/W	R/W	
			Unit	-	Resolution	-	
			Options	[0] Inactive [1] Active			
			Default	[0] Inactive	Register	101	
MbPort1Adr %Plt%MbPort1Adr	PIV14	Modbus port 1 address Defines the Modbus RTU address of the device.	Available in cloud	N	Address	101	
			Write	Y	R/W	R/W	
			Unit	-	Resolution	1 s	
			Options	Value min.	1	Min.	1
				Value max.	247	Max.	247
			Default	10	Register	102	
MbPort1Baud %Plt%MbPort1Baud	MSV93	Modbus port 1 baud rate Defines the baud rate for Modbus communication.	Available in cloud	N	Address	102	
			Write	Y	R/W	R/W	
			Unit	[Baud]	Resolution	-	
			Options	[1] 9600 Baud [2] 19200 Baud [3] 38400 Baud [4] 57600 Baud [5] 76800 Baud [6] 115200 Baud			
			Default	[2] 19200	Register	103	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
MbPort1StpBit %Plt%MbPort1StpBit	MSV94	Modbus port 1 stop bit	Available in cloud	N	Address	104
			Write	Y	R/W	R/W
			Unit	-	Resolution	-
			Options		[1] 1 [2] 2	
			Default	[1] = 1	Register	105
MbPort1Parity %Plt%MbPort1Parity	MSV95	Modbus port 1 parity	Available in cloud	N	Address	105
			Write	Y	R/W	R/W
			Unit	-	Resolution	-
			Options		[1] No [2] Even [3] Odd	
			Default	[2] Even	Register	106
MbPort1SetApy %Plt%MbPort1SetApy	MSV96	Modbus port 1 apply setting	Available in cloud	N	Address	-
			Write	Y	R/W	
			Unit	-	Resolution	
			Options	[1] Ready [2] Apply		
			Default	[1] Ready	Register	

Settings for Demonstration Mode



Demonstration Mode can be enabled as long as there is no valid flow sensor signal available.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus		
EnDemoMod %Plt%DemoFnct'EnDemoMod	Control Valve	Enable demonstration mode Select whether the Demonstration mode should be activated or not. As long as there is a valid flow signal from the flow sensor, Demonstration mode cannot be activated! The device will not accept the command.	Available in cloud		-		
	Flow Temp.		BV29	N			
	Heating Circuit			Write		Y	
	(Δp Control)			Unit		-	
			Options		[1] Off [2] On		
			Default		[1] Off		
NomPpsizeDmo %Plt%DemoFnct'NomPpsizeDmo	Control Valve	Nominal pipe size demonstration mode Selection which line size should be simulated for the demonstration. Has an impact on nominal volume flow displayed during demonstration.	Available in cloud		-		
	Flow Temp.		AV84	N			
	Heating Circuit			Write		Y	
	(Δp Control)			Unit		[mm]	
			Options	Value min.	0		
				Value max.	500		
			Default		25		
GainDPPrimDmo %Plt%DemoFnct'GainDPPrimDmo	Control Valve	Gain for diff. pressure primary demonstration mode Value for differential pressure during demonstration in relation to Δp_{min} of the selected line size. Has an impact on the working range for a connected actuator and the self test results: <ul style="list-style-type: none"> High values: valve operates at low positions; Low values: valve operates at high positions. 	Available in cloud		-		
	Flow Temp.		AV83	N			
	Heating Circuit			Write		Y	
	(Δp Control)			Unit		[%]	
			Options	Value min.	0.5		
				Value max.	5		
			Default		1.2		
TOaDmo %Plt%DemoFnct'TOaDmo	Control Valve	Outside temperature for demonstration mode (only shown for application Heating circuit) Demonstration mode can also be used for application Heating circuit with outside temperature compensation – value defines the outside temperature which is used to calculate the flow temperature setpoint based on the heating curve.	Available in cloud		-		
	Flow Temp.		-	N			
	Heating Circuit		AV15	Write		Y	
	(Δp Control)		-	Unit		[°C]	
			Options	Value min.	-50		
				Value max.	50		
			Default		10		

Configuration

Configuration with ABT Go or ABT Site in Configuration Mode



These objects representing the configuration are the result of the configuration workflow done with Siemens ABT Go / ABT Site.

Based on the specific configuration, only a subset of these objects will appear in the final configured Intelligent Valve.

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
PrSpSrc %Pit%'HVAC'PrSpSrc	Control Valve	Present setpoint source Shows the configured application and setpoint source. Currently selection between: <ul style="list-style-type: none"> [1]: Dynamic balancing valve with continuous analog signal on terminal X1; [2]: Dynamic balancing valve with setpoint via Modbus RTU (SpRelMdb); [3]: Dynamic balancing valve with setpoint via BACnet IP (SpRel); [4]: Heating circuit control with local setpoint according to heating curve based on measured outside temperature; [5]: Supply temperature control with setpoint according to analog signal on terminal X1; [6]: Supply temperature control with setpoint via Modbus RTU (SpTFIMdb); [7]: Supply temperature control with setpoint via BACnet IP; [8]: Differential pressure control with setpoint via BACnet IP. 	Available in cloud	N	Address	16
	Flow Temp.		Write	N	R/W	-
	Heating Circuit		Unit	-	Resolution	-
	(Ap Control)		Options	[1] Relative setpoint terminal [2] Relative setpoint Modbus [3] Relative setpoint remote [4] Heat circuit outside temp. comp. [5] Flow temp. setpoint terminal [6] Flow temp. setpoint Modbus [7] Flow temp. setpoint remote [8] Diff. pressure setpoint remote		
			Default	[1] Relative setpoint terminal	Register	17
PrX1Sel %Pit%'HVAC'PrX1Sel	Control Valve	Present selection for X1 Shows which setpoint is related to the analog to the analog value at terminal X1 – automatically selected according to setpoint source selection represented by PrSpSrc .	Available in cloud	N	Address	-
	Flow Temp.		Write	N	R/W	
	Heating Circuit		Unit	-	Resolution	
	(Ap Control)		Options	[1] None [2] Relative setpoint terminal [3] Flow temperature setpoint [7] Outside air temperature		Min.
			Default	[2] Relative setpoint terminal	Register	

Object name	Obj. type/ID	Description	BACnet Properties		Modbus	
PrX1SelSigtyp %Pit%PrX1SelSigtyp	Control Valve	Present signal type selection for X1 Shows the signal type selected for terminal X1, provided: <ul style="list-style-type: none"> PrSpSrc is set to [1] or [5] → PrX1SelSigtyp = [2], [3] or [4]; or PrSpSrc is set to [4] → PrX1SelSigtyp = [5], [6] or [8]. 	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] None [2] 0...10 V [3] 2...10 V [4] 4...20 mA [5] Ni1000 (DIN) [6] LG-Ni1000 [8] Pt1000 (EU)	Min.
			Default		[2] 0...10 V	Max.
						Register
PrX2Sel %Pit%HVACPrX2Sel	Control Valve	Present selection for X2 Shows which process value is represented at terminal X2.	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] Disabled [4] Primary flow temperature [5] Primary return temperature [8] Temp. difference flow and return [10] Relative volume flow [11] Valve position [12] Relative power	Min.
			Default		[1] Disabled	Max.
						Register
PrX2SelSigtyp %Pit%PrX2SelSigtyp	Control Valve	Present signal type selection for X2 Shows the signal type selected for terminal X2, provided PrX2Sel is not set to [1].	Available in cloud		N	Address
	Flow Temp.		Write		N	R/W
	Heating Circuit		Unit		-	Resolution
	(Δp Control)		Options		[1] Disabled [2] 0...10 V [3] 2...10 V [4] 4...20 mA	Min.
			Default		[1] Disabled	Max.
						Register

Object name	Obj. type/ID		Description	BACnet Properties		Modbus	
PrX3Sel %Pit%'HVAC'PrX3Sel	Control Valve	MSV61	Present selection for X3 Shows which process value is measured at terminal X3. Automatically selected according to setpoint source selection PrSpSrc .	Available in cloud	N	Address	-
	Flow Temp.			Write	N	R/W	
	Heating Circuit			Unit	-	Resolution	
	(Δp Control)			Options	[1] Disabled [4] Flow temperature [5] Differential pressure primary	Min.	
		Default			Register		
PrX3SelSigtyp %Pit%'PrX3SelSigtyp	Control Valve	-	Present signal type selection for X3 Shows the signal type selected for terminal X3, provided: <ul style="list-style-type: none"> • PrSpSrc is set to [4], [5], [6] or [7] → passive temp. sensor [5], [6] or [8] expected; or • PrSpSrc is set to [8] → active differential pressure sensor [1], [2], [3] or [4] expected. 	Available in cloud	N	Address	-
	Flow Temp.	MSV85		Write	N	R/W	
	Heating Circuit	MSV84		Unit	-	Resolution	
	(Δp Control)	MSV83		Options	[5] Ni1000 (DIN) [6] LG-Ni1000 [8] Pt1000 (EU) [1] QBE3000-D1.6 [2] QBE3000-D2.5 [3] QBE3000-D4 [4] Freely adjustable span of pressure measurement	Min.	
				Default	-	Register	

Issued by
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