

KNX Protocol

The intelligent solution for VAV zone control

OJ GreenZone™



67502 09/15 (OSH)
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Intelligent control
Maximum comfort
Low energy consumption

Save up to 65% CO₂



In general

Standard KNX products like PIR movement detectors, CO₂-sensors, humidity sensors (%rh), VOC- and temperature sensors can be used together with the OJ GreenZone™ system.

Sensors must be placed in the rooms and the measured values can be used as input for the Zone modules.

Data between the connected KNX sensors and the OJ GreenZone™ system must be transmitted using a KNX/TCP-IP converter: Weinzerl KNX/IP BAOS 772

All datapoints which can be transmitted between the OJ GreenZone™ system and the KNX system are described in this manual.

The installer must have the necessary knowledge of KNX systems and the used KNX components must be supported from the selected KNX component manufacturer.

Communication

TCP/IP: 1 x 10/100Mbit Ethernet, RJ45 plug connector

IP address: OJ GreenZone™ Master is pre configured for a KNX / TCP-IP router with the IP address 192.168.1.33. (can be changed)

See OJ GreenZone™ Installer manual which can be downloaded from www.ojelectronics.com

Activating the KNX sensors

The use of KNX sensors must be activated from the user interface on the OJ GreenZone™ Master.

See OJ GreenZone™ Installer manual which can be downloaded from www.ojelectronics.com

Alarm if missing values from the KNX sensors

When KNX sensors are activated from the WEB, missing values may be causing an alarm.

The timeout for missing or no updated values can be set from the used interface on the WEB.

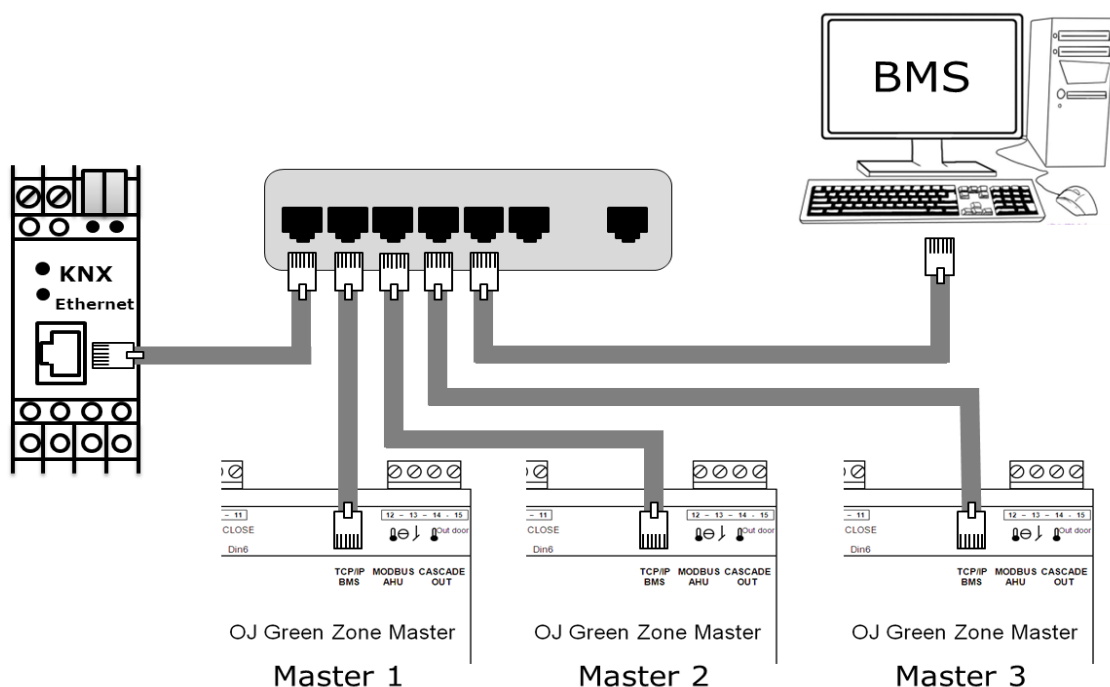
See OJ GreenZone™ Installer manual which can be downloaded from www.ojelectronics.com

Table 1

Product overview:

Manufacturer	Type	Description
Arcus-EDS	SK03-TFK	KNX sensor, room temperature & relative humidity
Arcus-EDS	AE-S8-CO2-TF	KNX sensor, room temperature, -relative humidity and -CO ₂
Arcus-EDS	SK03R-T	KNX sensor, room temperature, +/-°C setpoint offset
Arcus-EDS	SK01-T-KTF1	KNX sensor, temperature, duct mounting
Züblin Elektro	Swiss Garde 360 KNX	KNX PIR movement detector
Elsner Elektronik	KNX VOC-UP basic	KNX sensor, VOC sensor, wall mounting
MDT technologies	KNX Binary Input	KNX input module for window- and frost signal
GIRA	2104	KNX sensor, room temperature, -relative humidity and -CO ₂
Weinzerl	KNX/IP BAOS 772	KNX / TCP-IP converter

Fig. 1



OJ GreenZone Master™

1 x RJ45 TCP/IP for Modbus connection to KNX system

Fig. 2 OJ Green Zone Master, RJ45 Modbus TCP/IP BMS

KNX/ TCP-IP gateway must be connected to the OJ GreenZone™ Master using plug connector "TCP/IP BMS"

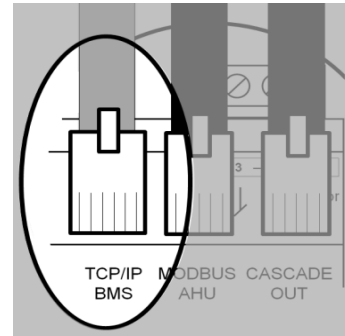
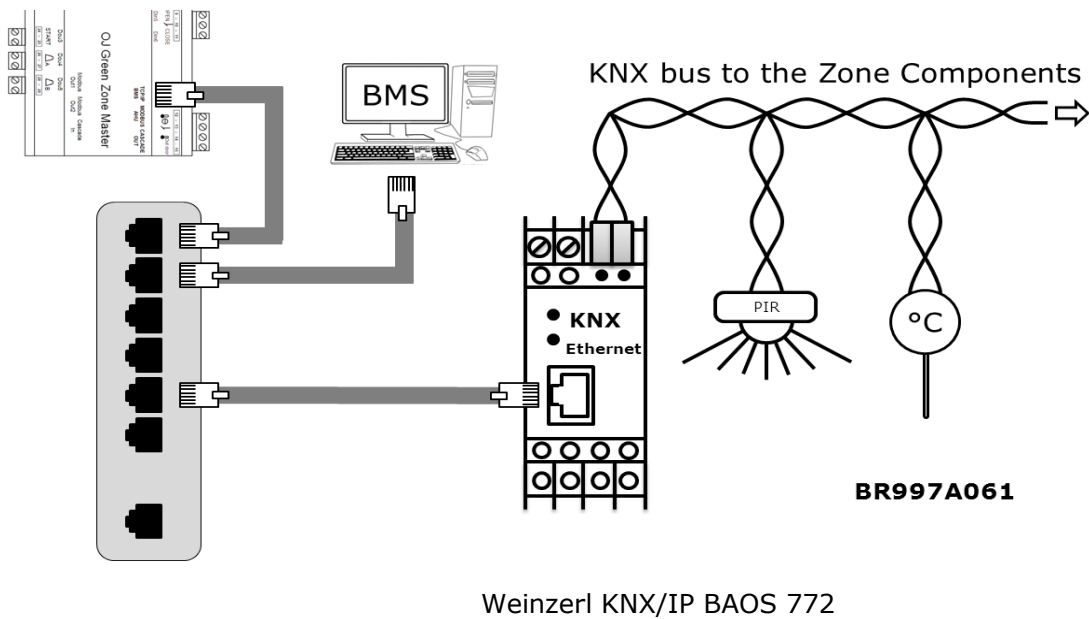


Fig. 3 KNX/TCP-IP Gateway



Addressing the KNX components

The following component types can be integrated:

Product type	Sensor number
Window contact or frost thermostat via KNX binary input module	1
PIR movement detector	2
Room temperature sensor	3
Supply-/duct sensor	4
Temperature set point offset +/- °C	5
CO2/VOC sensor	6
Relative humidity (rh%) sensor	7

The above KNX components is found in several types and brands.

OJ Electronics did test KNX products according to table 1 (see page 2) but other compatible brands and types can be used.

The mentioned sensors can be multi function products and may have more functions in the same product. For example the KNX product AE-S8-CO2-TF from ArduS-EDS do have datapoints for room temperature, CO2 level and relative humidity.

If all 3 values must be integrated in the control system, sensor number 3, 6 og 7 must be configured. The KNX configurering programe ETS4 is usefull for this.

Datapoints are calculated according this formular:

$$\text{Datapoint Number} = (\text{Section}-1) * 200 + (\text{Zone}-1) * 7 + \text{Sensor Number}$$

Sample 1:

Room sensor type AE-S8-CO2-TF from ArduS-EDS is placed in section 2 (OJ Green Zone Master no. 2), zone number 15.

Room sensor do have output for: room temperature, CO2 level and %rh relative humidity. All 3 values are used to control the zone.

Data number of the room temperature [°C]:

$$(2-1) * 200 + (15-1) * 7 + 3 = 301;$$

Datapoint for room temperature [°C] in section 2, zone 15 = 301

CO2 sensor [ppm] data number:

$$(2-1) * 200 + (15-1) * 7 + 6 = 304;$$

Datapoint for CO2 [ppm] in sektion 2, zone 15 = 304

Relative humidity [%rh] data number:

$$(2-1) * 200 + (15-1) * 7 + 7 = 301;$$

Datapoint for relative humidity [%rh] in sektion 2, zone 15 = 305

Sample 2:

Movement detector, type Swiss Garde 360 KNX from Züblin Elektro is placed in section 4 (OJ Green Zone Master no. 4), zone number 7.

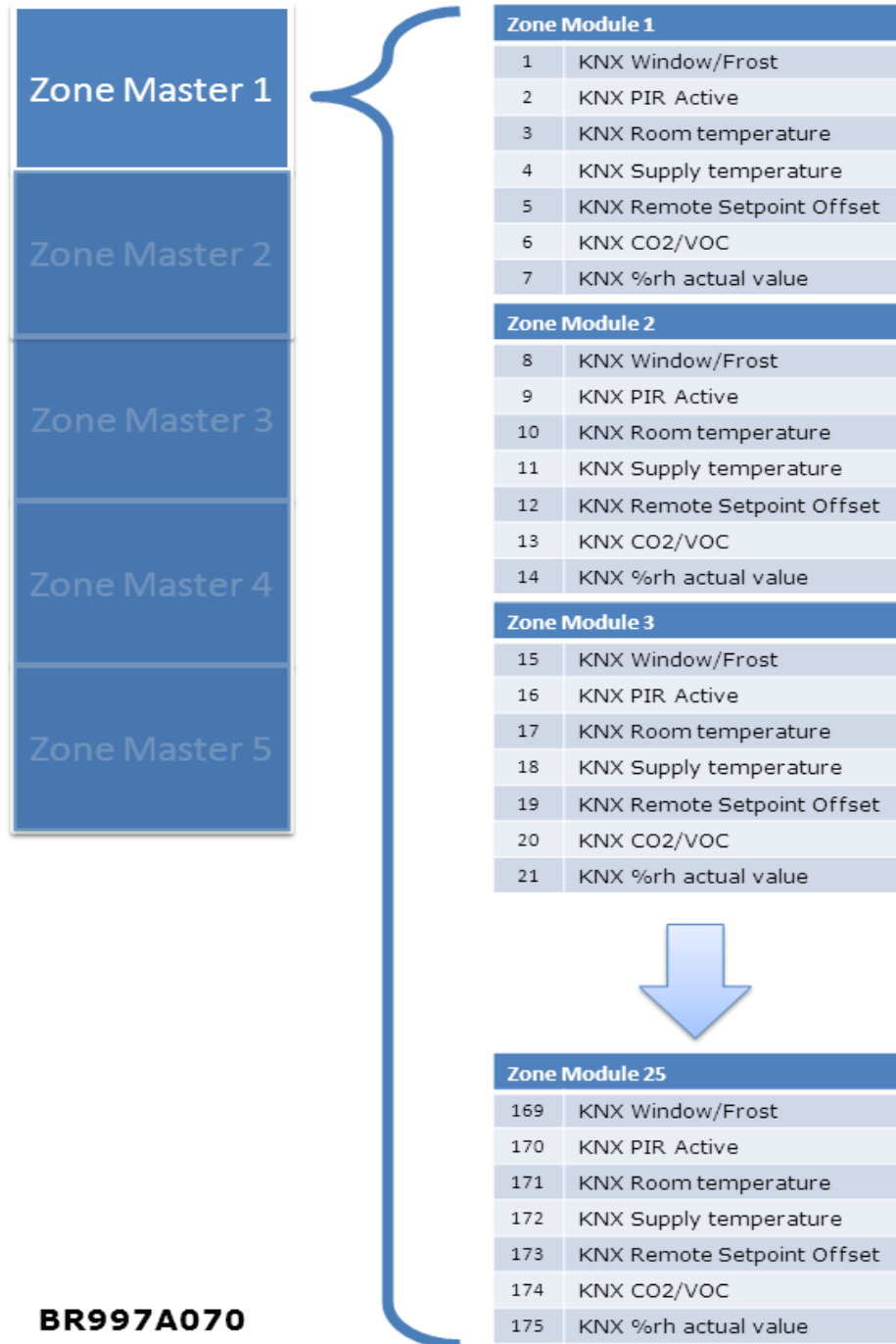
PIR movement detector data number:

$$(4-1) * 200 + (7-1) * 7 + 2 = 644;$$

Datapoint for PIR mevement detector in sektion 4, zone 7 = 644

Addressing

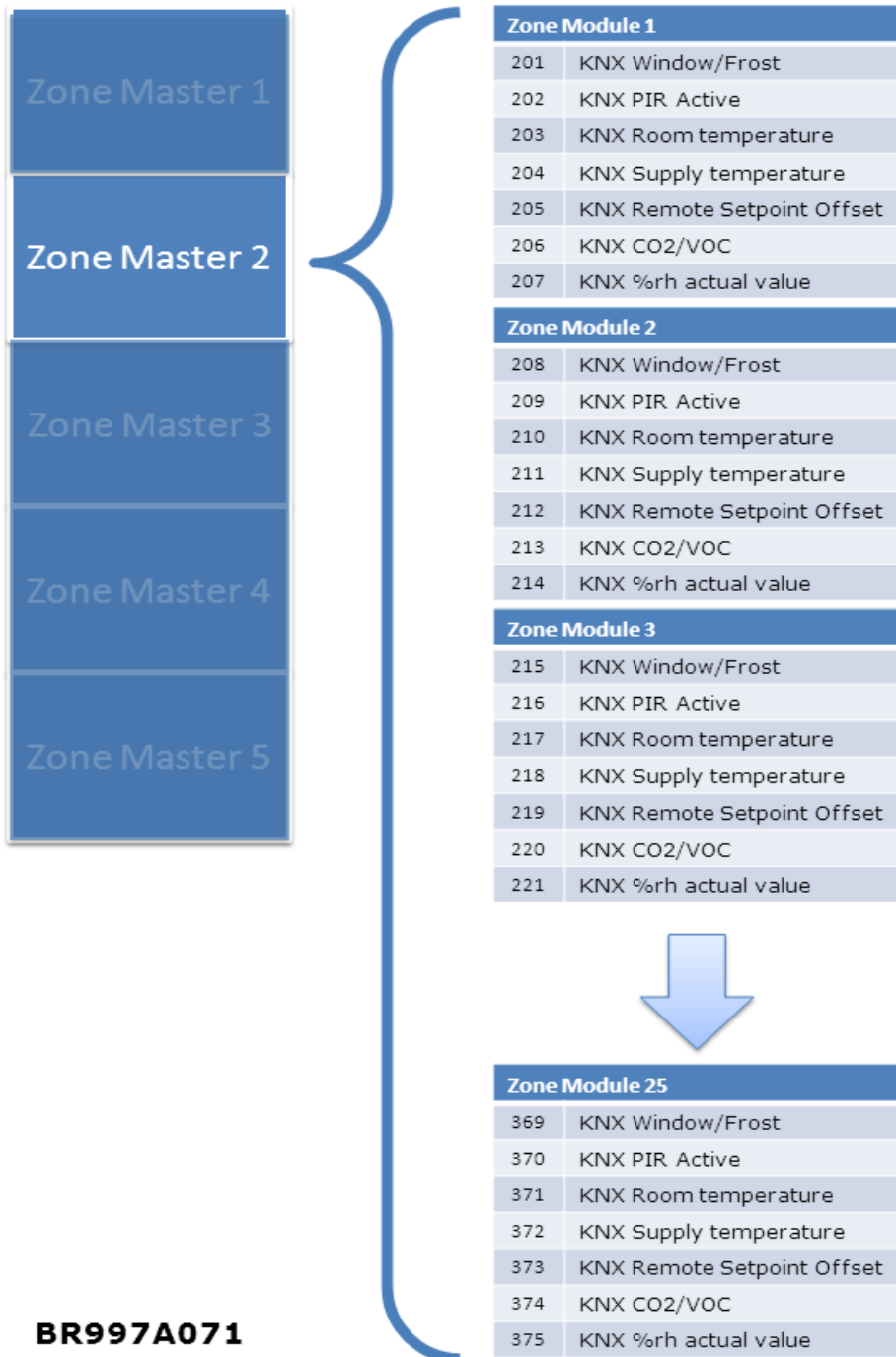
Datapoints OJ Green Zone Master section 1



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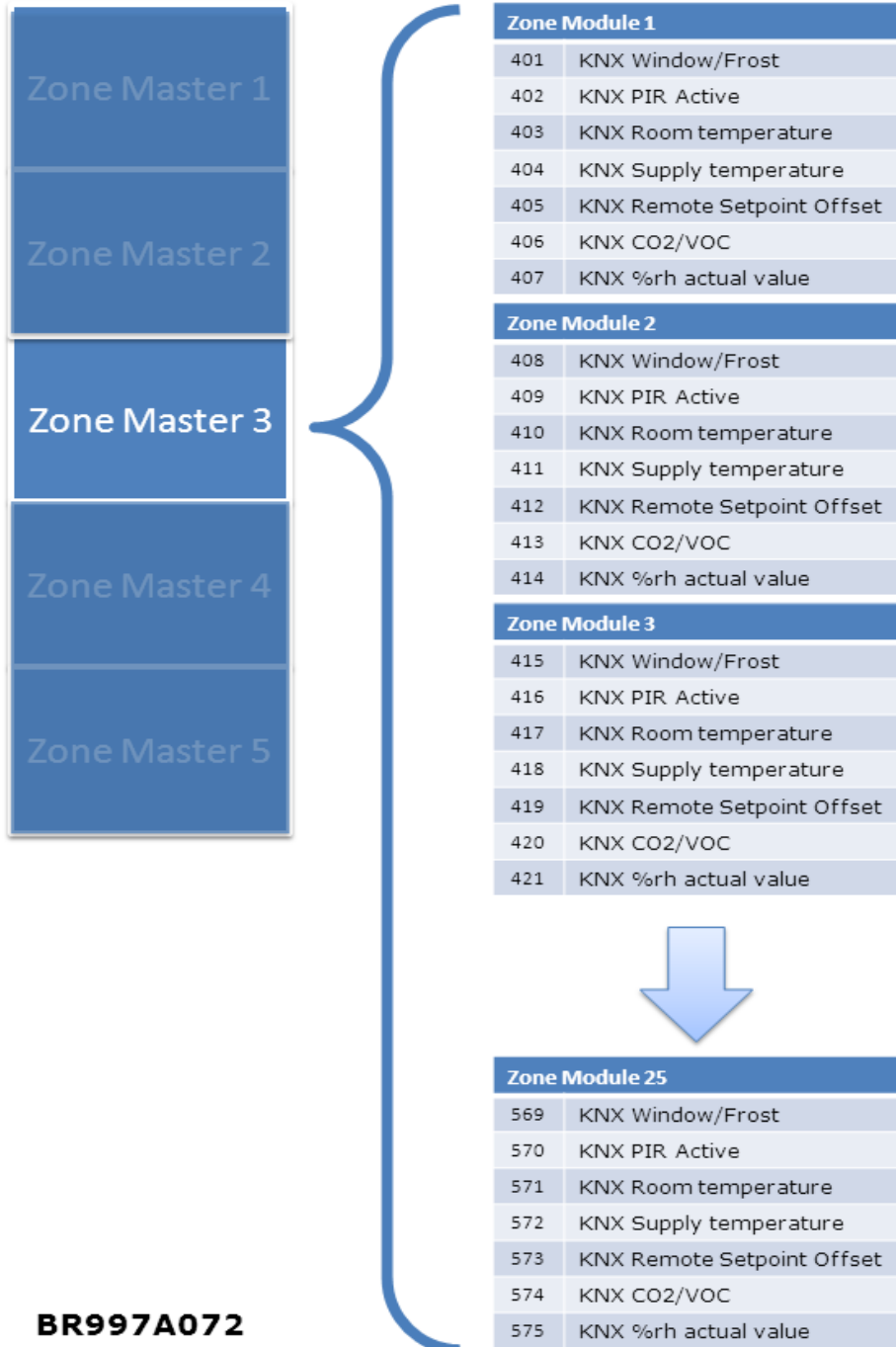
Addressing

Datapoints OJ Green Zone Master section 2



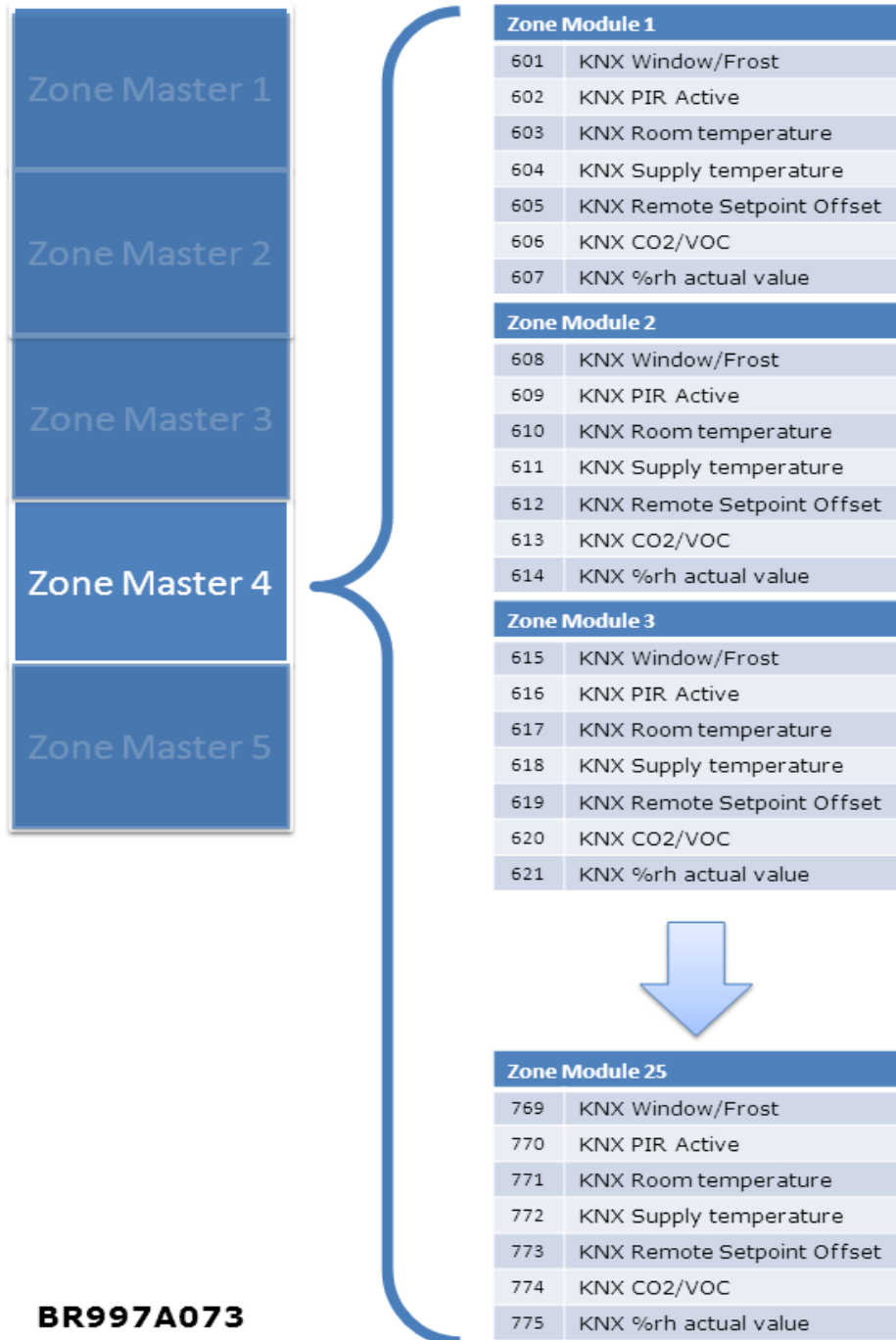
Addressing

Datapoints OJ Green Zone Master section 3



Addressing

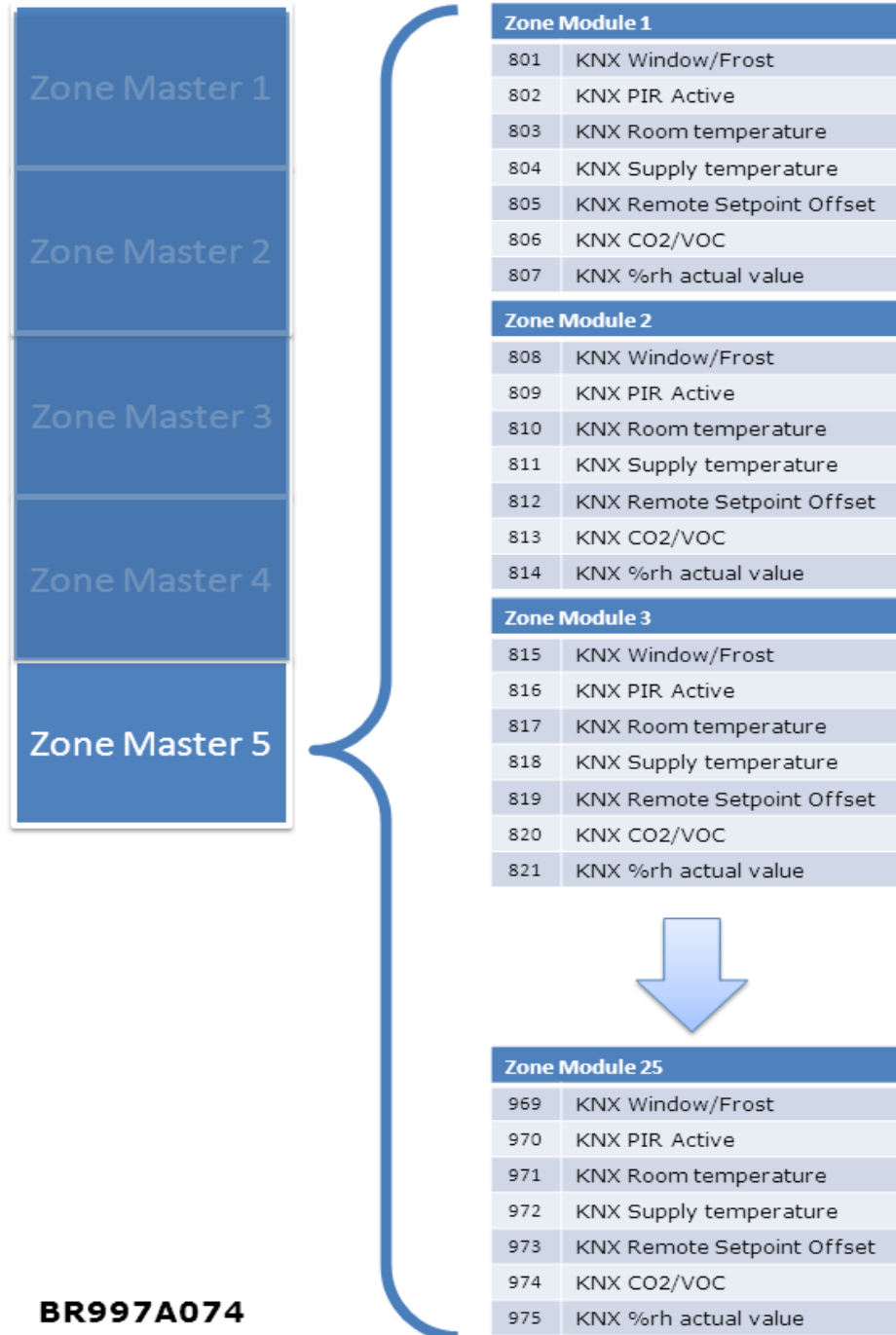
Datapoints OJ Green Zone Master section 4



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Addressing

Datapoints OJ Green Zone Master section 5



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