



KKT Academy Series:

KKT BACnet Gateway



Model(s):

cBoxX Series

KKT BACnet Gateway

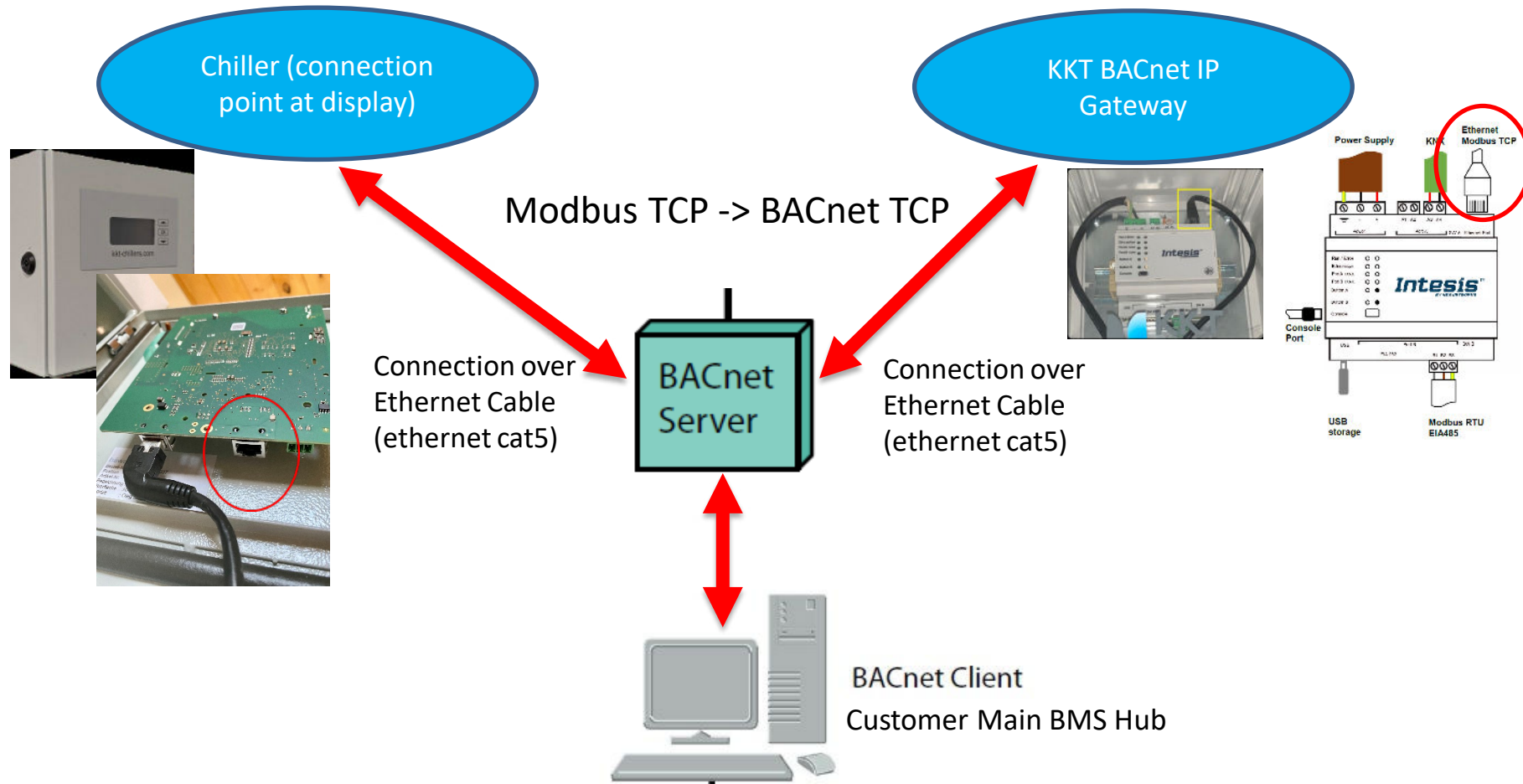
The BACnet Gateway is designed for installation on cBoxX chiller to communicate available monitoring points between the chiller and the site's building management system via an Anybus Gateway.

KKT part number: 617062



KKT BACnet Gateway

Interface Overview - KKT BACnet Gateway



Connecting BMS to the display panel

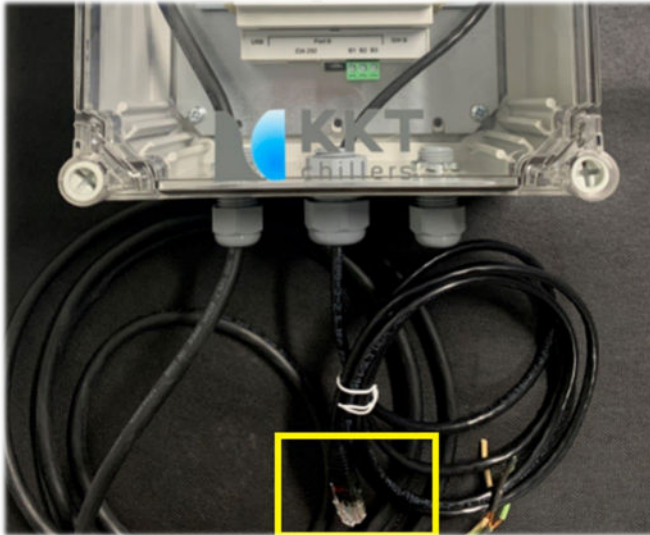
Connect the ethernet cable from your BACnet server to the port located on the display as shown



To avoid damage, be careful and avoid applying excessive force or twisting when making this connection

Connecting BMS to the Gateway

Connect a second ethernet cable from your BACnet server to the Gateway as shown



To avoid damage, be careful and avoid applying excessive force or twisting when making this connection



Connecting voltage

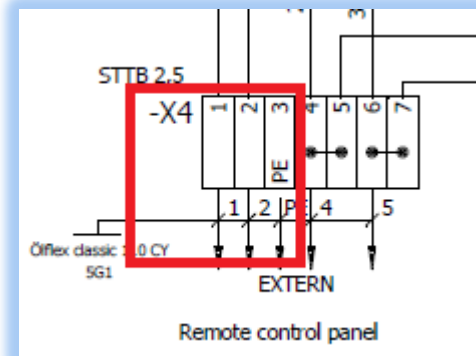
The BACnet Gateway can be operated using AC (24V) or DC (+9v to +36v) voltage.

To power the Gateway from the remote display panel, connect the BACnet Gateway's power cord to the terminals provided.

BACnet Gateway

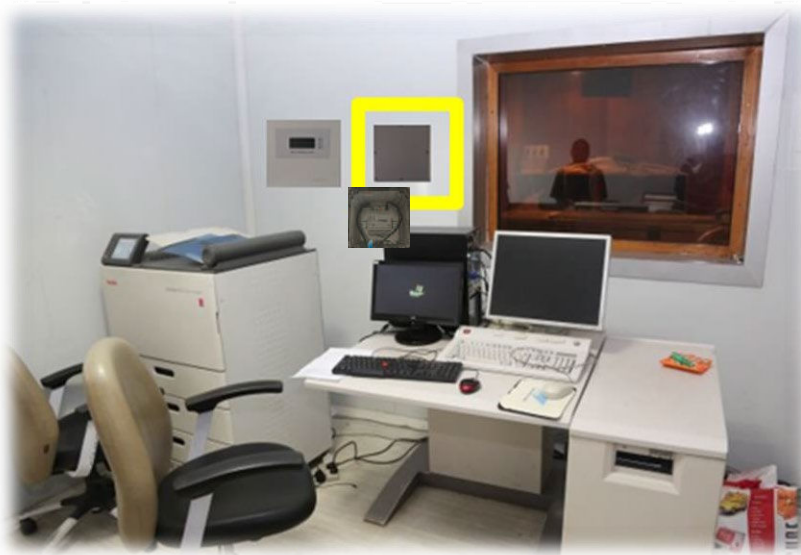


Remote Display Box



Module Box Placement

In this case, the BACnet Gateway should be mounted within 4 feet (48") of the remote display panel to ensure the cable will reach the provided terminals.




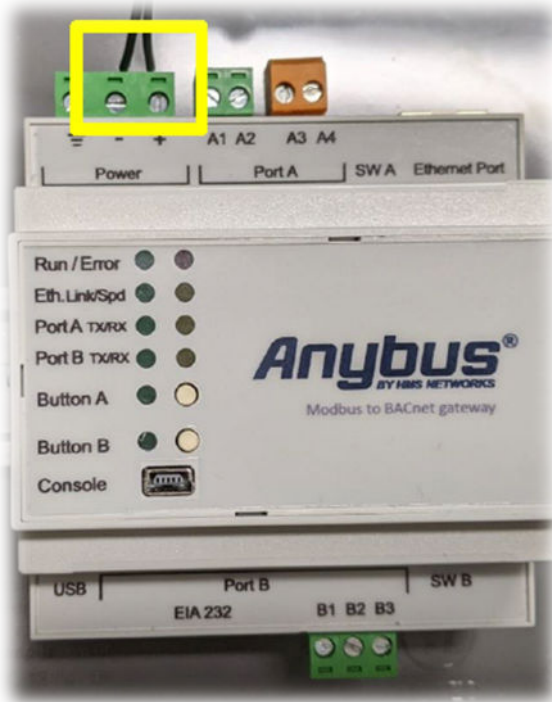
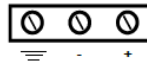
Connecting voltage (Optional)

Connect the BACnet Gateway to separate power source (not provided)

BACnet Gateway

Power Connector (3-pole terminal block)

Pin	Function
	Protective Earth
-	Power Ground
+	24 VAC or +9 to +36 VDC



Separate power source
(not included)

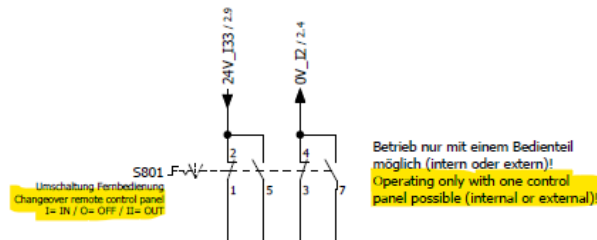


Remote Display Operation

The BACnet Gateway receives signals from the chiller and must be connected to the display selected for viewing

cBoxX chillers allow for one display to be viewed at a time – either **Indoors** at the remote display panel, or **Outside** at the chiller. During normal operation, the switch should be set to IN so the MRI technician can easily view chiller status near their desk in the control room.

To change viewing location, change the switch (7S1 or 8S1) inside of the chiller's electrical box to either **“OUT”** for indoor viewing or **“IN”** in order to read the display outside at the chiller.



Remote Display - switch selection "OUT"



Chiller Display - switch selection "IN"

Connecting to your PC

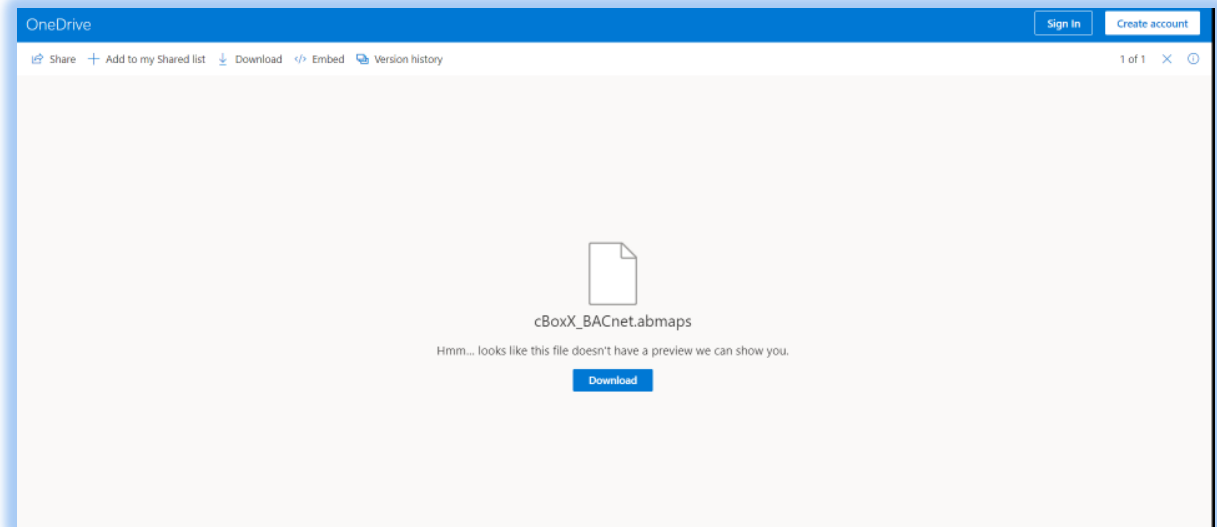
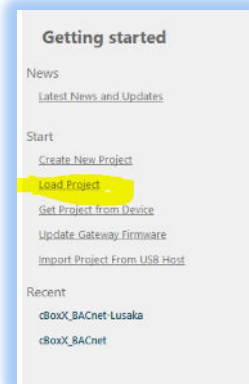
Connecting your PC with the KKT BACnet Gateway

STEP 1: Connect your PC and the KKT BACnet Gateway with a „USB A to USB mini“ cable.

STEP 2: Open the Program „ACM-MAPS“ –NOTE: You can download the HMS (Intensis) program by clicking on the following link: https://cdn.hms-networks.com/docs/librariesprovider11/software/intesis-maps-installer.exe?sfvrsn=bd554cd7_53&download=true

STEP 3: Now click “Load Project” and load the “cboxX_BACnet.abmaps” file

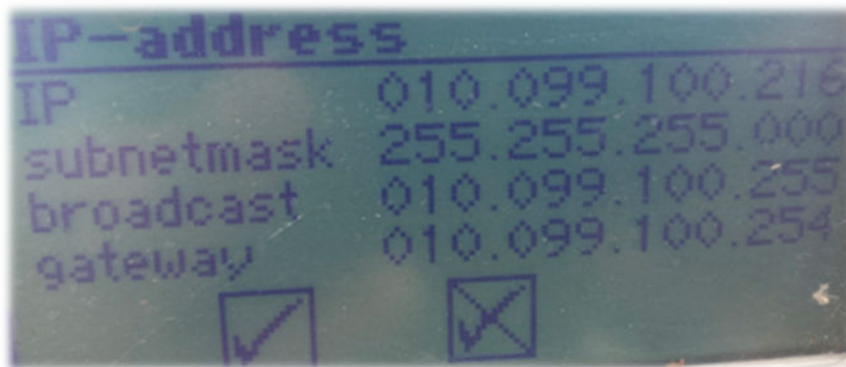
NOTE: to access this file please click on link: https://1drv.ms/u/s!Atvp_iFI8hfMhqwetjPFg82wnaHuuQ?e=OqMHCn



Step 4: Now you can configure the BacNet IP Gateway

Setting the IP Addresses

KKT “IP” Configuration (display at chiller or remote display panel)



Customer provided IP for the chiller
(TCP node IP)

Customer provided broadcast IP

Customer provided gateway IP



Configuring the Gateway

KKT BACnet Gateway Configuration (TCP/IP)

General

BACnet Server

Modbus Master

General Configuration

Gateway Name: KKT Chillers cBoxX

Project Description: Gateway
KKT Chillers cBoxX
Modbus TCP -> BACnet TCP

Connection

☐ Enable DHCP

IP Address: 10.99.100.215

Netmask: 255.255.255.0

Default Gateway: 10.99.100.254

Gateway Configuration

Modbus Type: ☐ RTU ☒ TCP ☐ Both

Server Devices Configuration

- ☐ RTU Node
- ☒ KKT (10.99.100.216:502)
 - ☒ cBoxX (85)

TCP Node Name: KKT

TCP Node IP: 10.99.100.216

TCP Node Port: 502

General

BACnet Server

Modbus Master

BACnet Server General Configuration

Device Name: KKT_Chillers_cBoxX_Gateway

Device Instance: 246

Password: admin

Objects Information: **Show**

Gateway Mode

Mode: ☒ IP ☐ MSTP

UDP Port: 47808

Network Role: Disabled

☐ Show Advanced Configuration

General

BACnet Server

Modbus Master

Gateway Configuration

Modbus Type: ☐ RTU ☒ TCP ☐ Both

Server Devices Configuration

- ☐ RTU Node
- ☒ KKT (10.99.100.216:502)
 - ☒ cBoxX (85)

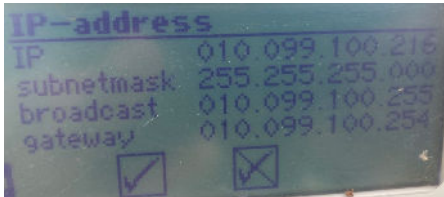
TCP Node Name: KKT

TCP Node IP: 10.99.100.216

TCP Node Port: 502

This IP address is provided by customer (BacNet IP) from the customer (BMS)

You need the same customer provided Gateway and Netmask IP that was entered into the KKT control display



The TCP node IP is provided by customer (network) IP – this IP is the same as what was entered into the display (see above)

Monitoring points

A separate document providing a list of available monitoring points is provided



Name	Type	Iniance	Units
DI remotecontrol	BI	-	-
DI pump 1 flow-switch	BI	-	-
DI pump 2 flow-switch	BI	-	-
DO pump 1	BO	-	-
DO pump 2	BO	-	-
DO compressor 1	BO	-	-
DO compressor 2	BO	-	-
DO compressor 3	BO	-	-
DO compressor 4	BO	-	-
DO EV hot gas bypass	BO	-	-
DO fan 1	BO	-	-
DO fan 2	BO	-	-
DI pump O_E flow-switch	BO	-	-
DI pump O_MV flow-switch	BO	-	-
DO pump freecooler	BO	-	-
DO fan freecooler	BO	-	-
DI pump O_MV flow-switch	BO	-	-
DI pump O_BM flow-switch	BO	-	-
DO collective fault	BO	-	-
Life bit	BO	-	-
Operating hours DO pump 1	AV	-	h
Operating hours DO pump 2	AV	-	h
Operating hours DO compressor 1	AV	-	h
Operating hours DO compressor 2	AV	-	h
Operating hours DO compressor 3	AV	-	h
Operating hours DO compressor 4	AV	-	h
Operating hours DO Heating	AV	-	h
Operating hours DO pump freecooler	AV	-	h
Measuring Pump 1 press outlet	AV	-	bar
Measuring Pump 2 press outlet	AV	-	bar
Measuring Coldwater press	AV	-	bar
Measuring Tank pressure	AV	-	mbar
Measuring Coldwater temp inlet (VP)	AV	-	°C
Measuring Coldwater temp outlet	AV	-	°C
Measuring Coldwater temp outlet 2	AV	-	°C
Measuring Temp cooling water	AV	-	°C
Measuring ambient temperature	AV	-	°C
Measuring Freecooler temp inlet	AV	-	°C
Measuring Temp. system return	AV	-	°C
Measuring Conductivity	AV	-	µS
Life counter	AV	-	-
Alert Sensor error monitoring AI pump pressure 1	BV	-	-
Alert Sensor error monitoring AI pump pressure 2	BV	-	-
Alert Sensor error monitoring AI coldwater press	BV	-	-