Welcome to the X2 Operating System Introduction of Vector Controls

April 2022

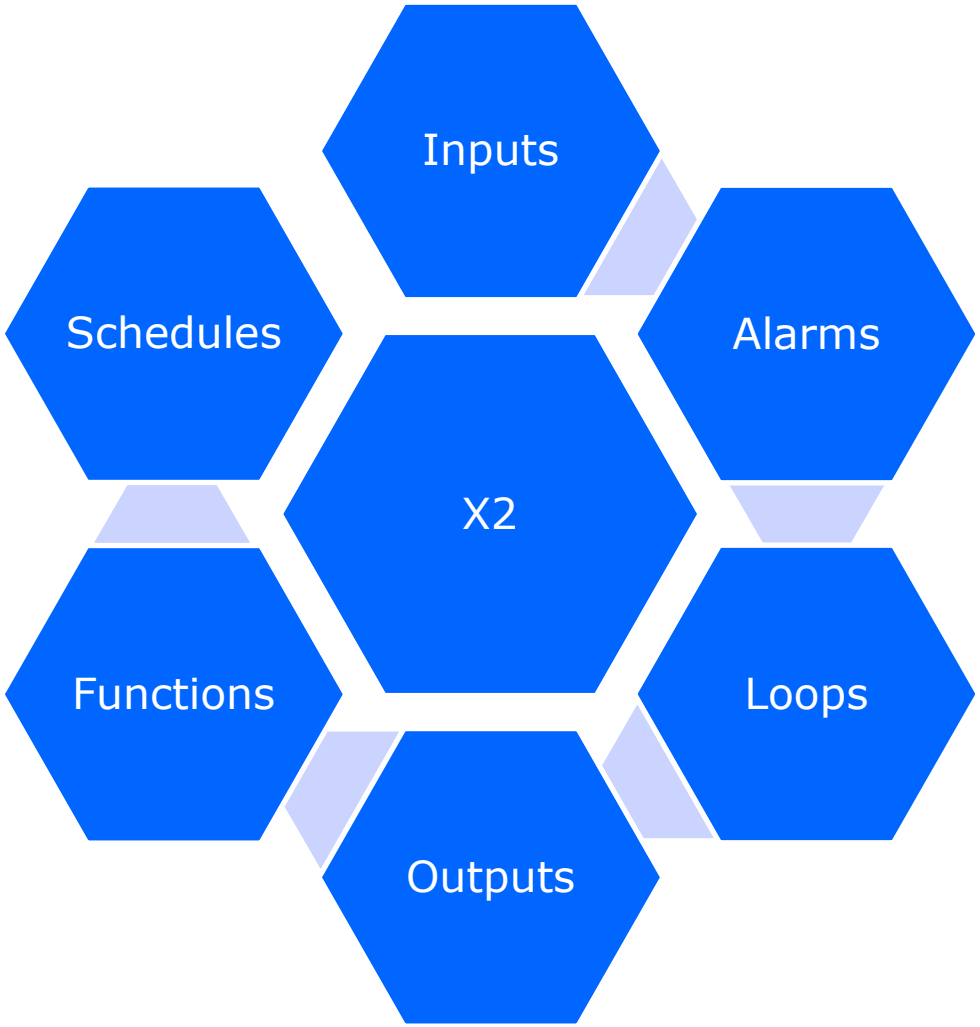
Presented by
Premier Energy Controls
Champlin, MN · 763.286.5375 · www.pecontrols.com
kevin@premierenergyusa.com / kevin@vectorcontrols.com

Contents

- X2 Operating system
  - X2 Setup process
  - X2 Product ID & Series
  - Cabinet mounted TCX2
  - Cabinet compact TCI2
  - CONSENS SDC2/SOC2/SCC2
  - Wall mounted TRI2
  - Configuration tool: EasySet
  - New: WIFI and Ethernet
  - Modbus TCP
  - BACnet IP
  - Webserver

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

X2-Operating system



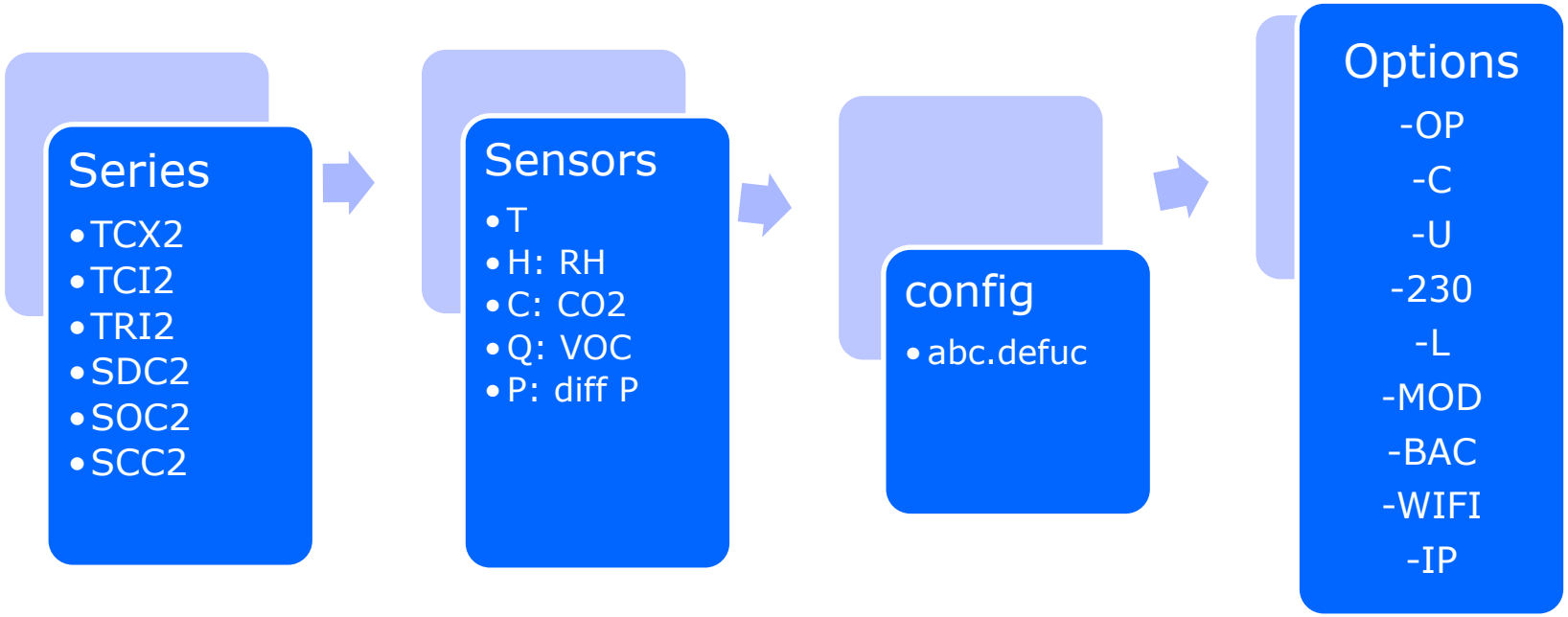
Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

X2-Operating system

- One operating system for a complete generation of products
- Same functions, parameters, configuration and features
- Different numbers and specs of inputs, outputs, functions depending on type and series
- Communication plug-ins for Modbus RTU, Modbus TCP, BTL listed BACnet MS/TP and BACnet IP over Ethernet and WI-FI

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

X2-Product ID



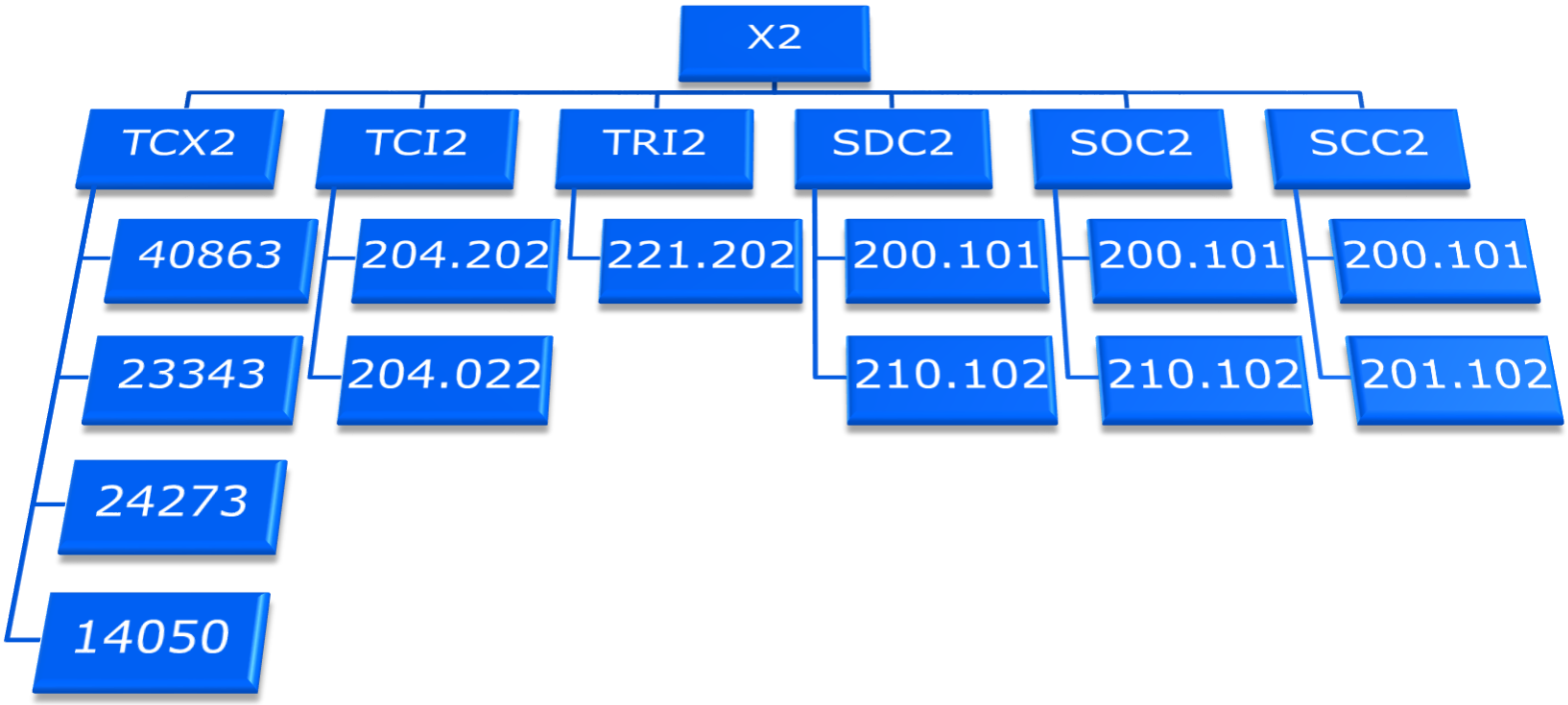
Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

X2 configuration

- TCI2-abc.def(uc)-zzz
  - a = Number of control loops
  - b = Number of passive inputs
  - c = Number of universal or analog inputs
  - d = Number of binary outputs relays
  - e = Number of binary outputs Triacs
  - f = Number of analog outputs mA und VDC
  - u = Universal: all universal inputs are NTC/mA/VDC and for TCI2: PT1000/NTC/mA/VDC,
    all analog outputs are mA/VDC
    no u = all analog in and outputs are VDC, all passive inputs are NTC.

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

X2-Series



Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

Cabinet mounted TCX2



- Up to 4 Control loops
- 8 Universal inputs NTC/mA/VDC
- 6 Binary outputs Relays
- 3 Analog outputs mA/VDC
- 8 Alarm conditions
- 12 weekly and annual schedules
- -OP = Integrated operation terminal
- MODBUS or BACnet MS/TP or BACnet IP communication

Member of BACnet International

BACnet Testing Laboratories

Easyset

Modbus TCP/IP

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TCX2-Range

- General:
  - -MOD: Modbus RTU/ASCII RS485,
  - -ETM: Modbus TCP over Ethernet
  - -WEM: Modbus TCP over WIFI
  - -BAC: BACnet MS/TP RS485 (BTL listed)
  - -ETB: BACnet IP over Ethernet (BTL listed)
  - -WEB: BACnet IP over WIFI (BTL listed)
  - -OP: Integrated operation terminal
  - -230: 230V power supply -120: 120V power supply
- TCX2-40863 (-OP)(-MOD)(-OP-MOD)(-ETM)(-WEM)
- TCX2-40863 (-BAC)(-OP-BAC)(-ETB)(-WEB)
- TCX2-23343 (-MOD)(-BAC)
- TCX2-24273 (-230)(-MOD)(-230-MOD)(-ETM)(-WEM)
- TCX2-24273 (-BAC)(-230-BAC)(-ETB)(-WEB)
- TCX2-14050 (-MOD)(-BAC)(-C)(-120-BAC)

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TCI2-204.202



- 24V or Line Voltage version
- 2 Control loops
- 4 Universal inputs:
  NTC, PT1000, mA, VDC
- 2 Binary outputs: TRIAC or Relays
- 2 Analog outputs: mA/VDC
- 8 Alarm conditions
- Optional time schedules and RTC
- Optional integrated operation terminal
- MODBUS, BACnet

Member of BACnet International

BACnet Testing Laboratories

Easyset

Modbus TCP/IP

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TCI2-Range

- General:
  - -MOD: Modbus RTU/ASCII RS485,
  - -ETM: Modbus TCP over Ethernet
  - -WEM: Modbus TCP over WIFI
  - -BAC: BACnet MS/TP RS485 (BTL listed)
  - -ETB: BACnet IP over Ethernet (BTL listed)
  - -WEB: BACnet IP over WIFI (BTL listed)
  - -OP: Integrated operation terminal
  - -L: 100 - 250V power supply
- TCI2-204.202UC (-OP)(-OP-L)
- TCI2-204.202UC (-MOD)(-OP-MOD)(OP-MOD-L)
- TCI2-204.202UC (-WEM)(-WEM-L)(-ETM)
- TCI2-204.202UC (-BAC)(-OP-BAC)
- TCI2-204.202UC (-ETB)(-WEB)(WEB-L)
- TCI2-222.200

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TRI2-TH-221.202





- 24V
- 2 Control loops
- 2 passive inputs: NTC
- 1 active input: VDC
- 2 Binary outputs: Relays NO
- 2 Analog outputs: VDC
- 8 Alarm conditions
- Optional time schedules and RTC
- MODBUS, BACnet

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TRI2-Range

- General:
  - -MOD: Modbus RTU/ASCII RS485,
  - -WIM: Modbus TCP over WIFI (internal Antenna)
  - -BAC: BACnet MS/TP RS485 (BTL listed)
  - -WIB: BACnet IP over WIFI (BTL listed) (internal Antenna)
  - -T: Internal temperature sensor
  - -H: Internal humidity sensor
  - -FA: Square mounting plate
  - -FU: Rectangular mounting plate
- TRI2-FA-T-221.202C (-MOD)(-BAC)(-WIM)(-WIB)
- TRI2-FA-TH-221.202C (-MOD)(-BAC)(-WIM)(-WIB)
- TRI2-FU-TH-221.202C (-MOD)(-BAC)(-WIM)(-WIB)

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TRI2/OPT1 Universal Mounting

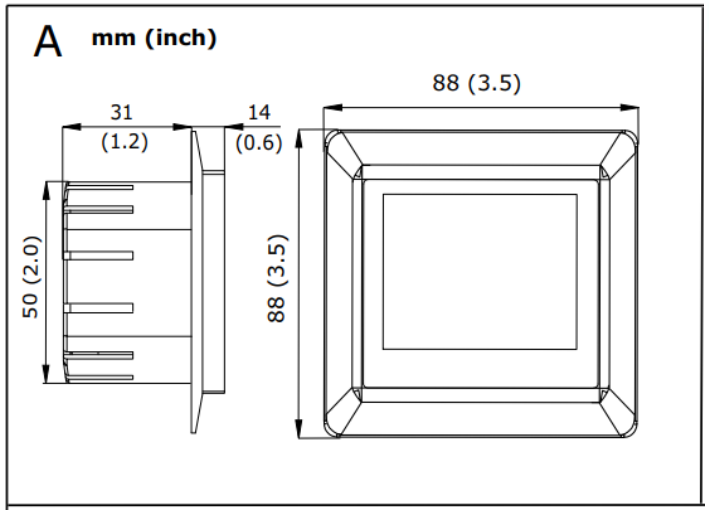


- Modular concept allows for flexible mounting
- Independent frame simplifies customization
- Sufficient space for client logo if required

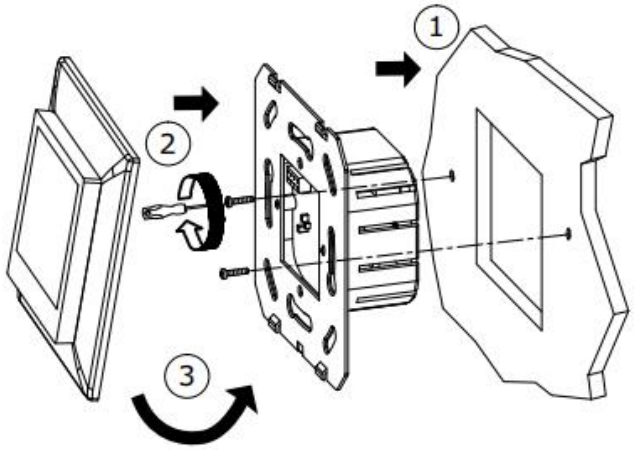
Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

TRI2-Dimensions and Install

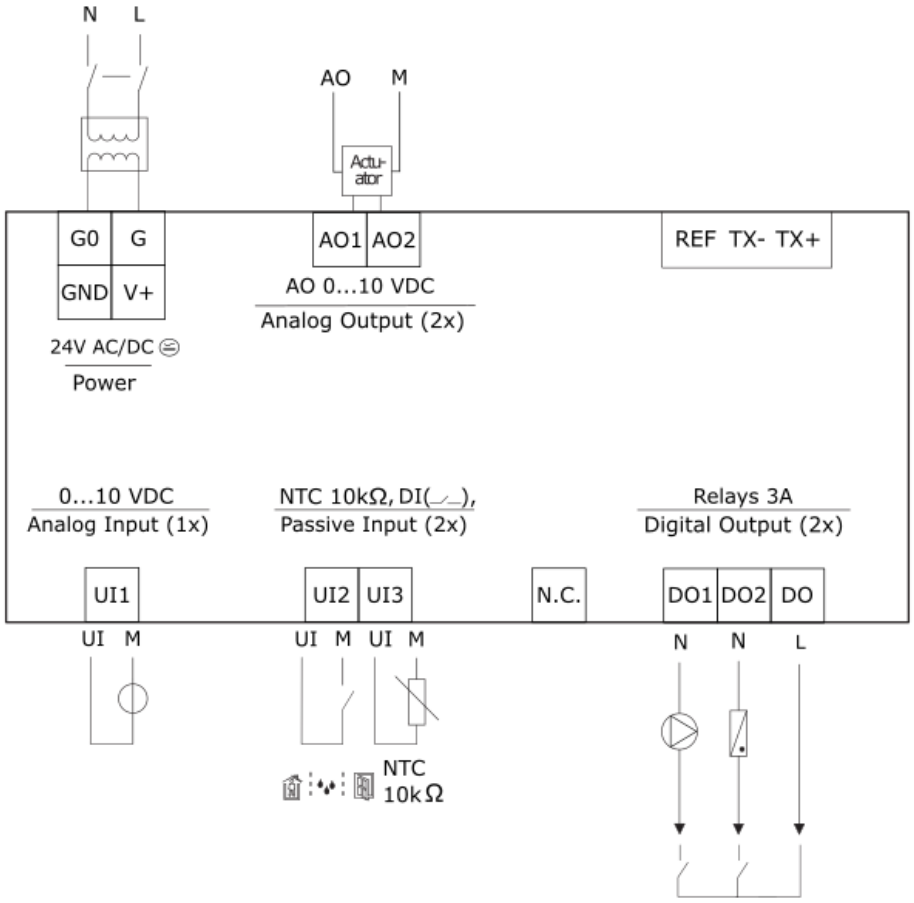
- OPT1 Housing: US, EU and CH frame
- Dimensions and installation same as OPT1



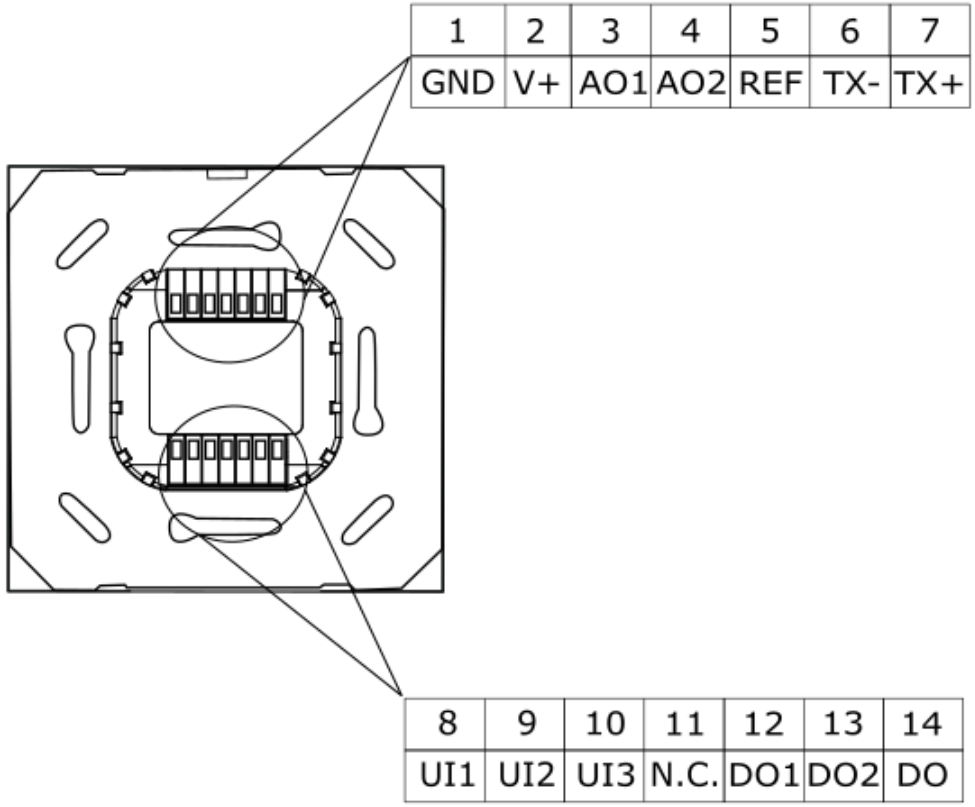
C



TRI2-Wiring Diagram



TRI2-Terminals



Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SDC2-THCQ-16-201.102



Measures

- -T: Temperature
- -H: Relative Humidity
- -C: CO2: Air quality through CO2
- -Q: VOC: Air quality through volatile compounds
- - P: differential air pressure

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SDC2-Mounting Flange



- Easy mounting
- No tools required for sensor removal
- Patented twist and fix mechanism
- Mounts on flat and round ducts



Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SxC2: Controller + Sensor



- 2 Control loops
- 1 passive input
- 2 TRIAC or 1 SPDT Relays
- 2 Analog outputs mA/VDC
- 4 Assignable alarm conditions
- Optional
  - RTC/Time schedules
  - integrated operation Terminal
  - External operation terminal
  - Bus plug-in
  - AEC-PM2

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SDC2-Range

- General:
  - SDC2: X2 type duct sensor
  - -T: Internal temperature sensor
  - -H: Internal humidity sensor
  - -Q: VOC air quality sensor
  - -C: CO2 sensor
  - -MOD: Modbus RTU/ASCII RS485,
  - -BAC: BACnet MS/TP RS485 (BTL listed)
- SDC2(-T)(-C)-200.101U (-MOD)(-BAC)
- SDC2(-TH)(-THQ)(-THC)(-THCQ)-210.102U (-MOD)(-BAC)

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SDC2/SOC2/SCC2-Design



SDC2



SDC2-OP



SOC2





SCC2

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SOC2-Range

- General:
  - SOC2: X2 type Outdoor or surface mounted sensor
  - -T: Internal temperature sensor
  - -H: Internal humidity sensor
  - -Q: VOC air quality sensor
  - -C: CO2 sensor
  - -OP: with integrated operation terminal (OPC2-S)
  - -MOD: Modbus RTU/ASCII RS485,
  - -WIM: Modbus TCP over WIFI (internal Antenna)
  - -BAC: BACnet MS/TP RS485 (BTL listed)
  - -WIB: BACnet IP over WIFI (BTL listed) (internal Antenna)
- SOC2(-TH)-210.102U (-OP)
- SOC2(-TH)-210.102U (-MOD)(-OP-MOD)(-WIM)
- SOC2(-TH)-210.102U (-BAC)(-OP-BAC)(-WIB)

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

SCC2-Range

- General:
  - SCC2: X2 type surface mounted sensor
  - -T: Internal temperature sensor
  - -H: Internal humidity sensor
  - -Q: VOC air quality sensor
  - -C: CO2 sensor
  - -P: Differential pressure, P1: ±25 Pa, P2: ±100 Pa, P3: ±500 Pa
  - -MOD: Modbus RTU/ASCII RS485,
  - -WIM: Modbus TCP over WIFI (internal Antenna)
  - -BAC: BACnet MS/TP RS485 (BTL listed)
  - -WIB: BACnet IP over WIFI (BTL listed) (internal Antenna)
- SCC2(-C)(-Q)-200.101U (-MOD)
- SCC2(-CQ)-210.102U (-MOD)(-BAC)
- SCC2(-P1)(-P2)(-P3)(-OP)-200.101U (-MOD)(-BAC)

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

OPT1 Operation terminal



Frame & Mounting plate Square



Frame & Mounting plate Rectangular

- Temperature Sensor
- Opt. Humidity Sensor
- Universal mounting



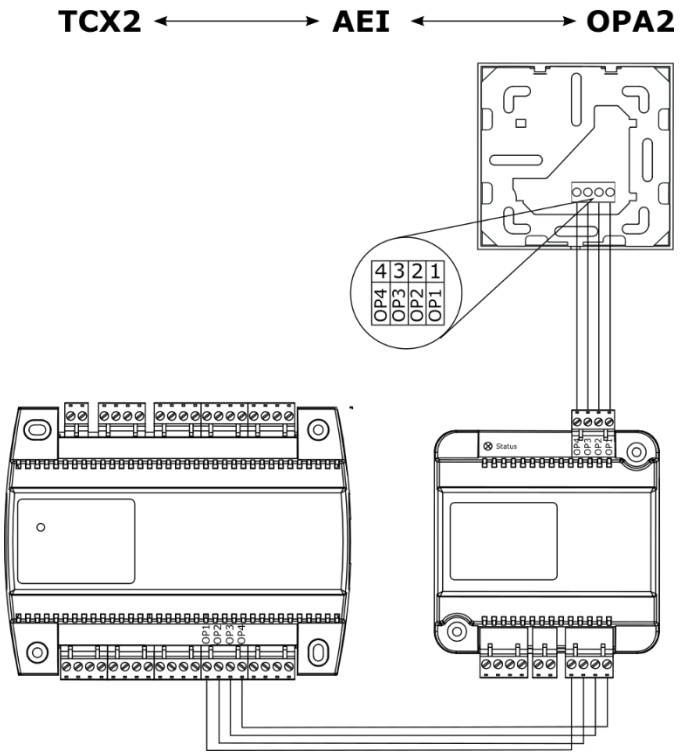
Touch

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

AEI-4UI



- Accessory for 4 additional inputs
- Accessible through VI:
- Works with all X2 except TRI2.



- Connect to OP-port.
- Connect optional OPA2-VC in series
- Selectable with jumper:
  NTC, VDC and mA

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

AEC-PM1/PM2 Copy module







- To Save Applications to Multiple Controllers
- As Backup or as configuration tool
- Automatic load on power up
- Automatic increment of address

Easyset

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

Easyset



- Upload/Download configuration
- Save projects
- Use Templates for efficient development
- Run Trends
- Easy configure time schedules

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

Webserver

- WIFI operation modes
  - Access point mode: The X2 controller provides own access point with a fixed IP: 192.168.4.1
  - Station mode: The X2 controller connects to an existing WIFI network
- User Account Management
  - The usernames are fixed as:
    - Admin
    - User
    - Guest
- Function
  - Basically same as operation terminal. See demo by Kevin Pouttu:

Premier Energy Controls · Champlin, MN · 763.286.5375 · www.pecontrols.com · kevin@premierenergyusa.com / kevin@vectorcontrols.com

VECTOR

Quality – Innovation - Partnership

Presented by
Premier Energy Controls
Champlin, MN · 763.286.5375 · www.pecontrols.com
kevin@premierenergyusa.com / kevin@vectorcontrols.com