# AX-TE-TX2-xxx-BN

Dual BACnet transmitter

## Product overview

The Axio AX-TE-TX2-xxx-BN is a dual input BACnet/MSTP transmitter. Several versions are available for PTC or NTC sensors and analogue 0-10V inputs. The unit requires 24Vac/dc power is DIN rail mounted and features high quality rising clamp terminals for ease of connection.

## Features

- PTC sensors, PT1000 / NI1000-5000 / NI1000-6180
- NTC sensors, 10K3A1 / 10K4A1 / 20K6A1
- Analogue 0-10V
- 24Vac/dc powered
- Built in termination resistor
- Isolated BACnet MSTP
- DIN rail carrier (TS35 DIN rail)
- High quality rising clamp terminals

## Product specifications

| | | |
|---|---|---|
| Inputs | PTC sensors | PT1000 (-20 to 70˚C) / NI1000-5000 (-20 to 60˚C) / NI1000-6180 (-20 to 50˚C) |
| | NTC sensors | 10K3A1 (-20 to 80˚C) / 10K4A1 (-20 to 80˚C) / 20K6A1 (-20 to 80˚C) |
| | Analogue | 0-10V (1mA max) |
| Outputs | | Isolated BACnet MSTP |
| Network | | BACnet MSTP / RTU 19K2, 38K4, 57K6, 76K8 and 115K2 baud rates |
| Supply Voltage | | 24Vac/dc (±15%) |
| Supply Current | | 80mA dc / 125mA ac maximum |
| Terminals | | Rising clamp for 0.5-2.5mm² cable |
| Ambient Temperature Range | | 0˚C to 50˚C |
| Dimensions | | 57(W) x 82(H) x 43(D)mm (Maximum) |
| Weight | | 65gms |
| Country of Origin | | United Kingdom |

## Order codes

| | |
|---|---|
| AX-TE-TX2-PTC-BN | Dual BACnet transmitter for PTC sensors. 24V supply |
| AX-TE-TX2-NTC-BN | Dual BACnet transmitter for NTC sensors. 24V supply |
| AX-TE-TX2-10V-BN | Dual BACnet transmitter for 0-10V sensors. 24V supply |
| AX-TE-TX2-10P-BN | Dual BACnet transmitter for PTC sensor and 0-10V. 24V supply |
| AX-TE-TX2-10N-BN | Dual BACnet transmitter for NTC sensor and 0-10V. 24V supply |



Annicom Ltd
Unit 21, Highview, Bordon, Hampshire. GU35 0AX
Tel: +44 (0)1420 487788 Fax: +44 (0)1420 487799
Email: sales@annicom.com Website: www.annicom.com

## Installation

The AX-TE-TX2-xxx-BN should be installed by suitably qualified technician in conjunction with any guidelines for the equipment it is to be connected to and any local regulations. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the module is being connected to.

## Description and connections

### BACnet

**Network connections**

It is not recommended to connect more then 32 devices on a single network. This number is dependent on local wiring and conditions, ie cable type / lengths, interference etc.

It recommends to use twisted pair cables specifically designed for RS-485 networks to reduce any interference. All devices should be connected C+ to C+ and C- to C-. A S (Shield) terminal is provided and if required all the units on the network should be connected to the same S (Shield) which should be grounded at one point. The devices should ideally be connected in a single chain with no stubs.

On board termination resistors are provided and only the devices at each end of the chain should have their resistors connected, place TERM jumper in EOL position. All other devices should be set to the OFF position. It is also recommended that a fail safe voltage is applied at one point on the network, usually at the main controller or router.

PROTOCOL IMPLEMENTATION CONFORMANCE

Vendor Name: Annicom Ltd.

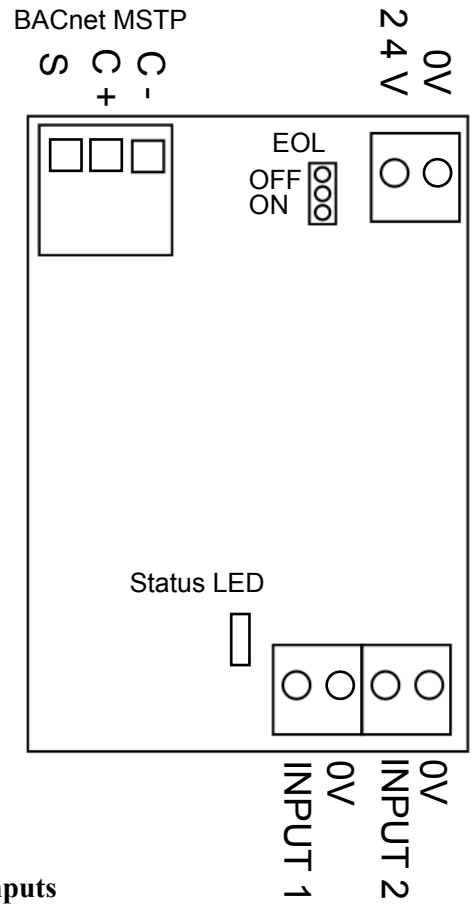
Vendor ID: 898

Product Name: AX-TE-TX2-VER-BN

VER = PTC/NTC/10V/10P/10N

Product Description

The AX-TE-TX2-xxx-BN BACnet dual communicating t transmitter has been specifically designed for HVAC applications and to be monitored on a BACnet MS-TP ® RTU network.




**Version inputs**

-NTC Input 1 and 2 listed NTC sensor

-PTC Input 1 and 2 listed PTC sensor

-10V Input 1 and 2 Analogue 0-10V

-10P Input 1 listed PTC sensor, Input 2 Analogue 0-01V

-10N Input 1 listed NTC sensor, Input 2 Analogue 0-01V

**Status LED**

Off - no power

On - Power OK - No comms

Single pulse per second - Comms OK, received token

Double pulse per second - Comms OK, unit has been accessed

Pulse burst - Unit being accessed

Every effort has been taken in the production of this data sheet to ensure accuracy. Annicom does not accept responsibility for any damage, expense, injury, loss or consequential loss resulting from any errors or omissions. Annicom has a policy of continuous improvement and reserves the right to change this specification without notice.

**Supported BACnet Services**

Data Sharing – Read Property

Data Sharing – Read Property Multiple

Data Sharing – Write Property

Data Sharing – Subscribe cov

Data Sharing – Subscribe cov property (PV only)

**Supported BACnet Objects**

Device

Analogue input

Analogue values

Multi state values

Note The controller does not support segmentation requests or responses

## Change of value

This unit supports COV subscriptions on all object present value properties, this includes status flag monitoring. Only analogue objects have COV increment properties. Binary and multistate objects monitor for any change in present value.

* Dependant on unit type

**Analogue input objects** / [Instance] (Default)

Temperature 1 (PV read only) [0] *

Temperature 2 (PV read only) [1] *

Input 1 (PV read only) [2] *

Input 2 (PV read only) [3] *

**Analogue value objects** / [Instance] (Default)

Temperature 1 offset [32] (0) *

Temperature 2 offset [33] (0) *

MSTP address [101] (0)

Maximum MSTP address [102] (64)

Device instance [103] (898000)

**Multistate value objects** / [Instance] (Default)

Sensor type [184] (PTC - PT1000 / NTC -10K3A1) *

Baud rate [197] (2 - 38K4)

## Object properties

Only properties marked (W) can be written. Present value (PV) properties marked (RO) are read only.

### Device object properties

Device instance 898 (Default)(W)

Vendor name: Annicom Ltd.

Vendor Identifier: 898

Object list: As this list

Model Name: AX-TE-TX2-PTC/NTC-BN

Max ADPU length accepted: 480

Max masters: 64 (Default), 1 to 127. (W)

Segmentation supported: No segmentation

Description: BACnet dual temperature tx.

Object Name: Default AX-TE-TX2-PTC/NTC-BN. (W)

Object Type: Device

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

### Analogue Input object properties

Analogue Input instance 0 *

Description: Sensor 1 temperature

Name: Temperature 1

Object Type: Analogue input

Present value: From sensor (RO)

COV increment: 1.0 (W)

Units: Degrees centigrade

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Input instance 1 *

Description: Sensor 2 temperature

Name: Temperature 2

Object Type: Analogue input

Present value: From sensor (RO)

COV increment: 1.0 (W)

Units: Degrees centigrade

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Input instance 2 *

Description: Input 1

Name: Input 1

Object Type: Analogue input

Present value: From input 1 (RO)

COV increment: 1.0 (W)

Units: Volts

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Input instance 3 *

Description: Input 2

Name: Input 2

Object Type: Analogue input

Present value: From input 2 (RO)

COV increment: 1.0 (W)

Units: Volts

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

**Analogue Value object properties**

Analogue Value instance 32 *

Description: Temperature 1 offset adjustment. This is added to Sensor 1 temperature.

Name: Temperature 1 offset

Object Type: Analogue value

Present value: As set, -10.0 to +10.0. (0.0) (W)

Units: Degrees centigrade

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Value instance 33 *

Description: Temperature 2 offset adjustment. This is added toe Sensor 2 temperature.

Name: Temperature 2 offset

Object Type: Analogue value

Present value: As set, -10.0 to +10.0. (0.0) (W)

Units: Degrees centigrade

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Value instance 101

Description: Address

Name. Address.

Object Type: Analogue value

Present value: As set , 0 to 127. (16) (W)

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Value instance 102

Description: Maximum address

Name. Maximum address.

Object Type: Analogue value

Present value: As set, 1 to 127. (64) (W)

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Analogue Value instance 103

Description: Device instance

Name. Device instance.

Object Type: Analogue value

Present value: 898000 (Default), 0 to 4194302. (W)

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

**Multistate Value object properties**

Multi state value instance 184 *

Description: Select sensor type. Sets sensor type for temperature inputs.

Name: Sensor type. (W)

Object Type: Multi state value

Number of states: 3

For NTC units

Present value: As set, 1 to 3. (3) (W)

State 1 text: 10K3A1

State 2 text: 10K4A1

State 3 text: 20K6A1

For PTC units

State 1 text: PT1000

State 2 text: NI1000/5000

State 3 text: NI1000/6180

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True

Multi state value instance 197

Description: MSTP baud rate

Name: MSTP baud rate. (W)

Object Type: Multi state value

Number of states: 6

Present value: As set, 1 to 5. (2) (W)

State 1 text: 19200

State 2 text: 38400

State 3 text: 57600

State 4 text: 76800

State 5 text: 115200

Status flags: In Alarm / Fault / Overridden / Out of Service

Event State: On Normal / Off Normal

Out of Service: False / True