TURCK

Industrial
Automation

How to Use Diagnostics
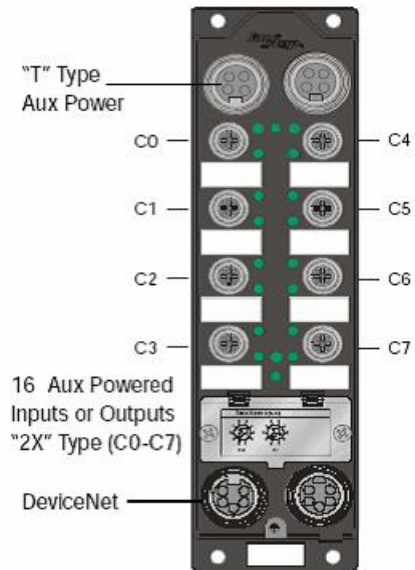# on FDNP-XSG16-TT

HOW TO

FEATURES

- PNP short-circuit protected inputs

- 0.5 Amp short-circuit protected outputs

"T" Type Aux Power

C0 — C4
C1 — C5
C2 — C6
C3 — C7

16 Aux Powered Inputs or Outputs "2X" Type (C0-C7)

DeviceNet

CONNECTORS

Universal Input or Output Connector

Type "2X"		

1 = V +
2 = Input/Output B
3 = GND
4 = Input/Output A
5 = PE

Style: 5-Pin *eurofast*

Cordsets: Single Sensor, Output or Push Button use RK 4.4T-*-RS 4.4T

Splitter: 2 Sensors or 2 Outputs use VBRS 4.4-2RK 4T-*/*

Parallel Splitter: Part Verification

Array use VB2-RS 4.4T */2RK 4.4T-*/*/S651

Single Sensor

3 (-) BU
4 (ɹ) BK
1 (+) BN

Outputs

3 (-) BU
4 (ɹ) BK
2 (ɹ) WH
3 (-) BU

Splitter and 2 Sensors

3 (-) BU
4 (ɹ) BK
1 (+) BN
2 (ɹ) WH
3 (-) BU
INPUT A
INPUT B

Push Button

3 (-) BU
4 (ɹ) BK
1 (+) BN
2 (ɹ) WH

Part Verification Array

3 (-) BU
4 (ɹ) BK
1 (+) BN
2 (ɹ) WH

I/O MAPPING

- This station can have 16 inputs or 16 outputs, or any combination of Inputs/Outputs up to 16 points.

- The station maps 3 bytes of input data, of which bytes 0 & 1 are used as input process data. The input data is also used as feedback when a point is used as an output; the corresponding input will high match the output ON (1).

- The 3rd byte of input data (Byte 2) is used for diagnostics. If bit 7 is ON (1), there is a short on one of the inputs. All input data will be 0's when this fault is detected. The station will have a blinking RED LED on the bus light. To find the shorted input, disconnect each input until the station returns to normal operation. The last input disconnected will be the one in SHORT Circuit status.

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input Data	0	I-7	I-6	I-5	I-4	I-3	I-2	I-1	I-0
	1	I-15	I-14	I-13	I-12	I-11	I-10	I-9	I-8
	2	IGS	OGS	-	-	-	-	-	-
	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output Data	0	O-7	O-6	O-5	O-4	O-3	O-2	O-1	O-0
	1	O-15	O-14	O-13	O-12	O-11	O-10	O-9	O-8

Abbreviations

I = Input Data (0=OFF, 1=ON)		O = Output Data (0=OFF, 1=ON)
ISS = Input Short Status (0=Working, 1=Fault)		OS = Output Status (0=Working, 1=Fault)
IOS = Input Open Status (0=Working, 1=Fault)		OGS = Output Group Status (0=Working, 1=Fault)
IGS = Input Group Status (0=Working, 1=Fault)		APS = Aux Power Status (0=OFF, 1=ON)

- The station maps 2 bytes of output data.

- Each bit represents an output that can be turned ON (1). Remember that the corresponding Input be will ON (1) when the output bit is ON (1).

    Example:
    Turn on outputs 10 through 15 or bit 2-7 of byte 1 on the Output table.
    Bits 2-7 on byte 1 of the Input table will also be ON (1), matching those Output bits.

- Bit 6 of Byte 2 on the Input Table is for diagnostics of the Output status, OGS. If this bit is ON (1), do an AND circuit of the output table with the input table for the outputs that should be ON (1).

    Example:
    Using the same outputs as the above example, 10 through 15 ON (1) in the Output table,
   Bit 6 (OGS) goes ON (1) and Bit 14 on the Input table is OFF (0).
    By doing an AND of the Outputs with the Inputs will determine which Output is in the Short status.

DEFINED MODES

- Using DeviceNet configuration software such as RS_Networx, defined modes of output operations can be set in the event of Bus Idle or Bus Fault conditions.

- By double-clicking on the station and going to the Parameter tab, settings can be changed in the station.

- Starting at ID20, the Bus Fault condition can be set for each output.

Options:

- OFF, ON, and Hold LAST state.
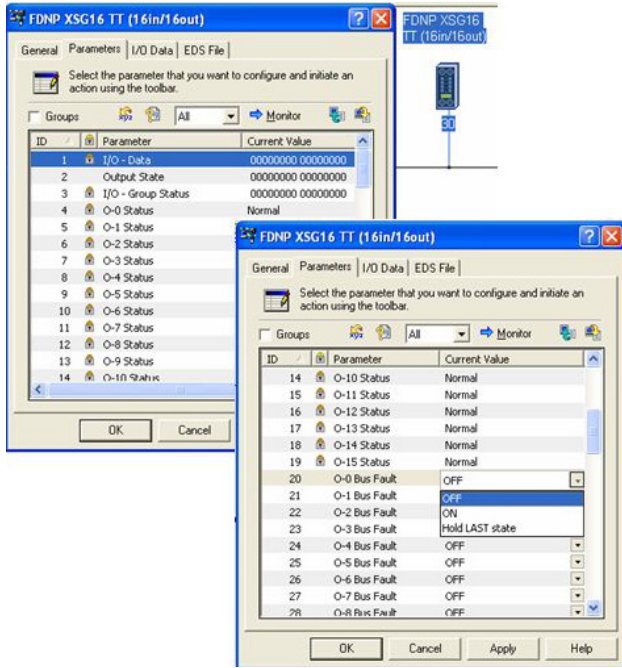
Bus Fault condition would loose communications but not DeviceNet power.

- Bus Idle mode can be found further down on ID36.

- This state is when the PLC is set to Idle Mode and the network is not scanned.

- Again, the choices for defining the status of the outputs can be OFF, ON, or Hold LAST state.

- Once these configurations are set, they need to be downloaded to the station and then remain in the station.