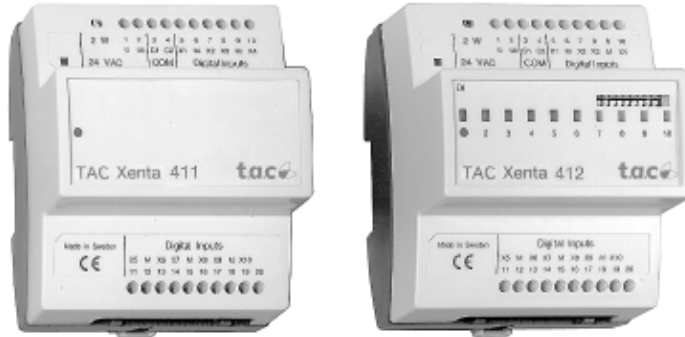




TAC Xenta[®] 411/412

Digital Input Module

29 Aug 2002



TAC Xenta 411 and 412 are Digital Input modules in the TAC Xenta family. They are used as expansion modules for the TAC Xenta controllers, connected by the common network.

Both modules have ten digital inputs and these inputs can also be used as pulse counters.

In addition, TAC Xenta 412 is equipped with LED status indicators, one for each digital input. The LED colors, red or green, are individually selectable through switches under the front cover.

TAC Xenta 411/412 is associated with a specific controller with the assistance of the TAC Menta[®] graphical tool.

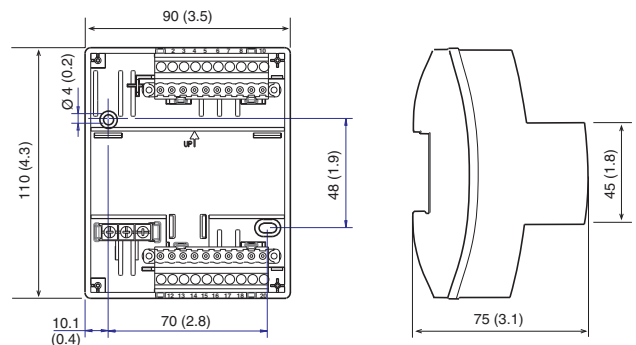
If there are several controllers and I/O modules in the same network, a special Device Configuration Tool PC program is used during the commissioning phase.

The digital input status can be checked from the TAC Xenta OP operator panel connected to any TAC Xenta controller in the same network. TAC Xenta OP has a display and a minimum number of push buttons for taking readings and altering settings.

TECHNICAL DATA

Supply voltage	24 V AC $\pm 20\%$, 50/60 Hz or 19–40 V DC
Power consumption	max. 2 W
Transformer sizing	2 VA
Ambient temperature:	
Storage	-20 to 50 °C (-4 to 122 °F)
Operation	0 to 50 °C (32 to 122 °F)
Humidity	max. 90% RH non-condensing
Mechanical:	
Enclosure	ABS/PC
Enclosure rating	IP 20
Dimensions (mm)	see diagram
Weight	0.5 kg (1.1 lbs)
Digital inputs (X1–X10):	
Quantity	10
Voltage across open contact	33 V DC
Current through closed contact	4 mA
Pulse input duration	min. 20 ms
LED digital input status indicators (TAC Xenta 412 only):	
Quantity	10
Color	red or green, selectable with DIP switch
Communication:	
Network	Echelon LONWORKS [®] TP/FT-10, 78 kbps
Agency Compliances:	
Emission	C-Tick, EN 50081-1, FCC Part 15
Immunity	EN 50082-1

mm (in.):



Safety:

CE	EN 61010-1
UL 916	Energy Management Equipment
ETL listing	UL 3111-1, first edition
.....	CAN/CSA C22.2 No. 1010.1-92
Flammability class, materials	UL 94 V-0
Part numbers:	
Electronics part TAC Xenta 411 UNCONF	0-073-0201
Electronics part TAC Xenta 412 UNCONF	
(with LED indicators)	0-073-0203
Terminal part TAC Xenta 400	0-073-0902
Operator terminal TAC Xenta OP	0-073-0907



DESIGN

TAC Xenta 411/412 consists of a terminal and a circuit board mounted together (figure 1). All terminations of field wires are made to the terminal part only. Thus, the electronics part may be removed for service without affecting the terminal connections.

Digital Inputs

The ten Digital Inputs are used to sense alarm contacts, status indications, pulse counting, etc.

Each digital input can be used as a pulse counter (e.g. flow measurement).

Another application is alarm monitoring. Each time an alarm is tripped, the corresponding counter can be arranged to increment, providing data for operating statistics.

MOUNTING

TAC Xenta 411/412 is cabinet mounted on a TS 35 mm norm rail EN 50022. The Digital Input module consists of two parts; a terminal with the screw terminals, and an electronics with circuit boards. To simplify installation the terminal can be pre-mounted in the cabinet (see figure 1).

If the module is wall mounted, a range of standardized boxes are available.

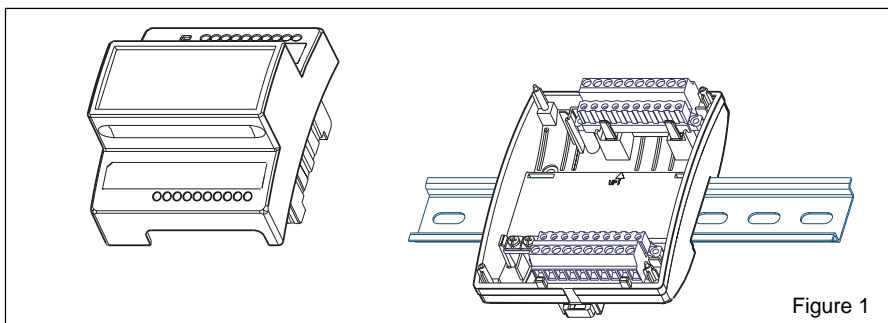


Figure 1

The Digital Input circuits are internally powered.

LED indicators

There are two general LED indicators on the front of the module. One is red and lights up if there is a hardware fault. The other is green and blinks to indicate that the application program is running.

TAC Xenta 412 is equipped with ten status indicators, one for each digital input. The corresponding LED lights up when the input status is ON.

The LED colors, red or green, are individually selectable through switches under the front cover.

CABLES

G and G0:

Min. wire size of 0.75 mm² (18 AWG).

C1 and C2:

The TP/FT-10 allows the user to wire the control devices with virtually no topology restrictions. The max. wire distance in one segment depends on the type of wire and the topology. For normal applications, using the Belden 85102 cable, the distance may be up

to 500 m (1640 ft.). For other applications, please refer to the TAC Xenta Network guide.

The wires are polarity insensitive, but must be a twisted-pair.

Terminals X1–X10:

Min. wire size of 0.25 mm² (23 AWG)

Max. cable length 200 m (650 ft.)

INSTALLATION

There is a label on the front of the controller with both the numbers and the names of the terminals (1 G, 2 G0 and so on). The numbers are also shown in the plastic of the terminal part.

Service pin

To simplify network commissioning, there is a service pin on the electronic unit which, when pressed, identifies the unit on the network.

The unique Neuron ID is printed on a label on the rear of the unit.

Terminal connections

Term. no.	Term. name	Description
1	G	24 V AC/DC
2	G0	
3	C1	LONWORKS® conn. TP/FT-10, 78 kbps
4	C2	
5	X1	Digital
6	M	Measurem. neutral
7	X2	Digital
8	X3	Digital
9	M	Measurem. neutral
10	X4	Digital

Term. no.	Term. name	Description
11	X5	Digital
12	M	Measurem. neutral
13	X6	Digital
14	X7	Digital
15	M	Measurem. neutral
16	X8	Digital
17	X9	Digital
18	M	Measurem. neutral
19	X10	Digital
20	–	–

COMMUNICATION

LONWORKS connection

TAC Xenta 300/400 controllers and I/O modules communicate with each other using a common bus, Echelon LONWORKS® TP/FT-10, Free Topology, 78 kbps. A number of controllers can form a network and exchange data.

The additional I/O units also connect to the network and may be added as required. An I/O unit can only be associated with one controller.

The LonTalk® protocol makes it possible to use Network Variables (for example I/O values) defined in foreign equipment.

TAC Xenta OP

The operator panel is also connected to the network and can thus act as an operator panel for other units in the network. The connection is made to the modular jack on the front of the TAC Xenta controller.

MAINTENANCE

The only care needed is to keep the module dry and to clean it externally with a dry cloth when needed.

TAC and TAC products are trademarks and/or registered trademarks of TAC AB.
All other trademarks belong to their respective owners. Copyright 2002 © TAC AB. All rights reserved.