



Product Catalogue

Revision 1.1 (August 2004)

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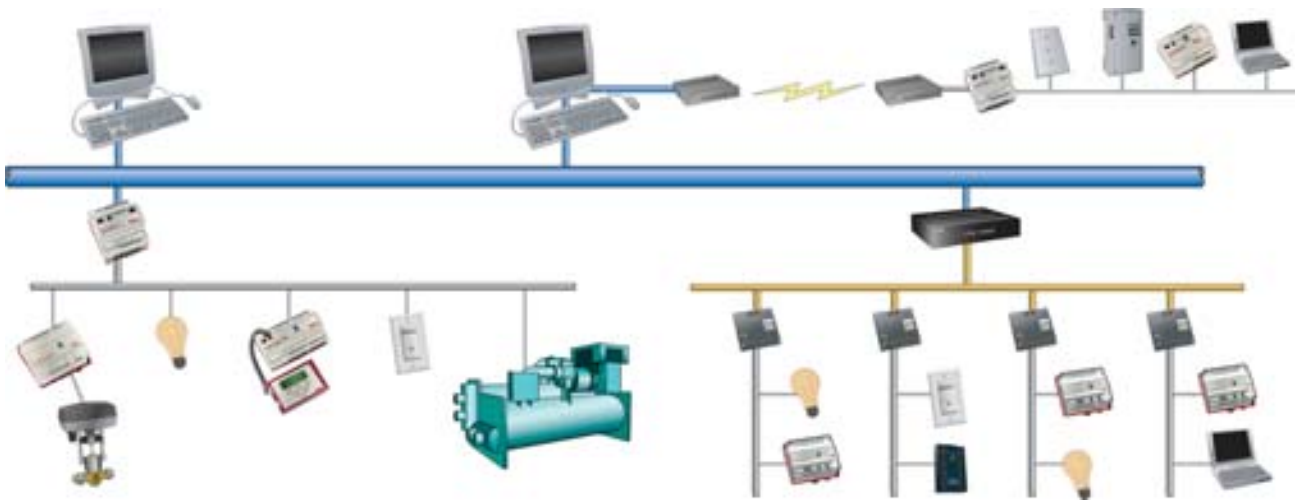
System Overview

Providing solutions enabled by
Open Systems for Building IT®



Byblos Bank, Lebanon





TAC Vista® interoperable open systems create seamless integration

To satisfy the accelerating building control requirements of today's building owners and occupants, the controls industry focuses on information technology for building management – Building IT.

By merging communications, data collection, information sharing and networking into a single, interoperable system, TAC Vista creates efficient, economical building control solutions that fit seamlessly with other products based on open system architecture.

Combining industry-standard technology with an easy-to-use interface, TAC Vista produces an integrated building management solution that is reliable, flexible and cost-effective. Full integration of environmental control as well as facility and energy management in a single software package allow you to customize TAC Vista for any building management application.

Open system for open choice

TAC Vista is based on totally open architecture, which gives customers freedom of choice in selecting products from a wide range of suppliers, yielding true vendor independence. TAC Vista's operating system is Microsoft® Windows® 2000/XP/2003 Server with standard LAN communication on Ethernet® or fiber optics using TCP/IP and standard network equipment. Field bus communication features the open LonWorks® technology, which is used by more than 3,000 vendors worldwide.

TCP/IP offers a variety of networking architecture options

Using TCP/IP, TAC Vista Workstations can communicate across the Internet and existing commercial WAN/LANs.

TAC Vista's flexible architecture makes it highly scalable

TAC Vista is eminently suited for any building management application, regardless of the building size, the number of buildings or how many miles separate the buildings. TAC Vista manages multi-campus office parks and district-wide school systems just as efficiently as single, small office buildings.



National Physical Laboratory, United Kingdom



You will always know what is happening within your control system

Alarms and historical logs provide system monitoring that is both reliable and flexible. TAC Vista operators can respond to critical alarms in seconds. The receipt of an alarm can even automatically display a specific system page, giving the operator quick, graphical access to the situation. Alarm can also be sent as e-mail and SMS text messages.

TAC Vista

TAC Vista is the software solution that efficiently controls, checks and analyzes the daily operation and economical running of a building. TAC Vista is available in a variety of packages designed to maximize efficiency and economy. TAC Vista is also modular, making it easy to expand the system as your needs change.

TAC Vista Server and Workstation

TAC Vista Server provides access to the environmental controls for operator workstations. TAC Vista Workstation is the primary operator interface to the control system. It displays daily operations through a graphical user interface, providing operators with ready access to alarms, historical logs and sophisticated data trend logs as well as standard and custom reports.

TAC Vista Webstation

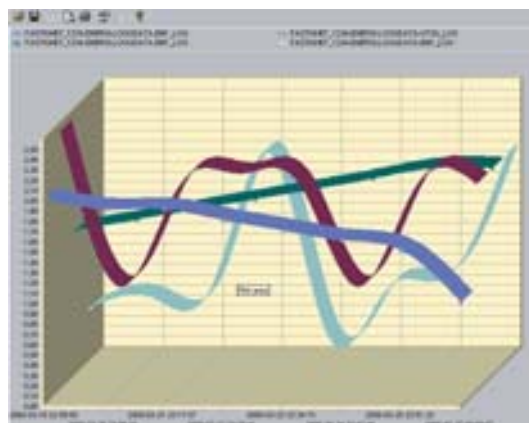
Webstation allows access to the control system using common web browsers. The browser has access to the Navigator, a Microsoft®-Explorer like application, as well as to TAC Vista Graphics, Alarms and Trend Viewer. TAC Webstation provides access to trace events in the system, and periodic or automatic reports.

TAC Vista ScreenMate

The main task of the TAC Vista ScreenMate is to replace the functionality found in sophisticated room thermostats. ScreenMate makes it possible for users to read and make personal changes to settings such as the room temperature setpoint or to view the outside air temperature directly from the user's PC. ScreenMate can be installed on every PC. It communicates with the TAC Vista Server via TCP/IP.



Monitor all aspects of how your building operates

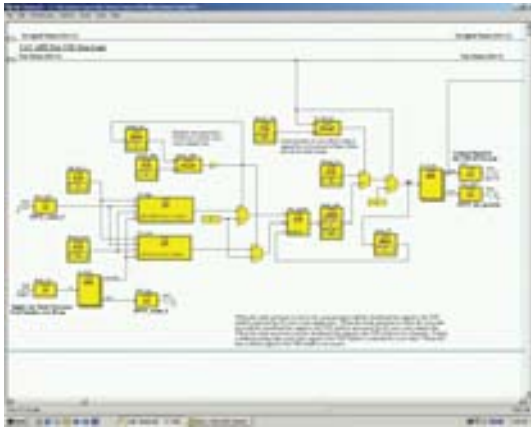


Analyze to improve building performance



Control your environment from your desktop





TAC Menta®

TAC Menta is the programming software tool for the TAC Xenta® controllers. You will save time and improve operational reliability with this engineering tool for HVAC applications.

TAC Menta:

- Provides many pre-programmed function blocks and basic application elements
- Monitors offline simulations and online testing with an integrated trend log



TAC Xenta®

All TAC Xenta controllers provide open, future-proof system architecture. TAC Xenta controllers provide access to a standardized LonWorks®-based network technology supporting a flexible control system to which components from other manufacturers can be connected.

The **TAC Xenta 100** line consists of LonMark®-certified Application Specific controllers designed for specific applications such as fan coil, VAV, chilled ceiling and rooftop air handling units.

The **TAC Xenta 280 and 300** series of LonMark-certified programmable controllers are intended for any type of plant room control applications.

The LonMark-certified **TAC Xenta 401** programmable controller is intended for larger applications.

TAC Xenta 400 I/O Modules can be added to TAC Xenta 300 and TAC Xenta 401 Controllers.

The **TAC Xenta 511** Webserver is a cost-effective method of monitoring small-scale LonWorks-based networks. The TAC Xenta 511 works like any web server, making it easy to monitor and control operations over the Internet or intranet.

The **TAC Xenta 911** is an Ethernet communication device that lets you communicate with your LonWorks network over TCP/IP.

The **TAC Xenta 913** is a cost effective solution for integrating products from different manufacturers with different protocols, e.g. BACNET & MODBUS.

The **TAC Xenta 527** is a cost effective gateway for web enabling an existing I/NET installation. It can also communicate with LonWorks networks.



System Architecture

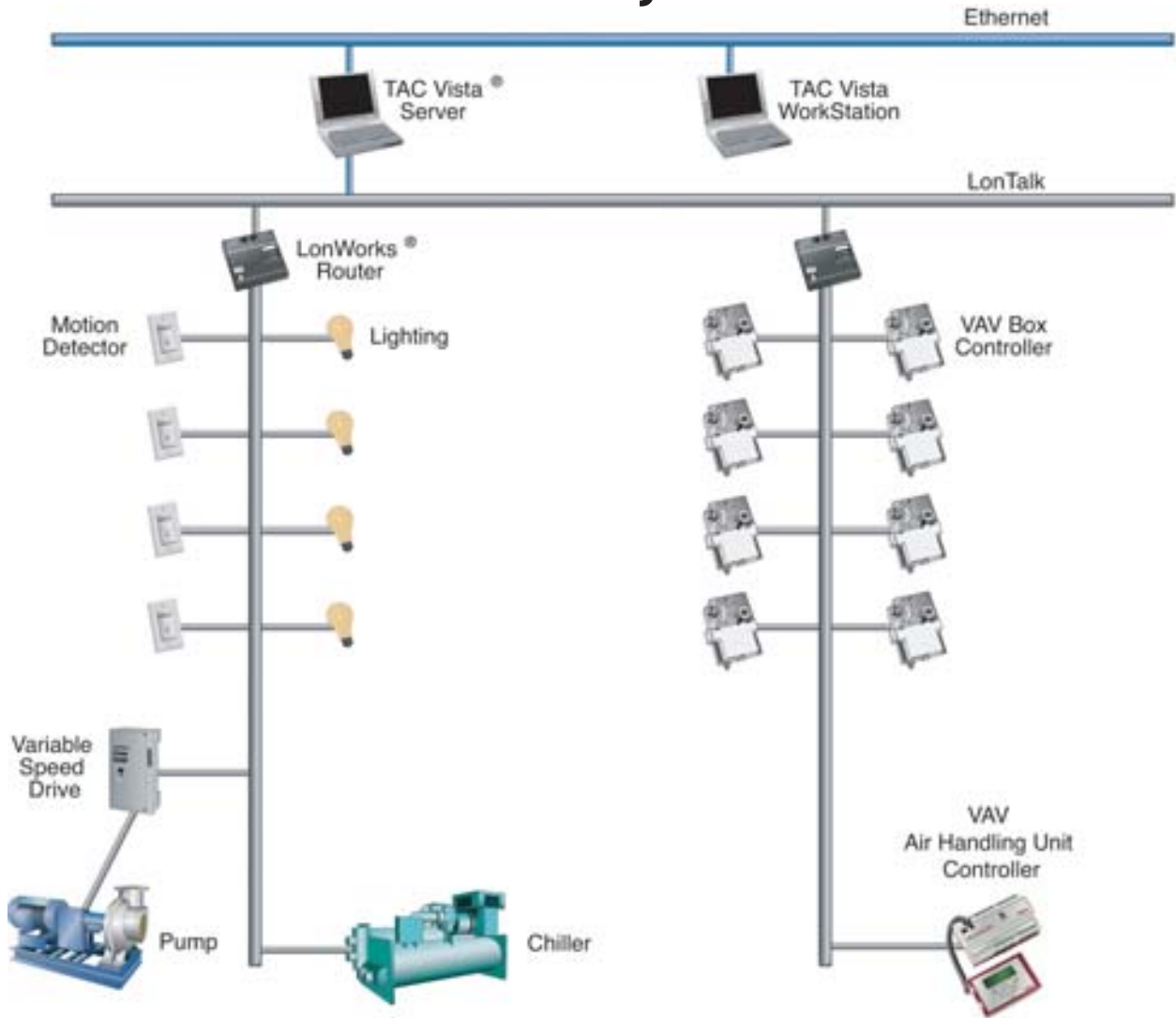
Local System

Remote System

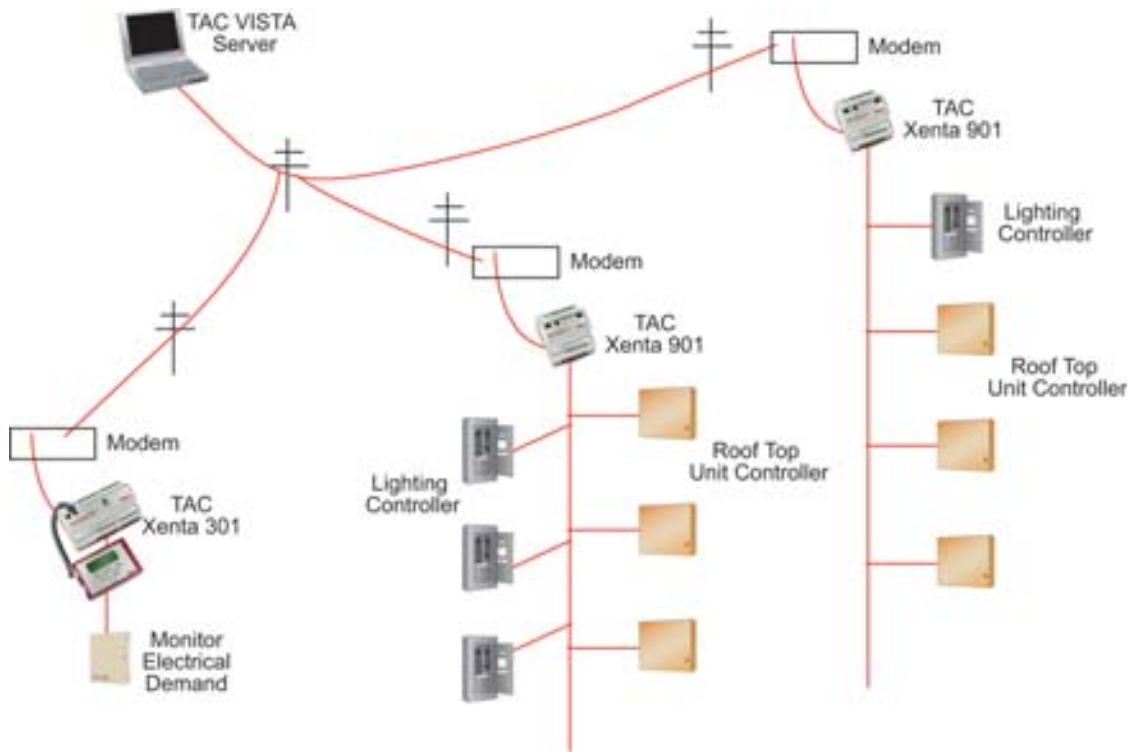
LAN/WAN System



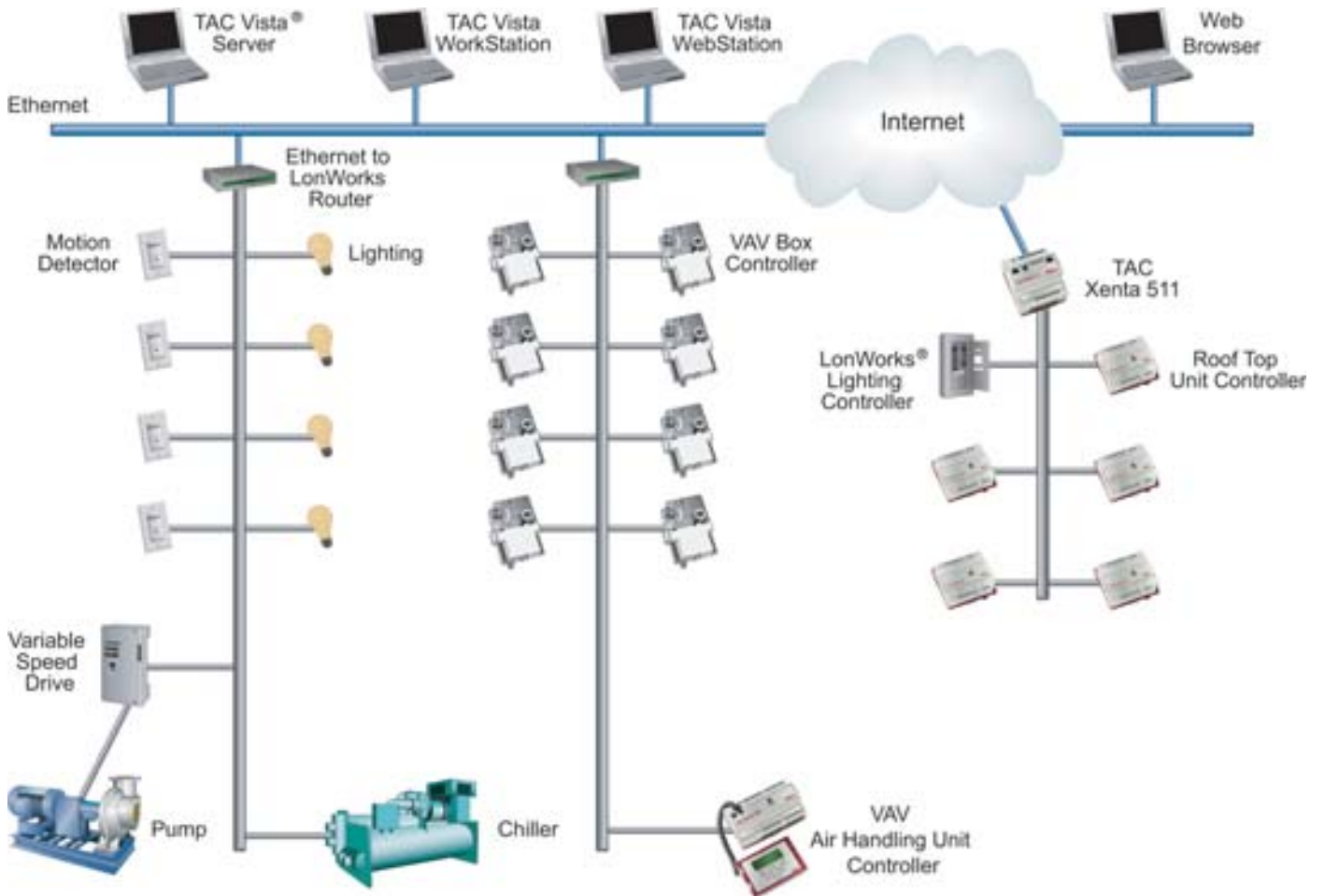
1. Local System



2. Remote System



3. LAN/WAN System



TAC Vista® IV Software Modules



Edith Cowan University, Australia



TAC Vista® IV

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TAC Vista® IV

TAC Vista Presentation System

TAC Vista is a graphics-based building management system for the Microsoft® Windows® 2000/XP Professional/2003 Server operating system that can display, monitor and operate all technical building service systems. The TAC Vista's modular software structure makes it flexible and adaptable with respect to system size and functionality. It is therefore suitable for buildings of all types and sizes.

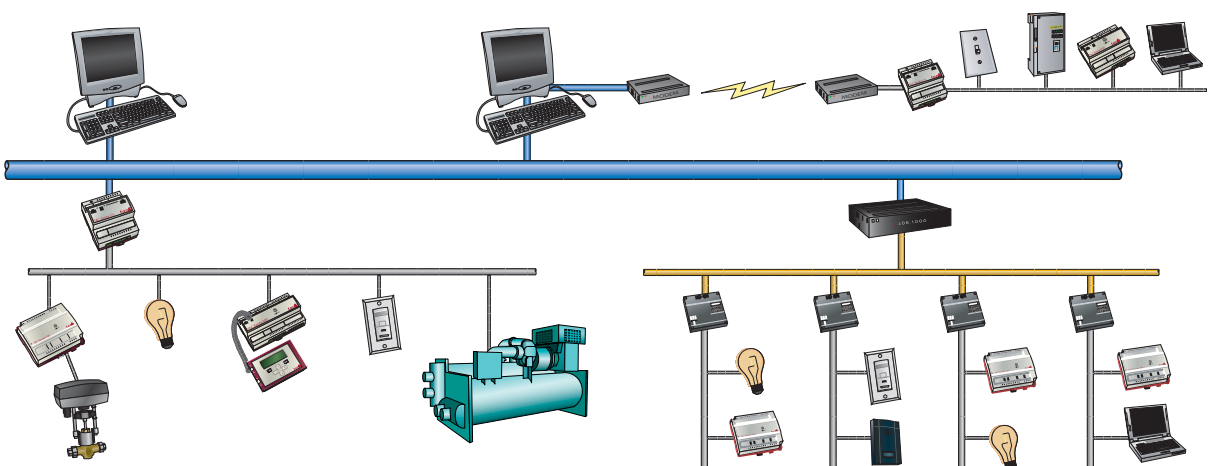
TAC Vista has an open interface that supports all building service systems including HVAC technology, fire alarm, access control and lighting control, as well as complete maintenance and repair programs and facility management solutions.

Communication with the TAC Xenta® Controllers is via the open standard LonTalk® protocol. TAC Vista also supports stand-alone operation using the TAC Xenta Application Specific controllers and other LonWorks based devices. Modules are available that allow controllers to communicate with the older systems like TAC ZONE II and SYSTEM 7.

The OPC (OLE for Process Control) and DDE (Dynamic Data Exchange) open interfaces can be supplied with a wide range of drivers that allow third party system operation.

The number of units that can communicate with each other via the client server architecture, in a distributed system, is unlimited. The TCP/IP protocol is used for communication via a LAN/WAN (Local/Wide Area Network), which is supported in an Ethernet environment by Microsoft® Windows® 2000/XP Professional/2003 Server.

TAC Vista® – System Architecture example



TAC Vista® IV

TAC Vista IV

Basic functions

- Graphics-based operating interface
- Alarm Handling
- Authority/Security
- Trend Logging
- Event Viewer (system journal)
- Scheduling
- Data Protection

Options

- Report Generator
- OPC Server, OPC Client
- TAC Menta®
- Color Graphics Editor
- Web Server
- Virtual room unit, ScreenMate
- Communication SYSTEM 7
- Database Generator
- IPCL Editor, CIPCL Editor
- TAC Signature, Energy Management

Minimum Hardware

- Industry standard PC with 733 MHz Pentium® III or higher processor
- 128 MB main memory
- Minimum of 300 MB available hard disk space
- CD ROM drive
- Graphics card, min. 1024 x 768 pixels
- Minimum 17" color monitor
- Microsoft® compatible mouse

Software requirements

- Microsoft Windows® 2000 Professional (Service pack 4), Microsoft Windows 2000 Server (Service pack 4), Microsoft Windows XP Professional (Service pack) 2003 Server, Microsoft Windows 2003 Server
- Microsoft Office 2000
- Microsoft Internet Explorer



Compatible with

- 21 CFR Part 11
- NT Domain Security
- HTTPS/SSL
- Internet and Intranet
- LonWorks/LNS
- OPC
- I/Net
- Danduc

TAC Vista® IV



TAC Vista® IV

TAC Vista IV Server

The TAC Vista IV Server communicates with TAC Xenta controllers or with any LonWorks product using SNVTs (Standard Network Variable Types).

Connection for remote monitoring and/or remote control of TAC systems is by a LonTalk adapter or a dedicated/dial-up line. Geographically remote systems can be connected via a modem or via intranet or internet. Automatic bi-directional dial-up (Auto Dial) is used for requests, changing values and for transferring alarms.

Data storage kernel for the following functions

- Network management in a multistation system
- Database Management
- Alarm Handling
- Authority/Security
- Backup
- Scheduling
- Trend Logging
- Event Logging
- Central IPCL
- System Administration

TAC Vista IV Server CD LPT	0-008-7945-0
TAC Vista IV Server CD USB	0-008-7946-0

TAC Vista IV LE (Light Edition)

The TAC Vista IV LE can communicate with TAC Xenta controllers or with any LonWorks products using SNVTs (Standard Network Variable Types).

A PC LonTalk adapter or a dedicated/dial-up line connection is used to communicate with the controllers. Geographically remote systems can be connected via a modem. Automatic bi-directional dial-up (Auto Dial) is used for requests, changing values and for transferring alarms. The TAC Vista IV LE is a single user system and cannot be expanded to include functions such as TAC Vista IV Webstation, TAC Vista IV ScreenMate or multi user systems.

TAC Vista IV LE includes TAC Vista IV Server and TAC Vista IV Workstation.

Data storage kernel for the following functions

- Database Management
- Alarm Handling
- Authority/Security
- Backup
- Scheduling
- Trend Logging
- Event Logging
- Central IPCL
- System Administration

TAC Vista IV LE CD LPT	0-008-7940-0
TAC Vista IV LE CD USB	0-008-7941-0



TAC Vista® IV

TAC Vista IV Workstation Standard

Basic software module with color graphics, alarm handling, authority/security, scheduling, trend logging and data backup functionality.

Color Graphics

- Dynamic color graphics
- Display and control
- Hierarchical image links
- Real-time data acquisition
- Simultaneous display of several graphics on one screen
- Dynamic trend curves

Alarm Handling

- Alarm and status monitoring
- Color-coded alarm display with information text
- Time and/or event-controlled alarm output on one or several printers
- 1000 alarm priority levels
- Real time error message processing
- Alarm interlocking
- Selection and sorting options for alarm summary
- Alarm links to reports, color graphics, trend charts and text files
- Alarm repetition block
- Error report statistics
- Audible and visual alarm reports
- Error report acknowledgement

Access Control

- User identification
- Specified access authorisation for all users
- Standby log out function
- Automatic log out function
- Encrypted passwords and NT security



Backup

- Seamless recording of all system data

Time Schedule

- Automatic daylight savings correction
- Automatic leap year function
- Weekly and alternative time programs
- System time synchronisation
- Supports system distributed over several time zones

Trend Viewer

- Variety of calculation functions
- Time and event controlled activation
- Post editing option of recorded values
- Recording interval of 10 seconds to 10 years
- Dynamic trend curves
- Graphic display and evaluation of online values and trend logs
- Easy operation based on the Microsoft Windows standard
- Export of values to other applications such as Microsoft Excel
- Variety of graphical presentation options

TAC Vista® IV

TAC Vista IV Workstation Standard (cont'd)

Event Viewer

Acquisition and storage of all events that occur in the system (system diary):

- Database based on Microsoft® Access
- Chronological acquisition of event data within the system when entering date, time, command carried out and the corresponding user
- Recording of events and commands
- Clearly arranged display of event data

System Documentation

- System configuration
- Process units
- Object list
- Data point list
- Data point checklist
- Fixed values

TAC Vista IV Workstation Standard 0-008-7965-0

TAC Vista IV Workstation Manager

Basic software module with color graphics, alarm handling, authority/security, scheduling, trend logging and data backup functionality.

TAC Vista IV Workstation Manager has the same functionality as TAC Vista IV Workstation Standard, and includes the following additional features:

Report Generator

- Standard software based on Microsoft Excel
- Form and content of the displays can be freely configured
- Wide range of options for editing the acquired data
- Complete support for Microsoft Excel presentation formats such as lines, bars and pie charts
- Reports can be printed on demand, or as scheduled
- Wide range of options for text entry, preparation of graphics and calculation
- Standardised formats or customised reports
- Display on screen or printed on one or several printers

Signature

- Dynamic data exchange or manual data entry
- Budget management and control
- Energy profile
- Energy usage reports
- Degree days calculation
- Consumption can be displayed based on a range of parameters

TAC Vista IV Workstation Manager 0-008-7966-0

TAC Vista IV Workstation Professional

Basic software module with color graphics, alarm handling, authority/security, scheduling, trend logging and data backup functionality.

TAC Vista IV Workstation Professional contains the same functionality as the TAC Vista IV Workstation Manager, but in addition includes the following features:

Color Graphic Editor

- Extensive standard symbol library
- Symbol editor
- Run-time simulation
- Unrestricted tool positioning
- Multiple graphics
- Import of graphics in .bmp .gif .jpg .pcx .tif formats
- Dynamic and animated graphics and creation of dynamic links

TAC Menta®

- Easy graphical programming
- Large functions and applications library
- Definition of LonWorks variables (SNVTs) as XIF file
- Offline simulation
- Online operating functions
- Dynamic online trend
- Documentation support
- Download of software to TAC Xenta controllers
- Fully integrated with the TAC Vista database
- Definition of menu structure for the TAC Xenta Operator Panel

OPCTool

- Integration of OPC-servers in the TAC Vista IV database
- Simple operation based on the Microsoft Windows standard
- Structures and objects can be imported from external OPC servers

WebTool

Software tool for generating Web pages in HTML format and for setting product parameters:

- TAC Xenta 511 Webserver Version 1
- TAC Vista IV Webstation

CIPCL Editor

- Programming language for logical and special functions in the server
- Source file preparation
- Program code conversion

IPCL Editor

- Programming language for logical and special functions for the controller family TA 65XX and 67XX
- Source file preparation
- Download of software to the controllers

Database Generator

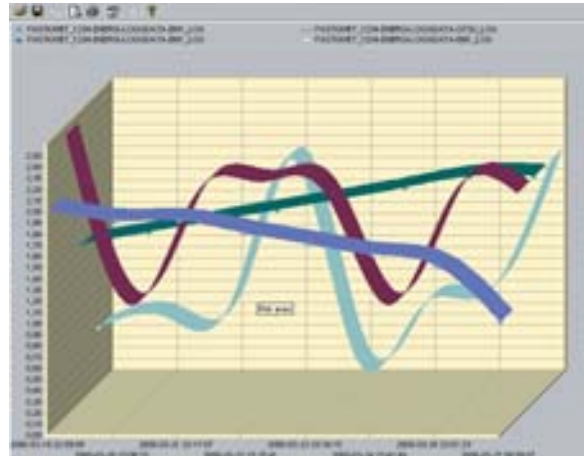
- Copying, processing and reusing existing system data from other projects
- Data import, export and conversion
- Conversion and adaptation of system information in the TAC Vista database

TAC Vista® IV

TAC Vista IV Webstation

The software module TAC Vista IV Webstation gives access to TAC Vista IV systems using a standard Web browser via the Intranet /Internet. The following operating functions are supported:

- Display and acknowledge alarms
- Read and write values
- Dynamic color graphics
- Trend logging
- Historical events
- Reports and charts

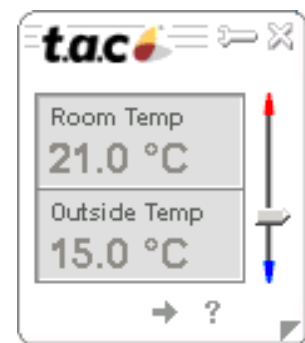


TAC Vista IV Webstation Server	0-008-7995-0
TAC Vista IV Webstation Expansion 3 users	0-008-7996-0
TAC Vista IV Webstation Expansion 6 users	0-008-7997-0
TAC Vista IV Webstation Expansion 12 users	0-008-7998-0
TAC Vista IV Webstation Expansion 24 users	0-008-7999-0
TAC Vista IV Webstation Upgrade of Webstation 2.0	0-008-8000-0

TAC Vista ScreenMate (Virtual Room Unit)

Room control via the Intranet on a PC workstation:

- Virtual room control device as monitor image
- Individualised control configuration
- Variable setting of room functions such as:
 - Dimming lights
 - Switching lights
 - Adjusting blinds
 - Change setpoints
 - Display of actual values



TAC Vista ScreenMate 10 users	0-008-7910-0
TAC Vista ScreenMate 100 users	0-008-7911-0
TAC Vista ScreenMate 500 users	0-008-7912-0

TAC Vista® IV

TAC Vista IV OPC Client

Software module for communicating with a wide range of third party drivers via an OPC server. More than 100 OPC servers are available for integrating devices and systems from other manufacturers.

Drivers are available for the following communication protocols:

ABB Master – Alfa Laval Automation – Andover – BACnet – BAS2800 – CAN – Carrier CCN – CSI
Danfoss Danduc – EIB – Exomatic – Fabec/Tateco AB – FIX – Interbus-S – JCI – Landis & Gyr
Modicon Modbus – Panasonic – Profibus – Saia S-Bus – Toshiba – Telefrang N45 – TREND IQ70
Siemens S7, H1, L2 – Siematic – York YT – Zerberus

Additional information and supply sources are available on request.

TAC Vista IV OPC Client 0-008-7948-0

TAC Vista OPC Server

A software module for open access, via an OPC standard interface, to the TAC Vista IV server. Provides LonWorks network object data (nodes, network variables) as OPC objects in a continuously updated database and carries out all the packaging, converting and updating required for these objects:

- Client/server architecture
- Easy and convenient access to TAC Vista via OPC
- Automatic updating
- Suitable for large data quantities

TAC Vista OPC Server 0-008-7949-0

LNS® Server

The Echelon® LNS Server is used to expand the TAC Vista IV Server so that it can communicate with LonWorks devices directly via LNS. The LNS-Server is required for systems where LonMaker® is not installed.

LNS Server 0-008-7950-0

TAC Vista IV Report Generator

Software module that independently generates clear and informative reports and overviews, such as alarm and maintenance reports, status reports, trend logging reports as well as special user-defined reports, diagrams and overviews:

- Standard software based on Microsoft Excel
- Form and content presentation can be freely configured
- Wide range of options for editing acquired data
- Complete support for Microsoft Excel presentation options such as lines, bars and pie charts
- Report printing on demand, or as scheduled
- Wide range of options for text entry, preparation of graphics and calculation
- Standard formats or customised reports
- Display on screen or printed to one or several printers

TAC Vista IV Report Generator 0-008-7975-0



TAC Vista® IV

TAC Vista IV Color Graphic Editor

A high performance stand-alone software module for creating and editing dynamic system images.

A broad range of drawing tools, symbols and functions allows customised and efficient color graphic creation:

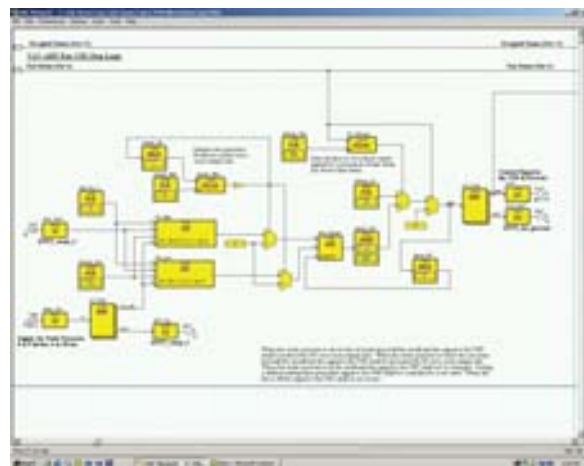
- Extensive standard symbol library
- Symbol editor
- Run time simulation
- Unrestricted tool positioning
- Multiple graphics
- Import of .bmp .gif .jpg .pcx .tif graphics files
- Dynamic and animated graphics as well as creation of dynamic links

TAC Vista IV Color Graphic Editor 0-008-7977-0

TAC Menta

High-performance engineering tool for unrestricted graphics programming and operation of TAC Xenta controllers:

- Easy graphical programming
- Extensive function and application library
- Definition of LonWorks variables (SNVTs) as XIF file
- Offline simulation
- Online operating functions
- Dynamic online trend
- Documentation support
- Download of software to TAC Xenta controllers
- Fully integrated with the TAC Vista database
- Definition of menu structures for the TAC Xenta Operator Panel



TAC Menta 0-008-7983-0

TAC Vista IV OPCTool

Software module for the integration of OPC servers into the TAC Vista IV database (clients). It is easy to operate and based on the Microsoft Windows standard. This minimises the work required to configure the OPC client in the TAC Vista IV server database. Structures and objects are imported into this from external OPC servers.

TAC Vista IV OPCTool 0-008-7978-0



TAC Vista® IV

TAC XBuilder

TAC XBuilder is the programming tool for TAC Xenta 511, (version 2.0 and later), TAC Xenta 913 and TAC Xenta 527. TAC XBuilder addresses the programming task from the end user point of view, instead of from the device point of view. TAC XBuilder is a project oriented tool, which means that all data in an application will be stored in a project container.

TAC XBuilder 0-008-8034-0

TAC Vista IV Database Generator

Software module for the efficient processing of project specific system data

- Copying, editing and reusing existing system data from other projects
- Conversion and adaptation of system information in the TAC Vista IV database
- Data import, export and conversion

TAC Vista IV Database Generator 0-008-7982-0

TAC Vista IV WebTool

A software tool for creating Web pages in HTML format and configuring TAC Xenta 511 so that they can be accessed using a standard Web browser. It is also used to create value pages for TAC Webstation.

- TAC Xenta 511 Webserver (Version 1)
- TAC Vista IV Webstation (value pages)

TAC Vista IV WebTool 0-008-7979-0

TAC Vista IV Signature

Stand-alone energy management software for the optimal analysis of large data volumes:

- Dynamic data exchange or manual data entry
- Energy usage reports
- Budget management and control
- Degree days calculation
- Energy profiles
- Consumption can be displayed based on a range of parameters

TAC Vista IV Signature 0-008-7876-0



TAC Vista® IV

TAC Vista IV Communication SYSTEM 7

Software module for communication with the TAC ZONE II and SYSTEM 7 systems. It supports PLB, KE11 and LCU-C communication interfaces and a dedicated/dial-up line connection is used for remote monitoring and/or remote control. Geographically remote systems can be connected via a modem. Automatic bi-directional dial-up (Auto Dial) is used for requests, changing values and for transferring alarms.

TAC Vista IV Communication SYSTEM 7 0-008-7947-0

TAC Vista IV CIPCL Editor

High-level language for efficient programming of special functions in the TAC Vista IV Server:

- Programming language for logical and special functions in the server
- Source file preparation
- Program code conversion

TAC Vista IV CIPCL Editor 0-008-7981-0

TAC Vista IV IPCL Editor

High-level language for programming logical functions in TAC ZONE II and TAC SYSTEM 7 systems:

- Programming language for logical and special functions in the controller family TA 65XX and 67XX
- Source file preparation
- Download of software to the controllers

TAC Vista IV IPCL Editor 0-008-7980-0

Engineering Tools



t.a.c. 

Engineering Tools

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Loytec LonWorks Protocol Analyzer	31

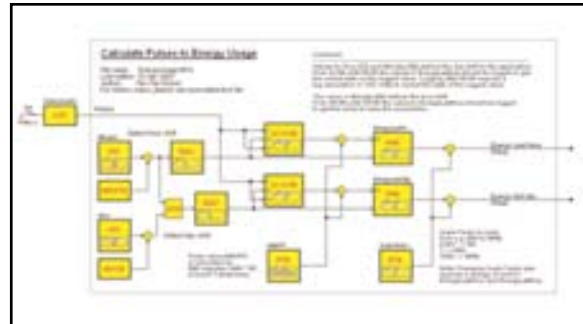


Engineering Tools

TAC Menta®

Fully featured, graphical engineering tool for programming, commissioning and operating TAC Xenta® controllers:

- Easy graphical programming
- Wide range of functions and application libraries
- Trend logging, scheduling and alarm definitions
- Automatic creation of LonWorks® object files in XIF format
- Offline simulation
- Single step execution
- Online operating functions
- Dynamic online trend
- Documentation support



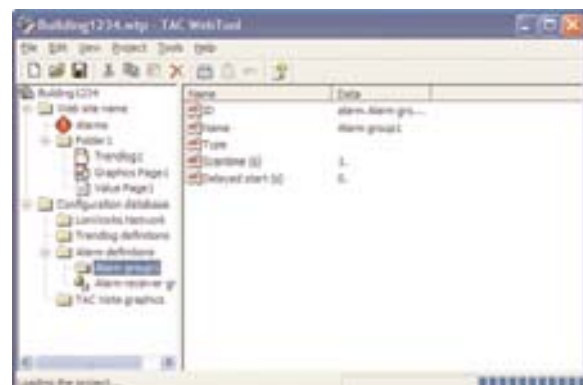
- Downloading of software to TAC Xenta controllers
- Fully integrated with the TAC Vista® database
- Definition of the menu structure for the TAC Xenta OP, Operator Panel

TAC Menta CD LPT	0-008-8025-0
TAC Menta CD USB	0-008-8026-0

TAC WebTool

TAC WebTool is used to program and configure TAC Xenta 511 version 1.0. TAC Graphics Editor is included for graphics pages creation. For later versions of TAC Xenta 511 use TAC XBuilder. TAC WebTool is also used to create value pages for TAC Webstation.

- TAC Xenta 511 Webserver (Version 1.0)
- TAC Vista Webstation (value pages)



TAC WebTool	0-008-7979-0
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Engineering Tools

TAC XBuilder

TAC XBuilder is the programming tool for TAC Xenta 511, (version 2.0 and later). XBuilder addresses the programming task from the end user point of view, instead of from the the device point of view. XBuilder is a project oriented tool, which means, all data in an application will be stored in a project container.



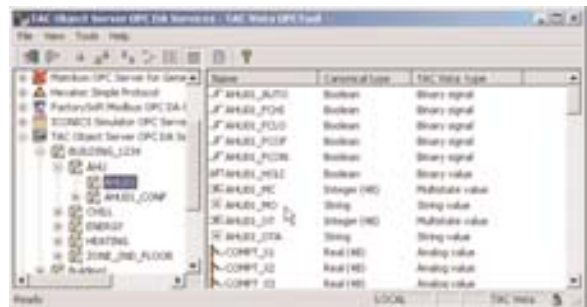
The user interface is intuitive and customisable with four main windows:

- System: Describes the logical system with objects and connections
- Network: Describes the physical implementation of the system with objects
- Properties: Describes the the properties of the selected object in the System or Network window
- Output: Informs the user about errors and warnings in the project

TAC XBuilder 0-008-8034-0

TAC Vista OPCTool

The TAC Vista OPCTool is a tool used for browsing OPC servers and automatically programming the TAC Vista database. In specific, this tool is used for TAC OPC server for Danduc, I/Net OPC server or any other OPC server supporting OPC Data Access, Alarm & Events or Historical Data.



Programming the TAC Vista database involves choosing the signals and trend logs you need to generate and operate. After generation of the objects, TAC Vista will be able to communicate with any equipment that is handled by an OPC server.

- TAC Vista OPCTool can be used to perform these tasks:
- Locate OPC servers locally or on any node of a network
 - Browse the hierarchy of items in the OPC server
 - Create and update objects for the TAC Vista database
 - Substitute unsupported characters in OPC servers
 - Log result to a log file

TAC OPCTool 0-008-7978-0

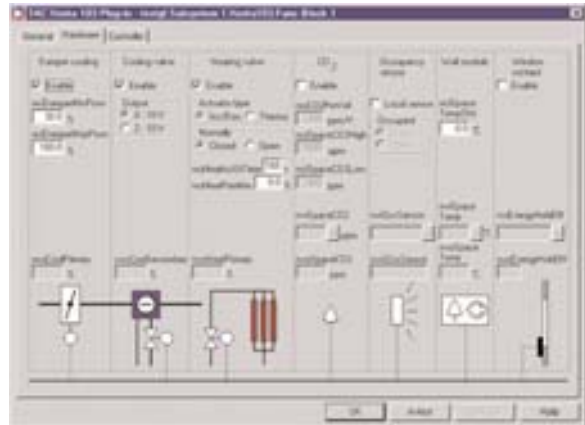


Engineering Tools

LonMaker® Integration Tool

High-performance network management tool for creating, installing and maintaining multi-vendor, open and interoperable LonWorks® networks. The LonMaker® is based on Echelon's LNS® network operating system, and combines high performance client-server architecture with the user-friendly Microsoft® Visio® user interface.

- Simple graphics programming
- Based on LNS operating system and Microsoft Visio 2002 Professional
- Supports remote access via LonWorks® or IP networks
- Connection of independent networks to one network
- Simple installation of LonMark® application specific devices
- Supports Plugins for TAC Xenta 100 series application specific controllers
- Supports simultaneous access by several users



LonMaker Integration Tool	9-008-0002-1
Credits for LonMaker Integration Tool (100 units)	9-008-0003-0

Loytec L-IP LonWorks Protocol Analyzers

The family of LOYTEC Protocol Analyzers (LPA) listens on twisted pair LonWorks networks or IP networks and displays all recorded packets on a PC screen.

Thanks to its long-time recording capability even intermittent faults can be detected and recorded.

The interpretation of an LNS® database allows displaying meaningful node names and network variable names. Together with L-IP internet Routers or NIC709-IP network interfaces the LPA software can record packets even from remote network channels.

For further specifications, see technical data sheet: www.loytec.com



LPA-PP	9-073-0030-0
LPA-USB	9-073-0032-0
LPA-IP	9-073-0046-0
LPA-SET-USB 1 LPA-USB and 1 LPA-IP	9-073-0047-0
LPA-SET-PP 1 LPA-PP and 1 LPA-IP	9-073-0048-0
LPA-NIPA Notebook power adaptor	9-073-0031-0



TAC Xenta® Freely programmable LonWorks® based controller family



TAC Xenta®

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TAC Xenta®

TAC Xenta 280

A compact, freely programmable controller which is LonMark® certified and has fixed inputs and outputs.

The controller is available in three different versions.

The TAC Xenta 281 (12 physical inputs/outputs), TAC Xenta 282

(16 physical inputs/outputs) and the TAC Xenta 283 (12 physical

inputs/outputs). The controllers can be easily programmed using the graphical programming tool TAC Menta.

Controllers can be used in a stand-alone system, where the TAC Xenta Operator Panel can be used for

displaying and operating the controller. Controllers can alternatively be used in larger LonWorks® networks



I/O configuration	TAC Xenta® 281	TAC Xenta® 282	TAC Xenta® 283
Digital Inputs	2	2	2
Thermistor Inputs	0	2	4
Universal Inputs	4	4	–
Analog Outputs	3	4	–
Digital Outputs, Relay	3	4	–
Digital Outputs, Triac	–	–	6

Operating voltage:	24 V AC/DC ±20%, 50/60 Hz
Power consumption:	max. 5 W
Operating temperature:	0 to +50°C
Data backup in event of power failure:	72 h RAM-Backup
Dimensions incl. base:	180 X 110 X 77.4 mm
Transceiver Protocol:	FTT-10, LonTalk®
Transmission rate:	78 kbits/s, TP/FT-10

External LonWorks data points

Input variable:	max. 15 Network variables
Output variable:	max. 30 Network variables

Interfaces

Serial connection:	RS232, RJ45
Operator Panel:	Modular jack, LonTalk Protocol

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 281	0-073-0030-0
TAC Xenta 282	0-073-0031-0
TAC Xenta 283	0-073-0032-0
TAC Xenta 280/300 Terminal part	0-073-0901-0

TAC Xenta®

TAC Xenta 300 Stand Alone

A compact, freely programmable controller which is LonMark certified and has 20 fixed inputs and outputs. The controller can be expanded to up to 40 inputs/outputs using two expansion modules. It does not include 'peer-to-peer' or BMS communication. The controller can be upgraded at any time to a network-capable version without changing the hardware. The TAC Xenta Operator Panel and a compatible terminal part are included in the stand-alone package.



I/O configuration	TAC Xenta® 301	TAC Xenta® 302
Digital Inputs	4	4
Thermistor Inputs	4	4
Universal Inputs	4	4
Digital Outputs	6	4
Analog Outputs	2	4

Operating voltage:	24 V AC/DC ±20%, 50/60 Hz
Power consumption:	max. 5 W
Operating temperature:	0 to +50°C
Data backup in event of power failure:	72 h RAM-Backup
Dimensions incl. base:	180 X 110 X 77.4 mm
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10
Interfaces	
Serial connection:	RS232, RJ45 for PC or modem (up to 9600 bit/s)
Operator Panel:	Modular jack, LonTalk Protocol

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 301 Stand Alone	0-073-0088-2
TAC Xenta 302 Stand Alone	0-073-0089-2
Upgrade TAC Xenta N/P	0-008-7298-1



TAC Xenta®

TAC Xenta 300 Network enabled

A compact, communication capable, freely programmable controller which is LonMark certified and has 20 fixed inputs and outputs. It can be expanded for up to 40 inputs/outputs using 2 expansion modules. Data can be directly accessed onsite using a TAC Xenta Operator Panel.



I/O configuration	TAC Xenta® 301	TAC Xenta® 301 XT	TAC Xenta® 302
Digital Inputs	4	4	4
Thermistor Inputs	4	4	4
Universal Inputs	4	4	4
Digital Outputs	6	6	4
Analog Outputs	2	2	4

Operating voltage:	24 V AC/DC ±20%, 50/60 Hz
Power consumption:	max. 5 W
Operating temperature:	
TAC Xenta 301/302	-20°C to +50°C
TAC Xenta 301 XT	-20°C to +70°C
Data backup in event of power failure:	72 h RAM-Backup
Dimensions incl. base:	180 X 110 X 77.4 mm
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10
External LonWorks data points	
Input variable:	max. 15 Network variables
Output variable:	max. 30 Network variables
Interfaces	
Serial connection:	RS232, RJ45 for PC or modem (up to 9600 bit/s)
Operator Panel:	Modular jack, LonTalk Protocol

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 301/N/P Network and PC-communication	0-073-0009-2
TAC Xenta 302/N/P Network and PC-communication	0-073-0011-2
TAC Xenta 301/N/P/XT Network and PC-communication	0-073-0010-0
TAC Xenta 280/300 Terminal part	0-073-0901-0

TAC Xenta®

TAC Xenta 401

TAC Xenta 401 is family of high-performance, freely programmable 'high-end' controller without its own physical inputs and outputs.

The TAC Xenta 401 family has two members: TAC Xenta 401 and TAC Xenta 401B.

A TAC Xenta 401 holds full HVAC functionality including control loops, curves, time control, alarm handling trend logs etc. The controller does not have any inputs or outputs. Instead, required I/O modules from the TAC Xenta 400 series are used.

Up to 10 I/O modules can be connected to the TAC Xenta 401. The controller is designed for cabinet mounting.

A TAC Xenta 401:B holds full HVAC functionality including control loops, curves, time control, alarm handling, trend logs etc.

The controller does not have any physical inputs or outputs and no TAC Xenta 400 I/O modules can be connected. This controller may serve as a data manager that can provide time scheduling, data logging, and other logical functions to less capable network nodes.



Operating voltage:	24 V AC/DC \pm 20%, 50/60 Hz
Power consumption:	max. 5 W
Operating temperature:	0 to +50°C
Data backup in event of power failure:	72 h RAM-Backup
Dimensions incl. base:	90 X 110 X 77.4 mm
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

External LonWorks data points

TAC Xenta 401

Input variable:	125
Output variable:	125

TAC Xenta 401 B

Input variable:	max 210
Output variable:	max 70
Total input variables + output variables:	250

Interfaces

Serial connection:	RS232, RJ45 for PC or modem (up to 9600 bit/s)
Operator Panel:	Modular jack, LonTalk Protocol

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 401	0-073-0101-2
TAC Xenta 401B	0-073-0103-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

TAC Xenta®

TAC Xenta 411/412 Digital Input Module

For monitoring and counting digital, dry contact signals.

The digital input module is only to be used in combination with the TAC Xenta 300/401 basic controllers. The module is available either with or without status LEDs. The terminal part is not part of the electronic unit and must be ordered separately.



Operating voltage:	24 V AC/DC $\pm 20\%$, 50/60 Hz
Power consumption:	max. 2 W
Operating temperature:	0 to +50°C
Dimensions incl. base:	90 X 110 X 77.4 mm
Digital inputs	
Quantity:	10
Duration of counting pulse:	min. 20 ms
Display:	Status LEDs, red or green adjustable via DIP switch (TAC Xenta 412)
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 411 without LEDs	0-073-0201-1
TAC Xenta 412 with LEDs	0-073-0203-1
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0



TAC Xenta 421/422 Digital Input/Output Module

For the combined monitoring and counting of digital, dry contact signals and for issuing switching commands with integrated relays. The digital input/output module is only to be used in combination with the TAC Xenta 300/401 basic controllers.

The module is available either with or without manual switches (status LEDs for inputs, manual switches for outputs). The terminal part is not part of the electronic unit and must be ordered separately.

Operating voltage:	24 V AC/DC $\pm 20\%$, 50/60 Hz
Power consumption:	max. 2 W
Operating temperature:	
TAC Xenta 421/422	0°C to +50°C
TAC Xenta 421XT/422XT	-20°C to +70°C
Dimensions incl. base:	90 X 110 X 77.4 mm
Digital inputs	
Quantity:	4
Duration of counting pulse:	min. 20 ms
Indication:	Status LEDs, red or green adjustable via DIP switch (TAC Xenta 422)
Digital outputs	
Quantity:	5
Switching capacity:	230V AC / 2A
Manual switch:	ON, AUTO, OFF (TAC Xenta 422)
Indication:	Status LEDs green (TAC Xenta 422)
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 421 without LEDs, without manual switches	0-073-0241-1
TAC Xenta 422 with LEDs, with manual switches	0-073-0243-1
TAC Xenta 421XT without LEDs, without manual switches	0-073-0242-0
TAC Xenta 422XT with LEDs, with manual switches	0-073-0244-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

TAC Xenta®

TAC Xenta 451/452 Analog Input/Output Module

For monitoring of digital, dry contact signals, for connecting analog active and passive sensor signals and for issuing analog actuating signals. The analog input/output module is only to be used in combination with the TAC Xenta 300/401 basic controllers.

The module is available either with or without manual switches (status LEDs for inputs, manual switches for outputs). The terminal part is not part of the electronic unit and must be ordered separately.



Operating voltage:	24 V AC/DC $\pm 20\%$, 50/60 Hz
Power consumption:	max. 2 W
Operating temperature:	0 to +50°C
Dimensions incl. base:	90 X 110 X 77.4 mm
Ambient temperature	
Operation:	0 to +50°C
Universal inputs	
Quantity:	4
As digital input:	min. 80 ms
Indication:	Status LEDs, red or green adjustable via DIP switch (TAC Xenta 452)
As Thermistor input:	NTC, 1800 ohm at 25°C (77°F)
As Voltage input:	0 – 10V
Thermistor inputs	
Quantity:	4, NTC, 1800 ohm at 25°C (77°F)
Analog outputs	
Quantity:	2
Output signal:	0 – 10V DC
Manual switch:	MAN, AUTO and Pot. 0 – 10V DC (TAC Xenta 452)
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 451 without LEDs, without manual switches	0-073-0281-1
TAC Xenta 452 with LEDs, with manual switches	0-073-0283-1
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

TAC Xenta®

TAC Xenta 471 Analog Input Module

For connecting analog, active, current and voltage signals.
The analog input module is only to be used in combination with
the TAC Xenta 300/401 basic controllers.



Operating voltage:	24 V AC/DC $\pm 20\%$, 50/60 Hz
Power consumption:	max. 10 W
Operating temperature:	0 to +50°C
Dimensions incl. base:	90 X 110 X 77.4 mm
Ambient temperature	
Operation:	0 to +50°C
Analog inputs	
Quantity:	8
Input signal	
Current Input:	0/4 – 20 mA, Input resistance 20 ohm
Internal power supply:	200 mA, max
Voltage Input	0/2 – 10V DC, Input resistance 100 kohm 0 – 1V DC
Max Input voltage:	24V DC
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 471	0-073-0291-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

TAC Xenta®

TAC Xenta 491/492 Analog Output Module

For issuing analog actuating signals. The analog output module is only to be used in combination with the TAC Xenta 300/401 basic controllers. The TAC Xenta 492 is equipped with manual override switches for the analog outputs.



Operating voltage:	24 V AC/DC $\pm 20\%$, 50/60 Hz
Power consumption:	max. 2 W
Operating temperature:	0 to +50°C
Dimensions incl. base:	90 X 110 X 77.4 mm
Ambient temperature	
Operation:	0 to +50°C
Analog outputs	
Quantity:	8
Output signal:	0 – 10V DC
Manual switch:	MAN, AUTO and Pot 0 – 10V DC (TAC Xenta 492)
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 491 without manual switches	0-073-0301-0
TAC Xenta 492 with manual switches	0-073-0303-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

TAC Xenta Operator Panel

For convenient local operation of TAC Xenta controllers. Input is via 6 control keys and information is displayed in the clear LCD display. The LCD display's background lighting can be switched off if required by changing the relevant parameter. The operator panel is connected to the controller with a plug-and-socket connection and supplied with power through the cable connector. It can also be directly connected to the LonWorks network.

The user can access all controllers connected to the network from one connection. The operator panel allows the current operating status to be checked and allows changes to be made to setpoints, time schedules etc. without connecting to a central system. In addition to allowing mobile deployment, the unit also supports the convenient plug-in installation to a TAC Xenta controller or can be mounted into the switchgear cabinet door. Modern and functional design. Compliant with TAC Xenta 100, TAC Xenta 280, TAC Xenta 300 and TAC Xenta 401.



Operating voltage:	24 V AC/DC from TAC Xenta or external
Power consumption:	max. 0.5 W
Dimensions incl. base:	114 X 96 X 34 mm
Ambient temperature	
Operation:	0 to +50°C
Display:	4 X 20 characters alpha-numerical, lighted
Type of protection:	IP 20 / IP 43
Transceiver Protocol:	FTT-10, LonTalk
Transmission rate:	78 kbits/s, TP/FT-10

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta Operator Panel	0-073-0907-1
TAC Xenta OP Mounting Kit	0-073-0904-0

TAC Xenta® Application Specific Controllers



TAC Xenta®

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TAC Xenta Application Specific Controllers

TAC Xenta Application Specific Controllers are individual room controllers based on LonWorks for controlling and optimising secondary heating/cooling systems. The TAC Xenta Application Specific Controllers are specifically designed for zone applications and include hardware and software. The controllers can be adapted to individual requirements using the flexible configuration settings. Parameters can be set onsite using the TAC Xenta Operator Panel or centrally using the TAC Vista® central system. Room sensors with setpoint adjuster make on demand adjustments possible. Unlike traditional zone controllers, intelligent LonWorks based devices can also be controlled directly via the LonWorks network.

The individual room controllers are integral components in a building's automation system and communicate via the LonWorks bus with the TAC Xenta controllers and the TAC Vista central system. Dynamic data exchange allows on demand optimisation of the primary systems while maintaining comfortable conditions.

To ensure optimal functionality, individual room controllers and/or parameters can be organised into groups so that several controllers can be set simultaneously. Groups also allow statistical evaluations and can therefore optimise the whole system. All TAC Xenta individual room controllers are LonMark® certified and allow completely open communication with other systems within a LonWorks network.

General technical data

Supply voltage:	24 V AC, -10% / +20% (in some cases 230 V AC)
Power consumption:	4 – 6 VA
Dimensions:	127 X 126 X 50mm

Approved environmental conditions

Storage:	-20 to + 50°C
Operation:	0 – 50°C
Humidity:	Max. 90% (non-condensing)
Mounting type:	35mm DIN rail EN50022 Wall mounting
Enclosure rating:	IP 30

Network communication

Transceiver/Protocol:	FTT-10, LonTalk®
Transmission rate:	78 kbit/s
Standards:	LonMark Interoperability Guidelines LonMark Functionality profile EN50081-1, EN50081-2, EN61010-1 FCC Part 15, UL 916

For further specifications, see technical data sheet. www.tac.se/docnet

General functional features

- Air-quality control with CO₂ measurement
- PI control with P-band and I-time setting
- Seven different types of operation
- Neutral zone between heating and cooling
- On demand override of the wall module by the occupancy sensor, window contact or bypass control switch
- Individual setpoint adjustment
- Zone sensors with the ability to connect to a TAC Xenta Operator Panel
- LonMark certified



TAC Xenta 101, Fan Coil Unit Controller

LonMark certified individual room controllers for fan coil systems with heating and/or cooling. The heating/cooling switch can be centrally controlled or controlled via the average temperature.

Incoming air and room temperature can be controlled in sequence.

Fans are controlled continuously, 3-speed or on-off depending on fan coil controller type. The controller can be operated in a stand-alone system or within a LonWorks network.

PI control with individual P-band and I-time settings for heating and cooling can be set. Values can be monitored and the parameter can be set centrally via the central system or remotely with the TAC Xenta Operator Panel.

PI control with individual P-band and I-time settings for heating and cooling can be set. Values can be monitored and the parameter can be set centrally via the central system or remotely with the TAC Xenta Operator Panel.

Functional features

- **Various applications** Single-step control with cooling, heating or changeover operation for cooling/heating. Two-step control with cooling and heating in sequence. Fan control via 3-step relays, on/off or speed control.
- **Slave function** Mode of operation and setpoint for several slave controllers are controlled by one master controller.
- **Setpoint adjustment** Via a wall module with setpoint adjuster or via a LonWorks network variable.
- **Seven types of operation** Comfort, stand-by, bypass, unoccupied, off, slave, 'fan only'.
- Several fan operation modes.
- **Configurable limit values** MIN and MAX limits the inlet air temperature.
- **Alarm monitoring** High or low room temperature, open window, error in the temperature sensor etc.
- Occupancy sensor, window contact and cool-down protection, CO₂ measurement input.

Operating voltage:	24 V AC or 230 V AC
Power consumption:	4 VA
Dimensions:	127 X 126 X 50 mm
Inputs and outputs	
Window contact:	Digital input
Occupancy sensor:	Digital input
Cooling valve :	3-point output
Heating valve :	3-point output
Fan:	3-step (250 V / 3 A) 101-VF, On-off (250V, 2A max) 101-1VF 0 – 10V DC (max 2mA) 101-VFC
Room temperature:	Thermistor input
Inlet air temperature:	Thermistor input
Wall module:	As selected

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 101-VF/24 Fan Coil Unit heating/cooling, Fan 3 steps.....	0-073-0505-0
TAC Xenta 101-VF/230 Fan Coil Unit heating/cooling, Fan 3 steps....	0-073-0507-0
TAC Xenta 101-1VF Fan Coil Unit single Valve, Fan on-off	0-073-0501-0
TAC Xenta 101-1VFC Fan Coil Unit single Valve, Fan speed control...	0-073-0502-0

TAC Xenta®



TAC Xenta 102, VAV Controller

LonMark certified individual room controllers for VAV applications (Variable Air Volume) connected to an external air flow controller (Belimo VAV Compact). The controller keeps a constant temperature in the zone by controlling the air flow and optional heating stages and fan in sequence. By using a carbon dioxide sensor, the air quality can be controlled in the zone. The controller can be operated stand-alone or within a LonWorks network. PI control with individual P-band and I-time setting for heating and cooling. Can be monitored and parameters can be set centrally via the central system or remotely with the TAC Xenta LonWorks Operator Panel.

Functional features

- **Various applications** Single-step control with setpoint calculation of an external air flow controller. Two-step setting with cooling and heating in sequence. Heating operation via an electric reheater or hot water.
- **Slave function** Mode of operation and setpoint for several slave controllers are controlled by one master controller.
- **Setpoint adjustment** Via a wall module with setpoint adjuster or via a LonWorks network variable.
- **Seven modes of operation** Comfort, standby, bypass, unoccupied, off, slave and purge mode.
- Air-quality based adjustments.
- **Configurable limit values** MIN and MAX limit of air flow.
- **Alarm monitoring** High or low room temperature, open window, error in the temperature sensor, etc.
- Occupancy sensor, window contact and cool-down protection, CO₂ measurement input.

Operating voltage:	24 V AC
Power consumption:	4 VA
Dimensions:	127 X 126 X 50 mm
Inputs and outputs	
Window contact:	Digital input
Occupancy sensor:	Digital input
Air dumper:	0 – 10 VDC
Heating valve:	2-point output (102-EF); 0 - 10 VDC (102-VF)
Room temperature:	Thermistor input
Air flow:	0 – 10 VDC
CO ₂ sensor:	0 – 10 VDC
Wall module:	As selected

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 102-B VAV Controller.....	0-073-0531-0
TAC Xenta 102-EF VAV Controller electrical reheat.....	0-073-0533-0
TAC Xenta 102-VF VAV Controller valve reheat	0-073-0535-0



TAC Xenta 102-ES, VAV Controller

LonMark certified individual room controller for VAV applications (Variable Air Volume flow) connected to an external air flow sensor (TAC GV). The controller is intended primarily for VAV cooling applications with one or two stages of reheating. The controller keeps a constant temperature in the zone by controlling the air flow and heating stages.

By using a carbon dioxide sensor, the air quality can be controlled in the zone. The controller can be operated stand-alone or within a LonWorks network. PI control with individual P-band and I-time setting for heating and cooling. Can be monitored and parameters can be set centrally via the central system or remotely with the TAC Xenta Operator Panel.

Functional features

- **Various applications** Single-step control via external air flow sensor and heating in sequence. Heating operation by modulating hot water radiator valve.
- **Slave function** Mode of operation and setpoint for several slave controllers are controlled by one master controller.
- **Setpoint adjustment** Via a wall module with setpoint adjuster or via a LonWorks network variable.
- **Seven modes of operation** Comfort, standby, bypass, unoccupied, off, slave and purge mode.
- Air-quality based adjustments.
- **Configurable limit values** MIN and MAX limit of air flow.
- **Alarm monitoring** High or low room temperature, open window, error in the temperature sensor, etc.
- Occupancy sensor, window contact and cool-down protection, CO₂ measurement input.

Operating voltage:	24 V AC
Power consumption:	4 VA
Dimensions:	127 X 126 X 50 mm

Inputs and outputs

Window contact:	Digital input
Occupancy sensor:	Digital input
Air dumper:	3-point output
Heating valve:	3-point output
Room temperature:	Thermistor input
Air flow sensor:	Tube connection
CO ₂ sensor:	0 – 10 VDC
Wall module:	As selected
Optional:	Temperature input

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 102-ES VAV Controller valve reheat 0-073-0537-0

TAC Xenta®

TAC Xenta 102-AX, VAV Controller with Onboard Actuator and Air flow Transducer

TAC Xenta 102-AX is a LonMark compliant individual room controller intended for VAV heating and cooling applications with one or two stages of reheating. The controller keeps a constant temperature in the zone by controlling the air flow and heating stages. By using a carbon dioxide sensor, the air quality can be controlled in the zone. TAC Xenta 102-AX is equipped with an integrated, static air velocity transducer and a motorised bidirectional actuator in a single package. The differential pressure air velocity transducer requires a minimum of maintenance. Thus it is also well suited to be placed in the zone return air duct.



Functional features

- **Various applications** Single-step VAV controller via internal air flow sensor and heating in sequence up to 3 stages.
- **Setpoint adjustment** Via STR 200, 202 or 250 wall modules or via a LonWorks network variable.
- **Seven modes of operation** Occupied, standby, bypass, unoccupied, morning warm up, purge mode and emergency pressurisation/depressurisation.
- Air-quality based adjustments.
- Fan control can be enabled/disabled either in parallel or serial mode.
- **Alarm monitoring** High or low room temperature, open window, error in the temperature sensor, etc.
- Occupancy sensor, CO₂ measurement input.

Operating voltage:	24 V AC
Power consumption:	8 VA
Dimensions:	197 X 159 X 63 mm
Inputs and outputs	
Occupancy sensor:	Digital input
Reheater:	Triac 24 V AC, voltage sourcing, max. 0.75 A
Torque:	6 Nm
Stroke:	0 – 95°
Timing:	2.4 sec/degree rotation (50 Hz)
Temperature:	Thermistor input 10 kohm NTC
Wall module:	As selected

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 102-AX VAV Controller 0-073-0540-0



TAC Xenta 103-A, Chilled Ceiling Controller

LonMark certified individual room controller for chilled ceiling applications. The controller keeps a constant temperature by modulating the cold water flow to the ceiling elements, the hot water flow to the radiators and the air flow through the damper. The controller can be operated on a stand-alone basis or within a LonWorks network.

PI control with individual P-band and I-time setting for heating and cooling. Can be monitored and parameters can be set centrally via the central system or remotely via the TAC Xenta Operator Panel. Air-quality based adjustments when a CO₂ sensor is connected.

Functional features

- **Various applications** Room temperature control via chilled ceiling in sequence with damper and radiator valve modulating the hot water. Choice of heating/cooling, only heating or only cooling (water and/or air).
- **Slave function** Mode of operation and setpoint for several slave controllers are controlled by one master controller.
- **Setpoint adjustment** Via a wall module with setpoint adjuster or via a LonWorks network variable.
- **Seven modes of operation** Comfort, standby, bypass, unoccupied, off, slave and purge mode.
- Air-quality based adjustments.
- Configurable limit values.
- **Alarm monitoring** High or low room temperature, open window, error in the temperature sensor etc.
- Occupancy sensor, window contact and cool-down protection, CO₂ measurement input.

Operating voltage:	24 V AC
Power consumption:	4 VA
Dimensions:	127 X 126 X 50 mm

Inputs and outputs

Window contact/hygrostat:	Digital input
Occupancy sensor:	Digital input
Cooling valve:	0 – 10 VDC
Air dumper:	0 – 10 VDC
Heating valve:	3-point triac output
Room temperature:	Thermistor input
CO ₂ sensor:	0 – 10 VDC
Wall module:	As selected

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 103-A Chilled Ceiling Controller..... 0-073-0561-0

TAC Xenta®

TAC Xenta 104-A, Roof Top Unit Controller

LonMark certified controller for small air handling systems and roof top units for heating, cooling and heat recovery. The room temperature is held at a constant temperature with sequential control of the heating, cooling and heat recovery functions. Inlet air and room air temperature can be set in cascade. The fan mode may be selected to operate continuous during the occupied mode, or cycle with heating or cooling demand from the zone. PI control action with individual P-band and I-time setting for heating and cooling. The controller can be operated on a stand-alone basis or within a LonWorks network. Can be monitored and parameters can be set centrally via the central system or remotely via the TAC Xenta Operator Panel.



Functional features

- **Various applications** Single-step control with cooling, heating or changeover operation for cooling/heating. Two-step control with sequential cooling and heating.
- Three-point control of the heating and cooling valves.
- Relay output for fan control.
- **Setpoint adjustment** Via a wall module with set point adjuster or via a LonWorks network variable.
- **Various modes of operation** Only heating, only cooling, only fan, cooling/heating(changeover), on, unoccupied, standby and bypass.
- Various types of fan operation.
- **Configurable limit values** MIN and MAX limit of the inlet air temperature.
- **Alarm monitoring** High or low room temperature, error in the temperature sensors, fan error, etc.

Operating voltage:	24 V AC
Power consumption:	4 VA
Dimensions:	126 X 122 X 50 mm

Inputs and outputs

Fan alarm/status:	2 Digital inputs
Cooling valve:	3-point output
Heating valve:	3-point output
Fan control:	Relay output 24 V / 2A
Room temperature:	Thermistor input
Inlet air temperature:	Thermistor input
Discharge/mixed temperature:	Thermistor input
Wall module:	As selected

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 104-A Roof Top Unit Controller 0-073-0591-0

TAC Xenta®



TAC Xenta 110-D, Dual Zone Controller

LonMark certified individual room controllers for cost-effective individual room solutions of climate control, lighting control, dimming and window control. Seven LonMark profiles are available for various applications. Configuring these as master or slave controllers, means that zone/group requirements can be generated and that they can interact with additional controllers in the TAC Xenta 100 family. The controller can be operated on a stand-alone basis or within a LonWorks network.

Can be monitored and parameters can be set centrally via the central system or remotely with the TAC Xenta Operator Panel.

Functional features

- Various applications.
- Single-step control with cooling or heating.
- Two-step control with cooling and heating in sequence, two-point control of the heating and cooling valves.
- Light control on/off, dimming and brightness control with lux sensor.
- Window control opening/closing and window contact, interlock of the window contacts with blind stop.
- Occupancy detection via digital input or LonWorks network variable (SNVT).
- Possibility of combining with TAC Xenta 101, TAC Xenta 102, TAC Xenta 103 and TAC Xenta 104 for a wide range of individual room applications.
- **Operation options** Via direct inputs for conventionally connected switches and setpoint adjuster or via LonWorks network variables from a room control panel or via the virtual control panel, TAC Vista ScreenMate, on the Intranet.

Operating voltage:	24 V or 230V AC
Power consumption:	4 – 80 VA
Dimensions:	126 X 122 X 50 mm

Inputs

Zone temperature:	1 x setpoint adjuster 10 kohm
Bypass, light, occupancy:	2 x Thermistor NTC, 1800 ohm at 25°C
	3 x Digital

Outputs

Dimming:	1 x 0 – 10 V, max 2 mA
Light control:	4 x relay, 250 V 3 A(resistive), 250W (HF Lamps)
Heating/cooling valve:	4 x triac for thermal actuators, 110-D/24 max 0.8 A 110-D/115, 230 max 0.5 A

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 110-D/24 Dual Zone Controller	0-073-0601-0
TAC Xenta 110-D/230 Dual Zone Controller	0-073-0603-0



Wall Modules STR 100 – 107

The STR is a series of wall modules optimised for public facilities such as office buildings, hotels and hospitals.

STR wall modules are mounted directly onto the wall or onto a junction box. The STR 101 through STR 107 are equipped with a modular jack (RJ-10) that allows the wall module to be connected to the portable TAC Xenta OP (Operator Panel). The STR101 through STR107 can be used together with the TAC Xenta 100, 280, 300, and 400 series of controllers.

The wall modules are equipped differently; the STR 100 is the basic model, while the STR 106, 107 are fully equipped. See table below.

	Temp Sensor	Mode Indicator	Setpoint Offset	Bypass Button	Fan Speed Control
STR100	●				
STR101	●	●			
STR102	●	●	●		
STR104	●	●	●	●	
STR106	●	●	●	●	●
STR107	●	●	●	●	●

Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	TAC-thermistor, 1800 ohm at 25°C
Accuracy:	±0,35°C
SP-Potentiometer:	10 kohm
Fan switch:	3-step, 30 VAC at max 0,75 A
Wiring:	Twisted pair, unshielded
Enclosure rating:	IP 20 / NEMA1
TAC Xenta OP contact:	Modular plug 4/4

For further specifications, see technical data sheet. www.tac.se/docnet

STR100	0-046-0010-0
STR100-W (White)	0-046-0011-0
STR101	0-046-0020-0
STR102	0-046-0030-0
STR104	0-046-0040-0
STR106	0-046-0050-0
STR107	0-046-0060-0



Wall Module STR 150

The STR 150 is a wall module optimised for public facilities such as office buildings, hotels and hospitals. It's attractive appearance and well-designed interface make the wall module suitable for any contemporary building. The wall module is easy to operate and install. STR wall modules are mounted directly onto the wall or onto a junction box. The STR 150 is equipped with an LCD that displays the different functions of the module. The STR 150 is designed to be used together with:

TAC Xenta 101-VF, 102-ES, 103-A and 104-A with SW-version 1.2 or later.

Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	Thermistor, 10 kohm at 25°C
Accuracy:	±0,35°C
SP-Potentiometer:	10 kohm
Fan switch:	3-step, 30 VAC at max 0,75 A
Dimensions:	120 X 80 X 28 mm
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR150 0-046-0280-0

Wall Modules STR 200, 202

The STR is a series of wall modules optimised for public facilities such as office buildings, hotels and hospitals. Their attractive appearance and well-designed interface make them suitable for any contemporary building. They are easy to operate and install. STR wall modules are mounted directly onto the wall or onto a junction box. The STR200 and STR202 are equipped with a 3-pole stereo-jack to allow connection to the M/STAT unit. The STR200 is equipped with a temperature sensor, while the STR202 also features a bypass button and a setpoint offset wheel.

Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	10 kohm, thermistor
Accuracy:	±0,30°C
SP-Potentiometer:	10 kohm
Dimensions:	120 X 80 X 28 mm
M/STAT connection:	3-pole stereo jack
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR200 0-046-0300-0
 STR200-W 0-046-0301-0
 STR202 0-046-0320-0



Wall Module STR 250

The STR 250 is a wall module optimised for public facilities such as office buildings, hotels and hospitals. Their attractive appearance and well-designed interface make them suitable for any contemporary building. They are easy to operate and install. STR wall modules are mounted directly onto the wall or onto a junction box. The STR200 and STR202 are equipped with a 3-pole stereo-jack to allow connection to the M/STAT unit. The plug-in concept makes wiring quick and easy. The STR 250 replaces the I/STAT LCD with regard to major functionality such as indoor and outdoor temperature indication, setpoint adjustment, bypass mode and fan speed commands.

Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	10 kohm, thermistor
Accuracy:	±0,6°C (1°F)
Power Requirements:	12 V DC, supplied from controller
Data communication:	Serial Proprietary
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR250 0-046-0330-0

Wall Module TAC STR 350

The STR350/351 uses LonWorks communication to display and control the room temperature and fan speed. Optionally, one lamp group and/or one sunblind group can be controlled. The STR350/351 can also be used in TAC Vista Classic configurations, that is, without the need for a separate binding tool. Both models, STR350 and STR351, have an extra analog input that can be connected to a CO₂-, relative humidity- or occupancy sensor. The STR350/351 is equipped with an LCD display (STR351 with backlight) that displays the different functions of the module. STR wall modules are mounted directly on the wall or onto a backbox.



Operation temperature:	±0°C to +50°C (32 to 120°F) max 90% RH
Temperature range	
Detection and display:	5 to +45°C (41 to 113°F)
Accuracy:	±0.6°C (1°F)
Setpoint Value	
Range:	10 to +35°C (50 to 95°F)
Span:	±0°C to ±10°C (±0 to ±20°F)
Auxiliary analog input for either CO ₂ - or RH-level	
Range:	0-10V(default 0-2000 ppm)
Accuracy:	±2% of full scale
Power requirements:	24 VAC ±20%, 50/60 Hz
Data communication:	LonWorks, TP/FT-10
Enclosure rating:	IP20/NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR350 0-046-0500-0
 STR351 with backlight 0-046-0510-0

TAC Xenta Operator Panel

For convenient local operation of the TAC Xenta controller and individual room controllers. Input is via 6 control keys. Information is shown on a clear LCD display. The background lighting of the LCD can be switched off by changing the relevant parameter. The Operator Panel is connected to the individual room controller via a wall module and supplied with power via a connecting cable. Alternatively, a direct connection to the LonWorks network is also possible.



The user has access to all TAC Xenta units connected to the network via one TAC Xenta OP. The Operator Panel allows the current operating status to be checked and changes to be made to setpoints, limit values, parameters etc., without connecting to a central system. The modern and functional design supports a variety of mounting options allowing mobile deployment.

Operating voltage:	24 V AC/DC of the TAC Xenta or extern
Power consumption:	max. 0,5 W
Dimensions:	144 X 96 X 34 mm
Display:	4 X 20 characters alpha-numerical, lighted
Enclosure rating:	IP 20 / IP 43
Network communication:	FTT-10, LonWorks

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta Operator Panel 0-073-0907-1

Network Infrastructure Products



Network Infrastructure Products

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Network Infrastructure Products

TAC Xenta® 511 Webserver

The TAC Xenta® 511 is a web-based presentation system for LonWorks® networks. Using a standard web browser, the operator can easily view and control the devices in the LonWorks network via the Internet or a local intranet. One TAC Xenta 511 can present a small LonWorks network or be one of several local presentation devices in a larger network.

The TAC Xenta 511 can also be used as an LTA, LonTalk® adapter between TAC Vista® and the LonWorks network.



Functional features

- Multiple access levels
- Security functions for TCP/IP firewalls
- Alarm routines for sending e-mails that can be converted to SMS and reports
- Dynamic color graphics (automatic updating)
- Display of values in diagrams
- Ability to change values/conditions (e.g. setpoints)
- Ready-made menus, help functions and links to web pages
- Storage of customer-specific documentation and web pages

Supports SNVT (Standard Network Variable Types) in accordance with LonMark® and TAC network variables. Changes are immediately visible to all users. TAC XBuilder is used to create web pages, installation and initial operation of the TAC Xenta 511.

Supply voltage:	24 V AC \pm 20%, 50 / 60 Hz
Power consumption:	max. 5 W
Real-time clock:	
Data backup in event of power failure:	72 h
Dimensions incl. base:	90 X 110 X 77.4 mm
Communication	
Modem:	9.6 – 57.6 kbps, RS232A, RJ45, 8-p
PC configuration:	RS232B, RJ10, 4-p
LonWorks:	FTT-10, 78 kbps screw terminal
Ethernet:	TCP/IP, 10Base-T, RJ45
Memory	
Internal memory:	8 MB
External memory:	expandable with MMC (4 – 128 MB, MMC card)

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 511 Webserver	0-073-0811-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

Network Infrastructure Products



TAC Xenta 527

The TAC Xenta 527 is a cost effective gateway for Web enabling an existing I/NET installation.

It lets you build a seamlessly integrated system with a single operator interface with full functionality at the network level.

The TAC Xenta 527 supports a protocol to allow it to connect to a net plus Router already installed onto an existing I/NET system.

If your I/NET system does not have a Net Plus Router then one must be included to allow this product to operate. The products involved in this release are:

The TAC Xenta 527 allows you to receive alarms and messages, acknowledge alarms, perform basic point control, including DDC set points and modify I/NET time schedules and trends, all via a web-based graphical interface.

TAC Xenta 527 brings many different sales opportunities:

- **Retrofit and Modernization projects:** The TAC Xenta 527 makes it possible to introduce low cost client technology to existing I/NET customers and provide a simple access to LON Works Networks expansion.
- **Integration of TAC Vista, Xenta, Menta and I/NET systems:** As the TAC Xenta 527 retains it's ability to communicate with LON Works networks as well as with I/NET networks, this device can be used to provide a common Web based presentation system for combined I/NET and Xenta network based systems.

Configuration is performed using the TAC XBuilder programming tool.

Operating voltage:	24 V AC \pm 20%, 50 / 60 Hz
Power consumption:	max. 5 W
Real-time clock:	Accuracy at 25 °C \pm 12 minutes per year
Data backup in event of power failure:	72 h RAM backup
Dimensions incl. base:	90 X 110 X 77.4 mm

Communication

A: RS232	9600 bps, RS232A, RJ45, 8-p
A: RS485	not supported*
B: RS485	RJ10, 4-p
C: RS485	not supported*
LonWorks	TP/FT-10, terminal block
Ethernet	TCP/IP, 10Base-T, RJ45

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 527 v1.00.....	0-073-0820-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0
TAC XBuilder v1.30	0-008-8034-0



Network Infrastructure Products

TAC Xenta 901 Serial LonTalk Adapter

The TAC Xenta 901 is a serial LonTalk adapter, designed to let TAC Vista reach a LonWorks network via a dial-up line. When the modem line between TAC Xenta 901 and TAC Vista has been established, communication proceeds as if TAC Vista had been connected directly to the LonWorks network.

The dial-up can either be initiated by TAC Vista, or by the TAC Xenta 901 unit. TAC Xenta 901 has functions to reduce the connection cost, like delaying a dial-up in order to collect more events, for example alarms, so that several events can be reported at the same call. It is also possible to specify dial-up to occur at a certain time of day, when the phone rates are lower.



Functional features

- Works as a dialed up LonTalk adapter
- Line blocking at a preset number of failed dial-ups
- Functions for reducing dial-up costs
- Real time clock
- Daylight saving for Europe, USA / Canada
- All configuration data like telephone numbers are stored in a nonvolatile memory

Supports SNVT (Standard Network Variable Types) in accordance with LonMark and TAC network variables.

Supply voltage:	24 V AC \pm 20%, 50 / 60 Hz or 19-40 V DC
Power consumption:	max. 5 W
Real-time clock:	Accuracy at 25 °C \pm 12 minutes per year
Data backup in event of power failure:	72 h
Dimensions incl. base:	90 X 110 X 77.4 mm

Communication

Modem:	9600 bps, RS232A, RJ45, 8-p
Network	LonWorks, FTT-10, screw terminal
TAC Xenta OP:	LonWorks, FTT-10, modular jack

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 901	0-073-0915-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

Network Infrastructure Products



TAC Xenta 911 Ethernet Communication Device

The TAC Xenta 911 Communication device can be configured in one of two ways:

- As a LonTalk adapter between TAC Vista and a LonWorks network
- As an IP modem, working as a direct replacement for a telephone modem, with dial-up functionality over the computer network

In the latter case, TAC Xenta 911 is intended for use with most TAC units supporting dial-up. See data sheet for TAC Xenta 911. The IP address of the “dialed-up” unit will then replace the telephone number. This makes it very easy to save money by eliminating telephone line costs. The fast dial-up time, typically less than two seconds, provides the feeling of a direct connected network.

The TAC Xenta 911 is quick to install and is easily maintained, using a web browser on the TCP/IP network. Its default values are set for TAC Xenta connection and is preconfigured for most TAC products.

The TAC Xenta 911 contains HTML pages providing comprehensive on-line help.

Functional features

- Works as LonTalk adapter over IP between TAC Vista and a LonWorks network
- Supports TAC Xenta controllers and most TAC legacy products
- Configurable over IP network with standard web browser
- Preconfigured for most TAC products
- Real time clock
- All configuration data like telephone numbers are stored in a nonvolatile memory
- Remote serial Port over a TCP/IP Network

Supports SNVT (Standard Network Variable Types) in accordance with LonMark and TAC network variables.

Supply voltage:	24 V AC \pm 20%, 50 / 60 Hz or 19-40 V DC
Power consumption:	max. 5 W
Real-time clock:	Accuracy at 25 °C \pm 12 minutes per year
Data backup in event of power failure:	72 h
Dimensions incl. base:	90 X 110 X 77.4 mm
Communication	
Modem:	2400 bps - 57,6 kbps, RS232A, RJ45, 8-p (port A)
PC, configuration	RS232A, RJ45, 4-p (port B)
Network	LonWorks, FTT-10, screw terminal
Ethernet:	TCP/IP, 10base-T, RJ45

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta 911	0-073-0831-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0



Network Infrastructure Products

The TAC Xenta 913 High Level Interface

The TAC Xenta 913 Interfaces provide a fast, reliable method of converting the data from one format to another.

The TAC Xenta 913 interface bridges the gap between the two formats allowing legacy hardware to coexist with the TAC systems.

It gives you the freedom to migrate to open systems and to upgrade your site without having to fully retrofit older equipment.



Many Options

TAC offers a wide variety of interface options. These interfaces enable multiple vendor systems such as chillers, lifts, fire alarms and energy metering to all be connected to one front end Building Management System.

The TAC Xenta 913 supports many common protocols like TCP/IP, LonTalk®, Modbus, BACnet® and many other legacy and proprietary systems.

For more than a decade, TAC has been providing hundreds of interface solutions for installations all over the world.

Some of the systems that can be interfaced to include

- Chillers
- Fire Panels
- Boilers
- Generators
- Power Meters
- Programmable Logic Controllers
- Lighting Systems
- Package Air-conditioning
- Elevators

Features

- Secure interface for configuration with username and password logon.
- 8Mbytes on board memory expandable to 128Mbytes.
- Powerful industrial grade microprocessor and real-time operating system.
- Easy to use windows configuration tools customised to each interface.
- Built-in support for diagnostic and data logging operations.
- Optional web interface.
- Configurable via 232 serial or Ethernet.
- Supports binding and polling of LON SNVTs.

TAC Xenta 913	0-073-0831-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0



Network Infrastructure Products

Loytec L-IP

The L-IP is a LonWorks twisted pair to the Ethernet router.

The L-IP fills the gap between twisted pair LonWorks networks and Ip networks. it can tunnel LonWorks packets back and forth through an arbitrary IP based network, such as a LAN, an Intranet, or even the Internet. The L-IP connects to the IP network via an Ethernet channel. Available twisted pair transceivers include FT-10 and TP-1250.

For further specifications, see technical data sheet: www.loytec.com

L-IP LIP-1ECT	1 Ethernet port, 1 TP/XF-1250 port	9-073-0044-0
L-IP LIP-3ECT	1 Ethernet port, 1 FTT-10 port	9-073-0045-0

Loytec L-Switch

The L-Switch is the solution to interconnected multiple twisted pair LonWorks channels. It provides up to five ports and routes packets between these ports.

In spite of its small size the L-Switch router provides best class performance and flexibility in use.

in order to provide the optimal router configuration the L-Switch supports 2 to 5 ports as well as the 2 operating modes 'Smart Switch Mode' and 'Configured Router Mode'.

For further specifications, see technical data sheet: www.loytec.com

L-Switch LS-33300C	3 FTT-10 ports	9-073-0038-0
L-Switch LS-13300C	1 TP/XF-1250 port, 2 FTT-10 ports	9-073-0039-0
L-Switch LS-13333C	1 TP/XF-1250 port, 4 FTT-10 ports	9-073-0040-0
L-Switch LS-11333C	2 TP/XF-1250 ports, 3 FTT-10 ports.....	9-073-0041-0
L-Switch LS-33C	2 FTT-10 ports	9-073-0049-0
L-Switch LS-13C	1 TP/XF-1250 port, 1 FTT-10 port.....	9-073-0050-0

PC LonTalk Adapter

PC interface card for connecting the LonWorks network to a TAC Vista central system or to a network management tool.

- Interface between LonWorks and PC
- Half-length card for ISA or PCI slots
- Complies with LonMark Interoperability Guidelines
- Reliable connection

PCLTA20-FTT-10	PCI	78 kBit/s	9-073-0010-0
PCLTA20-TP/XF1250	PCI	1250 kBit/s	9-073-0011-0
PCLTA10-FTT-10	ISA	78 kBit/s	9-073-0003-0
PCLTA10-TP/XF1250	ISA	1250 kBit/s	9-073-0004-0



Network Infrastructure Products

TAC Xenta LonWorks Repeater FTT-10, 24 V

Passive signal amplifier for extending the maximum bus length (twisted pair) and for setting up networks with more than 64 nodes.

- Passive signal amplification
- Completely network transparent
- Modular device design via TAC Xenta 400 enclosure
- Din rail or wall mounting



Operating voltage:	24 V AC \pm 20%, 50 / 60 Hz
Power consumption:	< 1,5 VA
Approv. ambient temp:	0 - 50 °C
Max. no. of nodes:	64 (FTT-10 transceiver)
Interface:	TP/FT-10, FTT-10, screw terminal
Dimensions incl. base:	90 X 110 X 77.4 mm
Enclosure rating:	IP 20

For further specifications, see technical data sheet. www.tac.se/docnet

TAC Xenta FTT-Repeater 24V	0-073-0912-0
TAC Xenta 4xx / 5xx / 9xx Terminal part	0-073-0902-0

Termination

Terminating resistor for TP/FT-10 and TP/XF-1250 LonWorks network segments.

Termination TP/FT-10	0-073-0905-0
Termination TP/XF-1250	9-073-0020-0

SysMan SMS

The SysMan GSM is a solution for sending TAC Vista alarms as SMS text messages.

The SysManSMS server solution works on all GSM networks and is not dependant on any modem pools or the Internet but sends SMS messages directly onto the GSM network.

The packages contain the necessary software and hardware to send alarms from TAC Vista as SMS messages. The software retrieves alarms from TAC Vista and transmits it to the GSM network using a Nokia 30 GSM Terminal. The Nokia 30 GSM Terminal is connected to the computer running TAC Vista Server using a serial cable that is included in the packages.

The standard edition allows the system to send SMS messages to GSM devices based on the alarm files that are generated by TAC Vista. The enterprise edition also allows the system to receive SMS messages and perform various tasks dependent on the content of the SMS messages.

More information is available in the documentation available on www.sysman.no/tac.htm.

Note that to make TAC Vista understand commands sent to it, extra development is required. Both software editions run as a Windows background service and should run on the computers where TAC Vista Server is running.

SysMan SMS Standard	9-008-0009-0
SysMan SMS Enterprise	9-008-0010-0
SysMan SMS Standard upgrade to Enterprise.....	9-008-0011-0

A Nokia 30 GSM terminal and a SIM card is also required.



Network Infrastructure Products

PCMCIA LonTalk Adapter

Interface card for connecting the LonWorks network to a laptop using the PCMCIA interface.

- Interface between LonWorks and PC (laptop)
- Type II PC card (PCMCIA)
- Complies with LonMark Interoperability Guidelines
- Reliable connection

Can also be used for TP/XF-1250 networks by a POD TP/XF-1250 adapter

PCC10 FTT-10	78 kBit/s	9-073-0005-0
POD TP/XF-1250	1250 kBit/s	9-073-0019-0
PCC10 Cable set		9-073-0006-0

Serial LonTalk Adapter

External LonWorks interface for serial connection between equipment such as PCs and modems and the LonWorks network. Can be wall mounted.

- Interface between LonWorks and RS-232 interface
- External device, no plug-in slot in PC necessary

Power supply:	9 - 30 V AC/DC
Power consumption:	250 mA
Dimensions:	138 X 101 X 34 mm
Interfaces:	9-pole DB-9, EIA-232
Network:	LonWorks, TP/FT-10, FTT-10

SLTA-10 FTT-10	9-073-0012-0
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Valves Summary



Valve Summary

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Valve Summary

Summary



V241



M310



V311



V211



V232



V341

2-way plug valves

V241	DN 15-DN 50, Bronze	F-20-50
V211T	DN 15-DN 50, Nodular iron	F-20-55
V212T	DN 25-DN 50, Nodular iron	F-20-57
V211	DN 15-DN 50, Nodular iron	F-20-60
V212	DN 25-DN 50, Nodular iron	F-20-63
V222	DN 65-DN 150, Cast iron	F-20-02
V231	DN 15-DN 50, Nodular iron	F-20-13
V232	DN 25-DN 50, Nodular iron	F-20-15
V292	DN 65-DN 150, Nodular iron	F-20-19

3-way plug valves

V341	DN 15-DN 50, Bronze	F-30-50
V311T	DN 15-DN 50, Nodular iron	F-30-55
V311	DN 15-DN 50, Nodular iron	F-30-60
V321T	DN 65-DN 150, Cast iron	F-30-55

Zone valves

VZ22/32/42	DN 15-DN 20, Bronze	F-50-20
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Butterfly valves

VTRV-SDN	50-DN 200, Cast iron	F-20-26
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3-way rotary disc/shoe valve

VTRE	DN 20-10, Flanged, Cast iron	F-30-45
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Valve Summary

2-Way Valves

Valve designation	Heating/Cooling Air-handling					Heating, Air-handling District heating				Heating/ Cooling
	V211	V211T	V212	V212T	V222	V241	V231	V232	V292	
Valve type	Plug		Plug, pressure bal.	Plug, pressure bal.	Plug, pressure bal.	Plug	Plug	Plug, pressure bal.	Plug, pressure bal.	Butterfly
Pressure rating	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 25 (362 psi)	PN 25 (362 psi)	PN 25 (362 psi)	PN 16 (232 psi)
Max. temp.	120°C (248°F)	120°C (248°F)	120°C (248°F)	120°C (248°F)	150°C (302°F)	150°C (302°F)	150°C (302°F)	150°C (302°F)	150°C (302°F)	110°C ? (230°F)
Min. temp.	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-10°C ²⁾ (14°F)	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-10°C ²⁾ (14°F)	-10°C ²⁾ (14°F)
Characteristic	EQM ³⁾	EQM ³⁾	EQM ³⁾	EQM ³⁾	EQ %	EQM ³⁾	EQM ³⁾	EQM ³⁾	EQ %	-
Rangeability ¹⁾	>50	>50	>50	>50	50	>50 ⁶⁾ >100 ⁷⁾	>50 ⁶⁾ >200 ⁷⁾	> 200	50	-
Max. leakage of KV (Cv)	tight	tight	tight	tight	0.05%	0.02%	0.02%	0.02%	0.05%	0.0001%
Max. diff. press. ⁴⁾ , valve 100% open	400 kPa (58 psi)	400 kPa (58 psi)	400 kPa (58 psi)	400 kPa (58 psi)	800 kPa (116 psi)	600 kPa (87 psi)	800 kPa (116 psi)	800 kPa (116 psi)	1600 kPa (232 psi)	400 kPa (58 psi)
Material body plug/disc seat	Nodular iron Bronze Bronze	Nodular iron Bronze Bronze	Nodular iron Bronze Bronze	Nodular iron Bronze Bronze	Cast iron Stainl. steel Stainl. steel	Bronze Stainl. steel Stainl. steel	Nodular iron Stainl. steel Stainl. steel	Nodular iron Stainl. steel Stainl. steel	Nodular iron Stainl. steel Stainl. steel	Cast iron Stainl. steel Ethylene- propylene rubber
Connections	Flanged	Int. thread	Flanged	Int. thread	Flanged	Ext. thread	Flanged	Flanged	Flanged	Between flanges
Size DN	15-50 (1/2"-2")	15-50 (1/2"-2")	25-50 (1"-2")	25-50 (1"-2")	65-150 (2 1/2"-6")	15-50 (1/2"-2")	15-50 (1/2"-2")	25-50 (1"-2")	65-150 (2 1/2"-6")	25-200 (1"-8")
Dimensions										
KV (CV) values 5)										
DN 15 (1/2")						0.25 (0.29) 0.40 (0.47) 0.63 (0.74) 1.0 (1.2) 1.6 (1.9) 2.5 (2.9) 4.0 (4.7)	0.25 (0.29) 0.40 (0.47) 0.63 (0.74) 1.0 (1.2) 1.6 (1.9) 2.5 (2.9) 4.0 (4.7)			
DN 20 (3/4")	6.3 (7.4)	6.3 (7.4)				6.3 (7.4)	6.3 (7.4)			
DN 25 (1")	10 (11.7)	10 (11.7)	10 (11.7)	10 (11.7)		10 (11.7)	10 (11.7)	10 (11.7)		36 (42)
DN 32 (1 1/4")	16 (18.7)	16 (18.7)	16 (18.7)	16 (18.7)		16 (18.7)	16 (18.7)	16 (18.7)		40 (47)
DN 40 (1 1/2")	25 (29.3)	25 (29.3)	25 (29.3)	25 (29.3)		25 (29.3)	25 (29.3)	25 (29.3)		50 (59)
DN 50 (2")	38 (44.5)	38 (44.5)	38 (44.5)	38 (44.5)		38 (44.5)	38 (44.5)	38 (44.5)		85 (100)
DN 65 (2 1/2")					63 (73.7)				63 (73.7)	215 (252)
DN 80 (3")					100 (117)				100 (117)	420 (491)
DN 100 (4")					160 (187)				160 (187)	800 (936)
DN 125 (5")					250 (293)				250 (293)	1010 (1182)
DN 150 (6")					400 (468)				400 (468)	2100 (2457)
DN 200 (8")										4000 (4680)

¹⁾ The rangeability is the ratio of Kv to Kv min (Cv to Cv min).

²⁾ Stem heater required.

³⁾ EQM: Equal percentage modified.

⁴⁾ For differential pressure across closed valve, see combination valve/actuator page 8.

⁵⁾ Kv is the flow through the valve in m³/h at the specified lift and a pressure drop of 100 kPa across the valve.

⁶⁾ DN 15 (1/2").

⁷⁾ DN 20-50 (3/4-2").

Valve Summary

3-Way Valves

Valve designation	Cooling Heating Air-handling					
	V341	V311	V311T	V321 DN 65-100	DN 125-150	VTRE
Valve type	Plug	Plug	Plug	Plug	Plug	Rotating disc
Pressure rating	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)	PN 6 (87 psi)
Max. temperature	150°C (302°F)	120°C (248°F)	120°C (248°F)	130°C (266°F)	150°C (302°F)	110°C (230°F)
Min. temperature	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-20°C ²⁾ (-4°F)	-10°C ²⁾ (14°F)	-10°C ²⁾ (14°F)	+5°C (41°F)
Flow characteristic	EQM-Compl. ³⁾	EQM-Compl. ³⁾	EQM-Compl. ³⁾	EQ % - Lin	Lin -Lin	-
Rangeability ¹⁾	>50 ⁶⁾ >100 ⁷⁾	>50	>50	30	30	-
Max.leakage of Kv (Cv)	A-AB B-AB	0.02% <0.05%	tight tight	tight tight	<0.05% <0.05%	1.0% 0.05%
Max. diff. pressure ⁴⁾ , valve 100% open	600 kPa (87 psi)	400 kPa (58 psi)	400 kPa (58 psi)	400 kPa (58 psi)	400 kPa (58 psi)	150 kPa (22 psi)
Material body plug/disc seat	Bronze . steel Stainl. steel	Nodular iron Bronze	Nodular iron Bronze	Cast iron Bronze Stainl. steel	Nodular iron Stainl. steel Stainl. steel	Cast iron Brass Cast iron
Connections	. thread	Flanged	thread	Flanged	Flanged	Flanged
Valve function	Mixing	Mixing	Mixing	Mixing	Mixing	Mixing
Size DN	15-50 (1/2"-2")	15-50 (1/2"-2")	15-50 (1/2"-2")	65-100 (2 1/2"-4")	125-150 (5"-6")	65-150 (2 1/2"-6")
Dimensions	KV (CV) values⁵⁾					
DN 15 (1/2")	1.6 (1.9) 2.5 (2.9) 4.0 (4.7)	1.6 (1.9) 2.5 (2.9) 4.0 (4.7)	1.6 (1.9) 2.5 (2.9) 4.0 (4.7)			
DN 20 (3/4") DN 25 (1")	6.3 (7.4) 10 (11.7)	6.3 (7.4) 10 (11.7)	6.3 (7.4) 10 (11.7)			12 (14.0) 18 (21.0)
DN 32 (1 1/4") DN 40 (1 1/2")	16 (18.7) 25 (29.3)	16 (18.7) 25 (29.3)	16 (18.7) 25 (29.3)			28 (32.8) 44 (51.5)
DN 50 (2")	38 (44.5)	38 (44.5)	38 (44.5)			60 (70.2)
DN 65 (2 1/2") DN 80 (3") DN 100 (4")				63 (74) 100 (117) 160 (187)		90 (105) 150 (175) 225 (263)
DN 125 (5") DN 150 (6")					250 (293) 400 (468) ??	280 (328) 400 (468)

¹⁾ The rangeability is the ratio of Kv to Kv min (Cv to Cv min).

²⁾ Stem heater required.

³⁾ EQM: Equal percentage modified.

⁴⁾ For differential pressure across closed valve, see combination valve/actuator page 9.

⁵⁾ Kv is the flow through the valve in m³/h at the specified lift and a pressure drop of 100 kPa across the valve.

⁶⁾ DN 15 (").

⁷⁾ DN 20-50 (f-2").

Valve Summary

Zone Valves

Valve designation	Cooling Heating		
	VZ22	VZ32	VZ42
Valve type	Plug	Plug	Plug
Stroke	6.5 mm (0.26")	6.5 mm (0.26")	6.5 mm (0.26")
Pressure rating	PN 16 (232 psi)	PN 16 (232 psi)	PN 16 (232 psi)
Max. temperature	120 °C (248°F)	120°C (248°F)	120°C (248°F)
Min. temperature	2°C (35°F)	2°C (35°F)	2°C (35°F)
Flow characteristic	EQ %	EQ %	EQ %
A-AB bypass B-AB	-	Lin	Lin
Rangeability 1)	50	-	-
controlled port	-	50	50
Max.leakage of Kv (Cv)	0.02% -	0.02% 0.02%	0.02% 0.02%
A-AB B-AB			
Material	body Stainl. steel	Brass Stainl. steel	Brass Stainl. steel
stem	Brass	Brass	Brass
plug			
Connections	Ext. thread	Ext. thread	Ext. thread
Size DN	15-20 (¹ / ₂ "- ³ / ₄ "	15-20 (¹ / ₂ "- ³ / ₄ "	15-20 (¹ / ₂ "- ³ / ₄ "
Dimensions	KV (CV) values 2)		
DN 15 (¹ / ₂ "	0.16 (0.19)	0.25 (0.29)	0.25 (0.29)
DN 15 (¹ / ₂ "	0.25 (0.29)	0.40 (0.47)	0.40 (0.47)
DN 15 (¹ / ₂ "	0.40 (0.47)	0.63 (0.74)	0.63 (0.74)
DN 15 (¹ / ₂ "	0.63 (0.74)	1.00 (1.17)	1.00 (1.17)
DN 15 (¹ / ₂ "	1.00 (1.17)	1.6 (1.9)	1.6 (1.9)
DN 15 (¹ / ₂ "	1.6 (1.9)	-	-
DN 20 (³ / ₄ "	2.5 (2.9)	2.5 (2.9)	2.5 (2.9)
DN 20 (³ / ₄ "	4.0 (4.7)	4.0 (4.7)	4.0 (4.7)

¹⁾ The rangeability is the ratio of Kv to Kv min.

²⁾ Kv is the flow through the valve in m³/h at the specified lift 100 kPa across the valve.

Valve Summary

Zone Valves Actuators

	MZ10T-24	MZ10T-230	MZ18B	MZ18A	MZ18L
Thrust	96 N (21 lbf.)	96 N (21 lbf.)	180 N (40 lbf.)	180 N (40 lbf.)	180 N (40 lbf.)
Valve type	VZ22/32/42	VZ22/32/42	VZ22/32/42	VZ22/32/42	VZ22/32/42
Stroke	8 mm (0.31 in.)	8 mm (0.31 in.)	6.5 mm (0.25 in.)	6.5 mm (0.25 in.)	6.5 mm (0.25 in.)
Control signal	on/off	on/off	3-point	0-10 V 2-10 V	SNVT_lev_perc 0-100 LonTalk/FTT10A
Running time	~ 5 min	~ 5 min	150 s (50 Hz) 120 s (60 Hz)	150 s (50 Hz) 120 s (60 Hz)	150 s (50 Hz) 120 s (60 Hz)
Power supply	24 VAC, 50-60 Hz	230 VAC, 50-60 Hz	24 VAC, 50-60 Hz	24 VAC, 50-60 Hz	24 VAC, 50-60 Hz
Power consumption	3 VA	3 VA	0.7 VA	1.4 VA	1.4 VA
Ambient temp. op.	max 50°C (max 122°F)	max 50°C (max 122°F)	0 to +60°C (32°F to 140°F)	0 to +55°C (32°F to 131°F)	0 to +55°C (32°F to 131°F)
Enclosure rating	Vertical mount. IP 43 Horizontal mount. IP 40	Vertical mount. IP 43 Horizontal mount. IP 40	IP 43	IP 40	IP 42

Radiator Valves Actuators

	MZ09T-24	MZ09T-230	MZ09B	MZ09L
Thrust	90 N (20 lbf.)	90 N (20 lbf.)	90 N (20 lbf.)	180 N (40 lbf.)
Valve type adapters	see table below	see table below	see table below	see table below
Stroke	max. 4 mm (0.16 in.)	max. 4 mm (0.16 in.)	controlled valve stroke 1.6 mm (0.06 in.) complete act. stroke 7.9 mm (0.31 in.)	2.5 mm (0.01 in.)
Control signal	on/off	on/off	3-point	SNVT_lev_perc 0-100 LonTalk/FTT10A
Running time	~ 5.5 min	~ 5.5 min 1.6 mm (0.06 in.)	36 , stroke 44 s (60 Hz)	53 s (50 Hz)
Power supply	24 V DC or AC, 50-60 Hz	230 VAC, 50-60 Hz	24 VAC, 50-60 Hz	24 VAC, 50-60 Hz
Power consumption	2 VA	2 VA	0.7 VA	1.4 VA
Ambient temp. op.	max 50°C (max 122°F)	max 50°C (max 122°F)	0 to +60°C (32°F to 140°F)	0 to +55°C (32°F to 131°F)
Enclosure rating	IP 43	IP 43	IP 42	IP 42

Adapters

Manufacturer	Valve type	Adapter
Honeywell	V100, V200	Not required
Heimeier		Not required
Siemens L&S	Duogyr	Not required
Danfoss	Series RA2000, RA-PN, RA-N, RA-U, RA-G	911-2075-000
Danfoss	Series RAVL	911-2074-000
Markaryd	Series NT	911-2073-000
Markaryd	Series MMA Minor	911-2072-000

Valve Summary

Zone Valves

Summary and Max. close-off differential pressure ΔP_c

Type	Conn.		Kv	Cv	Kv	Cv	MZ18L / 18A / 18B 180 N (40 lbf.) Max. ΔP_c		MZ10T 96 N (22 lbf.) Max. ΔP_c	
	DN	in.					kPa	psi	kPa	psi
VZ22	15	1/2"	0.16	0.19			1600	232	600	87
VZ22	15	1/2"	0.25	0.29			1600	232	600	87
VZ22	15	1/2"	0.40	0.47			1600	232	600	87
VZ22	15	1/2"	0.63	0.74			1600	232	600	87
VZ22	15	1/2"	1.00	1.17			1200	174	180	26
VZ22	15	1/2"	1.6	1.9			1200	174	180	26
VZ22	20	3/4"	2.5	2.9			400	58	50 ¹⁾	7.3
VZ22	20	3/4"	4.0	4.7			400	58	50 ¹⁾	7.3
			A-AB:		B-AB:					
VZ32	15	1/2"	0.25	0.29	0.16	0.19	800	116	500	73
VZ32	15	1/2"	0.40	0.47	0.25	0.29	800	116	500	73
VZ32	15	1/2"	0.63	0.74	0.40	0.47	800	116	500	73
VZ32	15	1/2"	1.00	1.17	0.63	0.74	250	36	150	22
VZ32	15	1/2"	1.6	1.9	1.00	1.17	250	36	150	22
VZ32	20	3/4"	2.5	2.9	1.6	1.9	240	35	-	
VZ32	20	3/4"	4.0	4.7	2.5	2.9	240	35	-	
VZ32	20	3/4"	2.5	2.9	1.6	1.9	100	15	50 ¹⁾	7.3
VZ32	20	3/4"	4.0	4.7	2.5	2.9	100	15	50 ¹⁾	7.3
VZ42	15	1/2"	0.25	0.29	0.16	0.19	800	116	500	73
VZ42	15	1/2"	0.40	0.47	0.25	0.29	800	116	500	73
VZ42	15	1/2"	0.63	0.74	0.40	0.47	7800	116	500	73
VZ42	15	1/2"	1.00	1.17	0.63	0.74	250	36	150	22
VZ42	15	1/2"	1.6	1.9	1.00	1.17	250	36	150	22
VZ42	20	3/4"	2.5	2.9	1.6	1.9	240	35	-	
VZ42	20	3/4"	4.0	4.7	2.5	2.9	240	35	-	

¹⁾ Up to 1000 kPa (145 psi) system pressure.

Valve Summary

Butterfly Valves Actuators

	MB15A	MB15B	M30A	M30B
Torque	15 Nm (11 lbf.ft)	15 Nm (11 lbf.ft)	30 Nm (22 lbf.ft)	30 Nm (22 lbf.ft)
Valve type	TRV-S	TRV-S	TRV-S	TRV-S
Control signal	0-10 V	3-point (inc/dec)	0-10 V	3-point (inc/dec)
Running time	60 s / 120 s ¹⁾	60 s / 120 s ¹⁾	60 s / 120 s ¹⁾	60 s / 120 s ¹⁾
Power supply	24 VAC ±20% 24 V ±20% ¹⁾	230 V ±15% ¹⁾	24 VAC ±20% 24 V ±20% ¹⁾	230 V ±15% ¹⁾
Power consumption	5.1 VA running 0.7 VA standstill	4.8 VA at 24 V 2.7 VA at 230 V	5.1 VA running 0.7 VA standstill	9.2 VA, 60 s run. time 3.8 VA, 120 s run. time
Ambient temp. op.	-5 to +50°C (23°F to 122°F)	-20 to +60°C (-4 °F to 140°F)	-5 to +60°C (23 °F to 140°F)	-20 to +60°C (-4 °F to 140°F)
Enclosure rating	IP 55	IP 55	IP 55	IP 55
Auxiliary switch	-	option max. 10A, 250 VAC min. 100 mA, 24 VAC	-	option max. 10A, 250 VAC min. 100 mA, 24 VAC
Manual operation	Yes	Yes	Yes	Yes

Butterfly Valves Actuators

Summary and Max. close-off differential pressure ΔP_c

Type	Conn. DN	Actuator Input			MB15B inc/dec		MB15A 0 - 10 V ΔP_c	MB30B/MB30A inc/dec		0 - 10 V ΔP_c
		in.	Kv	Cv	Kit ¹⁾	kP	psi	Kit ¹⁾	kP	psi
TRV-S	25	1	36	42	A	1000	145	C	1000	145
TRV-S	32	1½	40	47	A	1000	145	C	1000	145
TRV-S	40	1¾	50	59	A	1000	145	C	1600	232
TRV-S	50	2	85	100	A	1000	145	C	1600	232
TRV-S	65	2½	215	252	A	700	102	C	1600	232
TRV-S	80	3	420	491	B	400	58	D	1000	145
TRV-S	100	4	800	936	B	200	29	D	1000	145
TRV-S	125	5	1010	1182	-	-	-	D	600	87
TRV-S	150	6	2100	2457	-	-	-	E	500	72
TRV-S	200	8	4000	4680	-	-	-	E	300	43

¹⁾ Required assembly kit
 A = 911-3010-000 Kit MB15 to TRV-S DN25-65
 B = 911-3014-000 Kit MB15 to TRV-S DN80-100
 C = 911-3018-000 Kit MB30 to TRV-S DN25-65
 D = 911-3022-000 Kit MB30 to TRV-S DN80-125
 E = 911-3026-000 Kit MB30 to TRV-S DN150-200

Valve Summary

Zone Valves

Summary and Max. close-off differential pressure ΔP_c

Type	Conn.		Kv (Cv)	h100		M22 2200 N		M50 5000 N		M310 300 N		M400 400 N		M800 800 N	
	DN	in.		mm	in.	Max. ΔP_c kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi
V241	15	1/2"	0.25 (0.29)	20	0.79					1000	145	1000	145	1600	232
V241	15	1/2"	0.40 (0.47)	20	0.79					1000	145	1000	145	1600	232
V241	15	1/2"	0.63 (0.74)	20	0.79					1000	145	1000	145	1600	232
V241	15	1/2"	1.0 (1.17)	20	0.79					1000	145	1000	145	1600	232
V241	15	1/2"	1.6 (1.87)	20	0.79					800	116	800	116	1600	232
V241	15	1/2"	2.5 (2.9)	20	0.79					800	116	800	116	1600	232
V241	15	1/2"	4.0 (4.7)	20	0.79					800	116	800	116	1600	232
V241	20	3/4"	6.3 (7.4)	20	0.79					650	94	650	94	1500	218
V241	25	1"	10 (11.7)	20	0.79					400	58	500	73	1150	167
V241	32	1 1/4"	16 (18.7)	20	0.79					300	44	350	51	850	123
V241	40	1 1/2"	25 (29)	20	0.79					150	22	250	36	600	87
V241	50	2"	38 (44)	20	0.79					50	7	150	22	400	58
V211	15	1/2"	1.6 (1.87)	20	0.79					800	116	800	116	1600	232
V211	15	1/2"	2.5 (2.9)	20	0.79					800	116	800	116	1600	232
V211	15	1/2"	4.0 (4.7)	20	0.79					800	116	800	116	1600	232
V211	20	3/4"	6.3 (7.4)	20	0.79					650	94	650	94	1500	218
V211	25	1"	10 (11.7)	20	0.79					400	58	500	73	1150	167
V211	32	1 1/4"	16 (18.7)	20	0.79					300	44	350	51	850	123
V211	40	1 1/2"	25 (29)	20	0.79					150	22	250	36	600	87
V211	50	2"	38 (44)	20	0.79					50	7	150	22	400	58
V211T	15	1/2"	1.6 (1.87)	20	0.79					800	116	800	116	1600	232
V211T	15	1/2"	2.5 (2.9)	20	0.79					800	116	800	116	1600	232
V211T	15	1/2"	4.0 (4.7)	20	0.79					800	116	800	116	1600	232
V211T	20	3/4"	6.3 (7.4)	20	0.79					650	94	650	94	1500	218
V211T	25	1"	10 (11.7)	20	0.79					400	58	500	73	1150	167
V211T	32	1 1/4"	16 (18.7)	20	0.79					300	44	350	51	850	123
V211T	40	1 1/2"	25 (29)	20	0.79					150	22	250	36	600	87
V211T	50	2"	38 (44)	20	0.79					50	7	150	22	400	58
V212	25	1"	10 (11.7)	20	0.79							800	116	1600	232
V212	32	1 1/4"	16 (18.7)	20	0.79							750	109	1600	232
V212	40	1 1/2"	25 (29)	20	0.79							700	102	1600	232
V212	50	2"	38 (44)	20	0.79							600	87	1600	232
V212T	25	1"	10 (11.7)	20	0.79							800	116	1600	232
V212T	32	1 1/4"	16 (18.7)	20	0.79							750	109	1600	232
V212T	40	1 1/2"	25 (29)	20	0.79							700	102	1600	232
V212T	50	2"	38 (44)	20	0.79							600	87	1600	232
V222	65	2 1/2"	63 (74)	30	1.18									1500	218
V222	80	3"	100 (117)	30	1.18									1500	218
V222	100	4"	160 (187)	30	1.18									1100	160
V222	125	5"	250 (293)	50	1.97	1600	232	1600	232						
V222	150	6"	400 (467)	50	1.97	1400	203	1600	232						
V231	15	1/2"	0.25 (0.29)	20	0.79					1000	145	1000	145	1600	232
V231	15	1/2"	0.40 (0.47)	20	0.79					1000	145	1000	145	1600	232
V231	15	1/2"	0.63 (0.74)	20	0.79					1000	145	1000	145	1600	232
V231	15	1/2"	1.0 (1.17)	20	0.79					1000	145	1000	145	1600	232
V231	15	1/2"	1.6 (1.87)	20	0.79					800	116	800	116	1600	232
V231	15	1/2"	2.5 (2.9)	20	0.79					800	116	800	116	1600	232
V231	15	1/2"	4.0 (4.7)	20	0.79					800	116	800	116	1600	232
V231	20	3/4"	6.3 (7.4)	20	0.79					650	94	650	94	1500	218
V231	25	1"	10 (11.7)	20	0.79					400	58	500	73	1150	167
V231	32	1 1/4"	16 (18.7)	20	0.79					300	44	350	51	850	123
V231	40	1 1/2"	25 (29)	20	0.79					150	22	250	36	600	87
V231	50	2"	38 (44)	20	0.79					50	7	150	22	400	58
V232	25	1"	10 (11.7)	20	0.79							800	116	1600	232
V232	32	1 1/4"	16 (18.7)	20	0.79							750	109	1600	232
V232	40	1 1/2"	25 (29)	20	0.79							700	102	1600	232
V232	50	2"	38 (44)	20	0.79							600	87	1600	232
V292	65	2 1/2"	63 (74)	30	1.18									1500	218
V292	80	3"	100 (117)	30	1.18									1500	218
V292	100	4"	160 (187)	30	1.18									1100	160
V292	125	5"	250 (293)	50	1.97	1800	261	2500	363						
V292	150	6"	400 (467)	50	1.97	1400	203	2500	363						

ΔP_c = Maximum pressure over valve in closed position.



Valve Summary

Zone Valves

Summary and Max. close-off differential pressure ΔP_c

	Type	Conn.		Kv (Cv)	h100		M310 300 N		M400 400 N		M800 800 N		M16 1600 N		M22 2200 N		M50 5000 N		EM9, M9B 15 Nm		
		DN	in.		mm	in.	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	Max. ΔP_c kPa	psi	
P l u g V a l v e s	V341	15	1/2"	1.6 (1.9)	20	0.79	800	116	800	116	1600	232									
	V341	15	1/2"	2.5 (2.9)	20	0.79	800	87	800	87	1600	232									
	V341	15	1/2"	4.0 (4.7)	20	0.79	800	87	800	87	1600	232									
	V341	20	3/4"	6.3 (7.4)	20	0.79	650	94	650	94	1500	218									
	V341	25	1"	10 (11.7)	20	0.79	400	58	500	73	1150	167									
	V341	32	1 1/4"	16 (19)	20	0.79	300	44	350	51	850	123									
	V341	40	1 1/2"	25 (29)	20	0.79	150	22	250	36	600	87									
	V341	50	2"	38 (44)	20	0.79	50	7	150	22	400	58									
	V311	15	1/2"	1.6 (1.9)	20	0.79	800	116	800	116	1600	232									
	V311	15	1/2"	2.5 (2.9)	20	0.79	800	87	800	87	1600	232									
	V311	15	1/2"	4.0 (4.7)	20	0.79	800	87	800	87	1600	232									
	V311	20	3/4"	6.3 (7.4)	20	0.79	650	94	650	94	1500	218									
	V311	25	1"	10 (11.7)	20	0.79	400	58	500	73	1150	167									
	V311	32	1 1/4"	16 (19)	20	0.79	300	44	350	51	850	123									
	V311	40	1 1/2"	25 (29)	20	0.79	150	22	250	36	600	87									
	V311	50	2"	38 (44)	20	0.79	50	7	150	22	400	58									
	V311T	15	1/2"	1.6 (1.9)	20	0.79	800	116	800	116	1600	232									
	V311T	15	1/2"	2.5 (2.9)	20	0.79	800	87	800	87	1600	232									
	V311T	15	1/2"	4.0 (4.7)	20	0.79	800	87	800	87	1600	232									
	V311T	20	3/4"	6.3 (7.4)	20	0.79	650	94	650	94	1500	218									
	V311T	25	1"	10 (11.7)	20	0.79	400	58	500	73	1150	167									
	V311T	32	1 1/4"	16 (19)	20	0.79	300	44	350	51	850	123									
	V311T	40	1 1/2"	25 (29)	20	0.79	150	22	250	36	600	87									
	V311T	50	2"	38 (44)	20	0.79	50	7	150	22	400	58									
	V321	65	2 1/2"	63 (74)	30	1.18					140	20	320	46							
	V321	80	3"	100 (117)	30	1.18					80	12	190	28							
	V321	100	4"	160 (187)	30	1.18					40	6	110	16							
	V321	125	5"	250 (293)	50	1.97									90	13	340	49			
V321	150	6"	400 (467)	50	1.97									60	9	240	35				
R o t a r y D i s k	VTRE	20	3/4"	12 (14.0)															50	7	
	VTRE	25	1"	18 (21)															50	7	
	VTRE	32	1 1/4"	28 (33)															50	7	
	VTRE	40	1 1/2"	44 (51)															50	7	
	VTRE	50	2"	60 (70)															50	7	
	VTRE	65	2 1/2"	90 (105)															50	7	
	VTRE	80	3"	150 (176)															50	7	
	VTRE	100	4"	225 (263)															50	7	
	VTRE	125	5"	280 (328)															50	7	
	VTRE	150	6"	400 (468)															50	7	

ΔP_c = Maximum pressure over valve in closed position.

Accessories and Spare parts

Stuffing boxes

Standard S V241, V341, V231, V232
V211, V211T, V212, V212T, V311, V311T

Part number

1-001-0800-0

Stem Heater Forta 24V 30VA

880-0108-000

Valve Summary

Part no.s for Valves with Actuator Mounted at Factory

2-Way Valves

Fluid Control Unit (FCU) Valve + Actuator mounted in factory		V222		V292	
		721-2266-000 DN125	721-2270-000 DN150	721-9266-000 DN125	721-9270-000 DN150
890-0104-000	ActuatorValve M22A-24V	119-0104-000	119-0106-000	119-0108-000	119-0110-000
890-0106-000	ActuatorValve M22B-24V	119-0116-000	119-0118-000	119-0120-000	119-0122-000
890-0108-000	ActuatorValve M22B-24V-S2	119-0128-000	119-0130-000	119-0132-000	119-0134-000
890-0110-000	ActuatorValve M22B-230V	119-0140-000	119-0142-000	119-0144-000	119-0146-000
890-0112-000	ActuatorValve M22B-230V-S2	119-0152-000	119-0154-000	119-0156-000	119-0158-000
890-0204-000	ActuatorValve M50A-24V		119-0204-000	119-0206-000	119-0208-000
890-0206-000	ActuatorValve M50B-24V		119-0214-000	119-0216-000	119-0218-000
890-0208-000	ActuatorValve M50B-24V-S2		119-0224-000	119-0226-000	119-0228-000
890-0210-000	ActuatorValve M50B-230V		119-0234-000	119-0236-000	119-0238-000
890-0212-000	ActuatorValve M50B-230V-S2		119-0244-000	119-0246-000	119-0248-000

Example: 2-way valve PN16 V222-125-250, with mounted actuator M22A-24V, has part.no 119-0104-000.

3-Way Valves

Fluid Control Unit (FCU) Valve + Actuator mounted in factory		V321				
		731-2153-000 DN65	731-2157-000 DN80	731-2161-000 DN100	731-2165-000 DN125	731-2169-000 DN150
890-0004-000	ActuatorValve M16A-24V	119-0004-000	119-0006-000	119-0008-000		
890-0006-000	ActuatorValve M16B-24V	119-0010-000	119-0012-000	119-0014-000		
890-0008-000	ActuatorValve M16B-24V-S2	119-0016-000	119-0018-000	119-0020-000		
890-0010-000	ActuatorValve M16B-230V	119-0022-000	119-0024-000	119-0026-000		
890-0012-000	ActuatorValve M16B-230V-S2	119-0028-000	119-0030-000	119-0032-000		
890-0104-000	ActuatorValve M22A-24V				119-0112-000	119-0114-000
890-0106-000	ActuatorValve M22B-24V				119-0124-000	119-0126-000
890-0108-000	ActuatorValve M22B-24V-S2				119-0136-000	119-0138-000
890-0110-000	ActuatorValve M22B-230V				119-0148-000	119-0150-000
890-0112-000	ActuatorValve M22B-230V-S2				119-0160-000	119-0162-000
890-0204-000	ActuatorValve M50A-24V				119-0210-000	119-0212-000
890-0206-000	ActuatorValve M50B-24V				119-0220-000	119-0222-000
890-0208-000	ActuatorValve M50B-24V-S2				119-0230-000	119-0232-000
890-0210-000	ActuatorValve M50B-230V				119-0240-000	119-0242-000
890-0212-000	ActuatorValve M50B-230V-S2				119-0250-000	119-0252-000

Valve Summary

TAC Forta Actuators

Type of Actuator	M310	M400	M800
Thrust	300 N 67 lbf	400 N 90 lbf	800 N 180 lbf
Valve type	Plug	Plug	Plug
Stroke	10–32 mm 0.39–1.26 in.	10–32 mm 0.39–1.26 in.	10–52 mm 0.39–2.05 in.
Control signal, Analogue	2–10 V DC 0–10 V DC	2–10 V DC 0–10 V DC	2–10 V DC 0–10 V DC
Running time			
10–25 mm (0.39–0.98 in)	15 s	60 s	15 s
10–32 mm (0.39–1.26 in)	20 s	60 s	20 s
10–52 mm (0.39–2.05 in)	–	–	30 s
Control signal, 3-point (incr/decr)	24 V AC	24 V AC	24 V AC
Running time	60/300 s	60/300 s	60/300 s
Power supply	24 V AC ±10% 50–60 Hz	24 V AC ±10% 50–60 Hz	24 V AC ±10% 50–60 Hz
Power consumption	6 VA average	6 VA average	15 VA average
Transformer sizing	30 VA	30 VA	50 VA
Supply output	16 V DC, max 25 mA	16 V DC, max 25 mA	16 V DC, max 25 mA
Ambient temp., operation	–10°C to +50°C 14°F to +122°F	–10°C to +50°C 14°F to +122°F	–10°C to +50°C 14°F to +122°F
Enclosure rating	IP 54	IP 54	IP 54
Auxiliary switch	24 V AC ¹⁾ 4 A resistive	24 V AC ¹⁾ 4 A resistive	24 V AC ¹⁾ 4 A resistive
Manual operation device	Yes	Yes	Yes
Position feedback	2–10 V DC	2–10 V DC	2–10 V DC
STS Safety device	Yes ²⁾	No	Yes ²⁾

¹⁾ Auxiliary switch S2 is optional.

²⁾ STS safety device is optional.

Valve Summary

Large Size Valves Actuators

	M16A	M16B	M22A	M22B	M50A	M50B
Thrust	1600 N (360 lbf.)	1600 N (360 lbf.)	1600 N (360 lbf.)	2200 N (495 lbf.)	5000 N (1124 lbf.)	5000 N (1124 lbf.)
Valve type	V321: DN65-100	V321: DN65-100	V222: DN125-150 V292: DN125-150 V321: DN125-150	V222: DN125-150 V292: DN125-150 V321: DN125-150	V222: DN125-150 V292: DN125-150 V321: DN125-150	V222: DN125-150 V292: DN125-150 V321: DN125-150
Stroke	30 mm (1.18 in.)	30 mm (1.18 in.)	50 mm (1.97 in.)	50 mm (1.97 in.)	50 mm (1.97 in.)	50 mm (1.97 in.)
Control signal	0 - 10 V (incr/decr)	3-point 0-20 mA	0 - 10 V (incr/decr)	3-point 0-20 mA	0 - 10 V (incr/decr)	3-point
Running time	200 s	200 s	132 s	132 s	132 s	132 s
Power supply	24 VAC ±10% 50/60 Hz ¹⁾	230 VAC ±10% 24 VAC ±10% 50/60 Hz ¹⁾	24 VAC -15% +10% 50/60 Hz ¹⁾	230 VAC -15% +10% 24 VAC -15% +10% 50/60 Hz ¹⁾	24 VAC -15% +10% 50/60 Hz ¹⁾	230 VAC -15% +10% 24 VAC -15% +10% 50/60 Hz ¹⁾
Power consumption	11.5 VA	8.0 VA	12.0 VA	11.0 VA (230V) 12.0 VA (24 V)	15.0 VA	28.0 VA (230V) 19.0 VA (24 V)
Ambient temp. op.	0 to +50°C (32°F to 122°F)	0 to +50°C (32°F to 122°F)	-20 to +70°C (-4°F to 158°F)	-20 to +70°C (-4°F to 158°F)	-20 to +70°C (-4°F to 158°F)	-20 to +70°C (-4°F to 158°F)
Enclosure rating	IP 54	IP 54	IP 65	IP 65	IP 65	IP 65
Auxiliary switch ²⁾	-	3A, 250 VAC	-	10A, 250 VAC	-	10A, 250 VAC
Manual operation	Yes	Yes	Yes	Yes	Yes	Yes

¹⁾ Speed and power consumption is 20% higher for 60 Hz

²⁾ Auxiliary switch is optional

Rotary Actuators

Control Signal	2-10 V DC	24 V (24/230 V) AC incr/decr
Type of actuator	EM9	M9B
Torque	15 Nm (11 lbf ft)	15 Nm (11 lbf ft)
Valve type	VTRE, TRV ¹⁾	VTRE, TRV ¹⁾
Power supply	24 V ±10%, 50-60 Hz	24 V alt 230 V ±10%, 50-60 Hz
Power consumption	3 VA	3 VA
Control signal	2-10 V DC	-
Running time	Programmable, 90°: 60-120 s 180°: 120-240 s	4 min. (90°)
Ambient temp. operation	-15°C to +55°C 5°F to +131°F	-15°C to +55°C 5°F to +131°F
Enclosure rating	IP 54	IP 54
Auxiliary switch (B)	-	230 VAC, 5 A
Manual operation device	Yes (Only at Power off!)	Yes (Only at Power off!)

¹⁾ Mounting kit 860-0991-000 needed.

Valves



Valves

V231, Two-way Plug Valve, PN 25	94
V232, Two-way Plug Valve, Pressure balanced, PN 25	95
V241, Two-way Plug Valve, Bronze, PN 16	96
V341, Two-way Plug Valve, Bronze, PN 16	97
V211, Two-way Plug Valve, Flanged, PN 16	98
V211T, Two-way Plug Valve, Internal Pipe Thread, PN 16	99
V212, Two-way Plug Valve, Balanced, Flanged, PN 16	100
V212T, Two-way Plug Valve, Balanced, Internal Pipe thread, PN 16	101
V311, Three-way Plug Valve, Flanged, PN 16	102
V311T, Three-way Plug Valve, Internal Pipe Thread, PN 16	103
TRV-S, Butterfly Valve, Tight-closing, PN 16	104
VTRE, Three-way Mixing Valve, Flanged, Rotating sleeve, PN 16	105
VZ22, Two-way, Zone Valve, Brass, External Thread, PN 16	106
VZ32, Three-way, Zone Valve, Brass, External Thread, PN 16	107
VZ42, Three-way Zone Valve with Bypass, Brass, External Thread, PN 16	108

Valves

V231, Two-way Plug Valve, PN 25

V231 can be used in a wide range of applications, such as heating, district heating and air handling systems. The valve can handle the following types of media: Hot and chilled water, water containing phosphate or hydrazine additives and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium: -20 – +150°C (-4 – 302°F)
 Pressure class: PN 25 (362 psi)
 Flow characteristic: EQM
 Stroke: 20 mm (0.79 in.)
 Rangeability $K_v/K_{v_{min}}$: > 50 for DN = 15, > 200 for DN ≥ 20
 ΔP_m : max. 800 kPa (116 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K_{vs} m ³ /h	C_{vs}	Part Number
DN	in.			
15	1/2"	0.25	0.29	721-3106-000
15	1/2"	0.40	0.47	721-3110-000
15	1/2"	0.63	0.74	721-3114-000
15	1/2"	1.0	1.2	721-3118-000
15	1/2"	1.6	1.9	721-3122-000
15	1/2"	2.5	2.9	721-3126-000
15	1/2"	4.0	4.7	721-3130-000
20	3/4"	6.3	7.4	721-3134-000
25	1"	10	11.7	721-3138-000
32	1 1/4"	16	18.7	721-3142-000
40	1 1/2"	25	29.3	721-3146-000
50	2"	38	44.5	721-3150-000

Valves

V232, Two-way Plug Valve, Pressure balanced, PN 25

V232 can be used in a wide range of applications, such as heating, district heating and air handling systems. The valve can handle the following types of media: Hot and chilled water, water containing phosphate or hydrazine additives and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +150°C (-4 – 302°F)
Pressure class:	PN 25 (362 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability $K_v/K_{v_{min}}$:	> 200
ΔP_m :	max. 800 kPa (116 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K_{vs} m ³ /h	C_{vs}	Part Number
DN	in.			
25	1"	10	11.7	721-3238-000
32	1¼"	16	18.7	721-3242-000
40	1½"	25	29.3	721-3246-000
50	2"	38	44.5	721-3250-000

Valves

V241, Two-way Plug Valve, Bronze, PN 16

V241 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water, water containing phosphate or hydrazine additives and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +150°C (-4 – 302°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50 for DN = 15, > 100 for DN ≥ 20
ΔPm:	max. 600 kPa (87 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	1/2"	0.25	0.29	721-4106-000
15	1/2"	0.40	0.47	721-4110-000
15	1/2"	0.63	0.74	721-4114-000
15	1/2"	1.0	1.2	721-4118-000
15	1/2"	1.6	1.9	721-4122-000
15	1/2"	2.5	2.9	721-4126-000
15	1/2"	4.0	4.7	721-4130-000
20	3/4"	6.3	7.4	721-4134-000
25	1"	10	11.7	721-4138-000
32	1 1/4"	16	18.7	721-4142-000
40	1 1/2"	25	29.3	721-4146-000
50	2"	38	44.5	721-4150-000

Valves

V341, Two-way Plug Valve, Bronze, PN 16

V341 can be used in a wide range of applications, such as heating, cooling and air handling systems. The valve can handle the following types of media: Hot and chilled water, water containing phosphate or hydrazine additives and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 - +150°C (-4 - 302°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic A - AB:	EQM
Flow characteristic: B - AB	Complementary
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50 for DN = 15, > 100 for DN ≥ 20
ΔPm:	600 kPa (87 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	1/2"	1.6	1.9	731-4121-000
15	1/2"	2.5	2.9	731-4125-000
15	1/2"	4.0	4.7	731-4129-000
20	3/4"	6.3	7.4	731-4133-000
25	1"	10	11.7	731-4137-000
32	1 1/4"	16	18.7	731-4141-000
40	1 1/2"	25	29.3	731-4145-000
50	2"	38	44.5	731-4149-000

Valves

V211, Two-way Plug Valve, Flanged, PN 16

V211 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	1/2"	1.6	1.9	721-4116-000
15	1/2"	2.5	2.9	721-4120-000
15	1/2"	4.0	4.7	721-4124-000
20	3/4"	6.3	7.4	721-4128-000
25	1"	10	11.7	721-4132-000
32	1 1/4"	16	18.7	721-4136-000
40	1 1/2"	25	29.3	721-4140-000
50	2"	38	44.5	721-4144-000

Valves

V211T, Two-way Plug Valve, Internal Pipe Thread, PN 16

V211T can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	½"	1.6	1.9	721-1716-000
15	½"	2.5	2.9	721-1720-000
15	½"	4.0	4.7	721-1724-000
20	¾"	6.3	7.4	721-1728-000
25	1"	10	11.7	721-1732-000
32	1¼"	16	18.7	721-1736-000
40	1½"	25	29.3	721-1740-000
50	2"	38	44.5	721-1744-000

Valves

V212, Two-way Plug Valve, Balanced, Flanged, PN 16

V212 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{Vs} m ³ /h	C _{Vs}	Part Number
DN	in.			
25	1"	10	11.7	721-1232-000
32	1¼"	16	18.7	721-1236-000
40	1½"	25	29.3	721-1240-000
50	2"	38	44.5	721-1244-000

Valves

V212T, Two-way Plug Valve, Balanced, Internal Pipe thread, PN 16

V212T can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability $K_v/K_{v_{min}}$:	> 50
ΔP_m :	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K_{vs} m ³ /h	C_{vs}	Part Number
DN	in.			
25	1"	10	11.7	721-1832-000
32	1¼"	16	18.7	721-1836-000
40	1½"	25	29.3	721-1840-000
50	2"	38	44.5	721-1844-000

Valves

V311, Three-way Plug Valve, Flanged, PN 16

V311 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic:	EQM
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	1/2"	1.6	1.9	731-1117-000
15	1/2"	2.5	2.9	731-1121-000
15	1/2"	4.0	4.7	731-1125-000
20	3/4"	6.3	7.4	731-1129-000
25	1"	10	11.7	731-1133-000
32	1 1/4"	16	18.7	731-1137-000
40	1 1/2"	25	29.3	731-1141-000
50	2"	38	44.5	731-1145-000

Valves

V311T, Three-way Plug Valve, Internal Pipe Thread, PN 16

V311T can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems. The valve can handle the following types of media: Hot and chilled water and water with antifreeze additives such as glycol. If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.



Operating temperature, medium:	-20 – +120°C (-4 – 248°F)
Pressure class:	PN 16 (232 psi)
Flow characteristic A - AB:	EQM
Flow characteristic B - AB:	Complementary
Stroke:	20 mm (0.79 in.)
Rangeability Kv/Kv _{min} :	> 50
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{vs} m ³ /h	C _{vs}	Part Number
DN	in.			
15	½"	1.6	1.9	731-1717-000
15	½"	2.5	2.9	731-1721-000
15	½"	4.0	4.7	731-1725-000
20	¾"	6.3	7.4	731-1729-000
25	1"	10	11.7	731-1733-000
32	1¼"	16	18.7	731-1737-000
40	1½"	25	29.3	731-1741-000
50	2"	38	44.5	731-1745-000

Valves

TRV-S, Butterfly Valve, Tight-closing, PN 16

TRV-S is a butterfly valve designed to be fitted between two counter flanges PN6, PN10 or PN16. Ethylene-propylene rubber lining for tight close off. The special lining of the body eliminates the need for flange gaskets. TRV-S can be direct mounted to an electric actuator. The actuator is connected by a flange according to EN ISO 5211. Actuator type is determined by control system type, actuator force, running time etc. Suitable actuators are MB15 and MB30. The valve can handle the following types of media: Hot water and de-aerated cooling water, low-pressure steam up to 110°C (230°F), water with hydrazine and phosphate water treatment, de-aerated water with anti-freeze additives, such as glycol (up to 50%) and brines.



Operating temperature, medium:	-10 – +110°C (14 – 230°F)
Pressure class:	PN 16 (232 psi)
ΔPm:	max. 400 kPa (58 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _v m ³ /h	C _{vs}	Part Number
DN	in.			
25	1"	36	42	721-6010-000
32	1¼"	40	47	721-6014-000
40	1½"	50	59	721-6018-000
50	2"	85	100	721-6022-000
65	2¼"	215	252	721-6026-000
80	3"	420	491	721-6030-000
100	4"	800	936	721-6034-000
125	5"	1010	1182	721-6038-000
150	6"	2100	2457	721-6042-000
200	8"	4000	4680	721-6046-000

Valves

VTRE, Three-way Mixing Valve, Flanged, Rotating sleeve, PN 16

The VTRE is a three-way rotating sleeve valve, designed to be used either as a mixing or a diverting valve. Typical applications include hydronic heating and air handling systems with moderate demands on differential pressure and leakage. The VTRE valve can be used in systems containing up to 50% glycol. The VTRE valve is delivered with a handle for manual operation. The actuator is supplied separately and recommended actuators are EM9 or M9B. The water flow through the valve is controlled by a sleeve which is rotated. The stem has a 90° rotation and the ports are unmarked. The valve is delivered with a pointer which indicates the mid-part of the sleeve. The VTRE is symmetrical with regard to the opposing ports.



Water temperature:	-10 – +110°C (14 – 230°F)
Pressure class:	PN 16 (232 psi)
Operating angle:	90°
Pressure drop:	max. 50 kPa (7.25 psi)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _v m ³ /h	Part Number
DN	in.		
20	½"	12	731-7039-000
25	1"	18	731-7041-000
32	1¼"	28	731-7045-000
40	1½"	44	731-7049-000
50	2"	60	731-7053-000
65	2¼"	90	731-7057-000
80	3"	150	731-7061-000
100	4"	225	731-7065-000
125	5"	280	731-7067-000
150	6"	400	731-7069-000

Valves

VZ22, Two-way, Zone Valve, Brass, External Thread, PN 16

VZ22 is a small linear valve used for the control of hot and/or chilled water for fan coil units, small reheaters/recoolers in electric/electronic temperature control systems. The valve is used together with actuators MZ18 or MZ10.



Water temperature:	2 – +120°C (36 – 248°F)
Pressure class:	PN 16 (232 psi)
Rangeability:	≥50
Stroke:	6.5 mm (0.26 in.)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		K _{Vs} m ³ /h	C _v	Part Number
DN	in.			
15	1/2"	0.16	0.19	721-0702-000
15	1/2"	0.25	0.29	721-0706-000
15	1/2"	0.40	0.47	721-0710-000
15	1/2"	0.63	0.74	721-0714-000
15	1/2"	1.00	1.17	721-0718-000
15	1/2"	1.6	1.9	721-0722-000
20	3/4"	2.5	2.9	721-0726-000
20	3/4"	4.0	4.7	721-0730-000

Valves

VZ32, Three-way, Zone Valve, Brass, External Thread, PN 16

VZ32 is a small linear valve used for the control of hot and/or chilled water for fan coil units, small reheaters/recoolers in electric/electronic temperature control systems. The valve is used together with actuators MZ18 or MZ10.



Water temperature:	2 – +120°C (36 – 248°F)
Pressure class:	PN 16 (232 psi)
Rangeability:	≥50 for controlled port
Stroke:	6.5 mm (0.26 in.)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		A – AB		B – AB		Close off press. at 180/96 N	Part Number
DN	in.	K _{vs}	C _v	K _{vs}	C _v		
15	1/2"	0.25	0.29	0.16	0.19	800/500	731-0706-000
15	1/2"	0.40	0.47	0.25	0.29	800/500	731-0710-000
15	1/2"	0.63	0.74	0.40	0.47	800/500	731-0714-000
15	1/2"	1.00	1.17	0.63	0.74	250/150	731-0718-000
15	1/2"	1.6	1.9	1.00	1.17	250/150	731-0722-000
20	3/4"	2.5	2.9	1.6	1.9	240/-	731-0726-000
20	3/4"	4.0	4.7	2.5	2.9	240/-	731-0730-000
20	3/4"	2.5	2.9	1.6	1.9	100/50	731-0727-000
20	3/4"	4.0	4.7	2.5	2.9	100/50	731-0731-000

Valves

VZ42, Three-way Zone Valve with Bypass, Brass, External Thread, PN 16

VZ42 is a small linear valve used for the control of hot and/or chilled water for fan coil units, small reheaters/recoolers in electric/electronic temperature control systems. The valve is used together with actuators MZ18 or MZ10.



Water temperature :	2 – +120°C (36 – 248°F)
Pressure class:	PN 16 (232 psi)
Rangeability:	≥50 for controlled port
Stroke:	6.5 mm (0.26 in.)

For further specifications, see technical data sheet. www.tac.se/docnet

Connection		A – AB		B – AB		Close off press. at 180/96 N	Part Number
DN	in.	K _{vs}	C _v	K _{vs}	C _v		
15	1/2"	0.25	0.29	0.16	0.19	800/500	741-0706-000
15	1/2"	0.40	0.47	0.25	0.29	800/500	741-0710-000
15	1/2"	0.63	0.74	0.40	0.47	800/500	741-0714-000
15	1/2"	1.00	1.17	0.63	0.74	250/150	741-0718-000
15	1/2"	1.6	1.9	1.00	1.17	250/150	741-0722-000
20	3/4"	2.5	2.9	1.6	1.9	240/-	741-0726-000
20	3/4"	4.0	4.7	2.5	2.9	240/-	741-0730-000

Actuators



t.a.c. 

Actuators

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Actuators

M310, Actuator for Plug Valves

M310 is an electro-mechanical actuator for the control of two-way and three-way plug valves for domestic hot water, heating and air handling systems. M310 is either controlled by an increase/decrease signal or by a modulating 0/2–10 V control signal. The electronic circuitry of the actuator ensures that the running time is the same, regardless of the stroke. It is easy to mount and connect the actuator. It can be mounted directly onto TAC's control valves. The working range of the actuator is adjusted automatically depending on the stroke of the valve. The actuator is supplied by 24 V AC. It can provide 16 V DC voltage supply for older TAC controllers. M310 can be equipped with end point switches and safety unit (STS).



Operating and storage temperature:	-10 – +50°C (14 – 122°F)
Supply voltage:	24 V AC ±10% 50/60 Hz
Power consumption:	6 VA
Input:	Analog 0/2 – 10 V, Inc./dec. 24 V AC
Stroke time:	Modulating 15/20 s, Inc./dec. 60/300 s
Stroke:	10 – 32 mm
Thrust:	300 N
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

M310, Actuator for Plug Valves	880-0210-020
M310-S2, Actuator for Plug Valves with End Point Switches	880-0211-020
M310-STS, Actuator for Plug Valves with STS	880-0212-030
M310-S2-STS, Actuator for Plug Valves with End Switches and STS ..	880-0213-030

M400, Actuator for Plug Valves

M400 is an electro-mechanical actuator for the control of two-way and three-way plug valves for heating and air handling systems. M400 is either controlled by an increase/decrease signal or by a modulating 0/2–10 V control signal. The electronic circuitry of the actuator ensures that the running time is the same, regardless of the stroke. It is easy to mount and connect the actuator. It can be mounted directly onto TAC's control valves, without any mounting kit. The working range of the actuator is adjusted automatically depending on the stroke of the valve. The electronic circuitry of the actuator then takes care of the adjustment of the valve end positions. The actuator is supplied by 24 V AC. It can provide 16 V DC voltage supply for older TAC controllers. M400 can be equipped with end point switches.



Operating and storage temperature:	-10 – +50°C (14 – 122°F)
Supply voltage:	24 V AC ±10% 50 – 60 Hz
Power consumption:	6 VA
Input:	Analog 0/2 – 10 V, Inc./dec. 24 V AC
Running time:	Modulating 60 s, Inc./dec. 60/300 s
Stroke:	10 – 32 mm
Thrust:	400 N
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

M400, Actuator for Plug Valves	880-0230-020
M400, Actuator for Plug Valves with End Point Switches	880-0231-020

Actuators

M800, Actuator for Plug Valves

M800 is an electro-mechanical actuator for the control of two-way and three-way plug valves for domestic hot water, heating and air handling systems. M800 is either controlled by an increase/decrease signal or by a modulating 0/2–10 V control signal. The electronic circuitry of the actuator ensures that the running time is the same, regardless of the stroke. It is easy to mount and connect the actuator. It can be mounted directly onto TAC's control valves. The working range of the actuator is adjusted automatically depending on the stroke of the valve. The electronic circuitry of the actuator then takes care of the adjustment of the valve end positions. The actuator is supplied by 24 V AC. It can provide 16 V DC voltage supply for older TAC controllers. M800 can be equipped with end point switches and safety unit (STS).



Operating and storage temperature:	-10 – +50°C (14 – 122°F)
Supply voltage:	24 V AC ±10% 50 – 60 Hz
Power consumption:	15 VA
Input:	Analog 0/2 – 10 V, Inc./dec. 24 V AC
Stroke time:	Modulating 15/20/30 s, Inc./dec. 60/300 s
Stroke:	10 – 52 mm
Thrust:	800 N
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

M800, Actuator for Plug Valves	880-0310-020
M800-S2, Actuator for Plug Valves with End Point Switches	880-0311-020
M800-ST5, Actuator for Plug Valves with STS	880-0312-030
M800-S2-ST5, Actuator for Plug Valves with End Switches and STS ..	880-0313-030

EM9, Actuator for Rotating Stem

EM9 is an electronic actuator for motorising valves type VTRE and TRV with rotating valve stem. EM9 operates on 24 V and is controlled by selectable 0–10 V DC, 2–10 V DC, 0–20 mA or 4–20 mA control signal. The actuator is available in different models for 90 and 180 working range. The running time can be programmed. EM9 can be operated manually and indicates the valve position on front.



Operating and storage temperature:	-15 – +55°C (5 – 131°F)
Supply voltage:	24 V AC ±10% 50 – 60 Hz
Power consumption:	3 VA
Input:	Analog 0/2 – 10 V DC, 0/4 – 20 mA DC
Running time 90°:	60/90/120 s, (selectible)
Running time 180°:	120/180/240 s, (selectible)
Torque:	15 Nm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EM9/90°, Actuator for Rotating Stem	860-1100-000
EM9/180°, Actuator for Rotating Stem	860-1110-000

Actuators



M9B, Actuator for rotating Stem

M9B is an electromechanical actuator for motorising valves type VTRE and TRV with rotating valve stem. M9B is available for 24 V and 230 V, 50–60 Hz. It is controlled by three-point control. The working range of the actuator is adjustable from 30 to 180 degrees of rotation. M9B can be operated manually and indicates the valve position on front.

Operating and storage temperature:	-15 – +55°C (5 – 131°F)
Supply voltage:	24 V or 230 V AC ±10% 50/60 Hz
Power consumption:	3 VA
Control signal:	three-point
Running time for 90°:	appr. 4 min.
Torque:	15 Nm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

M9B/24, Actuator for Rotating Stem	860-1010-000
M9B/230, Actuator for Rotating Stem	860-1020-000

MB15A, Actuator for Butterfly Valves (Modulating)

MB15A is an electromechanical actuator for motorising butterfly valves TRV-S. MB15A is available for 24 V and it is controlled by 0–10 V or 0–20 mA signal. The working range of the actuator is set from factory to 90° to fit with TRV-S. MB15A can be operated manually. A pointer between the actuator and the valve indicates the valve position.



Operating temperature:	-5 – +60°C (23 – 140°F)
Supply voltage:	24 V AC ±20% 50/60 Hz
Power consumption:	max. 5.4 VA
Control signal:	0 – 10 V DC or 0 – 20 mA DC
Running time:	60 or 120 s
Torque:	15 Nm
Enclosure rating:	IP 55

For further specifications, see technical data sheet. www.tac.se/docnet

MB15A-60s-24V, Actuator for Butterfly Valves	865-1518-000
MB15A-120s-24V, Actuator for Butterfly Valves	865-1528-000

Actuators

MB15B, Actuator for Butterfly Valves (three-point)

MB15B is an electromechanical actuator for motorising butterfly valves TRV-S. MB15B is available for 24 V and 230 V, 50–60 Hz. It is controlled by three-point control. The working range of the actuator is set from factory to 90° to fit with TRV-S. MB15B can be operated manually. A pointer between the actuator and the valve indicates the valve position.



Operating temperature:	-20 – +60°C (-4 – 140°F)
Supply voltage:	24 V AC ±20% or 230 V AC ±15% 50/60 Hz
Power consumption:	max. 5.4 VA
Control signal:	three-point Inc./dec.
Running time:	60 or 120 s
Torque:	15 Nm
Enclosure rating:	IP 55

For further specifications, see technical data sheet. www.tac.se/docnet

MB15B-60s-230V, Actuator for Butterfly Valves	865-1510-000
MB15B-60s-24V, Actuator for Butterfly Valves	865-1514-000
MB15B-120s-230V, Actuator for Butterfly Valves	865-1520-000
MB15B-120s-24V, Actuator for Butterfly Valves	865-1524-000

MB30A, Actuator for Butterfly Valves (Modulating)

MB30A is an electromechanical actuator for motorising butterfly valves TRV-S. MB30A is available for 24 V and it is controlled by 0–10 V or 0–20 mA signal. The working range of the actuator is set from factory to 90° to fit with TRV-S. MB30A can be operated manually. A pointer between the actuator and the valve indicates the valve position.



Operating temperature:	-5 – +50°C (23 – 122°F)
Supply voltage:	24 V AC ±20% 50 – 60 Hz
Power consumption:	max. 5.4 VA
Control signal:	0 – 10 V DC or 0 – 20 mA DC
Running time:	60 or 120 s
Torque:	30 Nm
Enclosure rating:	IP 55

For further specifications, see technical data sheet. www.tac.se/docnet

MB30A-60s-24V, Actuator for Butterfly Valves	865-3018-000
MB30A-120s-24V, Actuator for Butterfly Valves	865-3028-000

Actuators

MB30B, Actuator for Butterfly Valves (three-point)

MB30B is an electromechanical actuator for motorising butterfly valves TRV-S. MB30B is available for 24 V and 230 V, 50–60 Hz. It is controlled by three-point control. The working range of the actuator is set from factory to 90° to fit with TRV-S. MB30B can be operated manually. A pointer between the actuator and the valve indicates the valve position.



Operating temperature:	-20 – +60°C (-4 – 140°F)
Supply voltage:	24 V AC ±20% or 230 V AC ±15% 50/60 Hz
Power consumption:	4.8 VA at 120 s and 10.4 VA at 60 s
Control signal:	three-point Inc./dec.
Running time:	60 or 120 s
Torque:	30 Nm
Enclosure rating	IP 55

For further specifications, see technical data sheet. www.tac.se/docnet

MB30B-60s-230V, Actuator for Butterfly Valves	865-3010-000
MB30B-60s-24V, Actuator for Butterfly Valves	865-3014-000
MB30B-120s-230V, Actuator for Butterfly Valves	865-3020-000
MB30B-120s-24V, Actuator for Butterfly Valves	865-3024-000

MZ18A, Modulating Valve Actuator

The MZ18A actuator is designed to provide modulating control together with the VZ22, VZ32 and VZ42 series of small linear valves. The MZ18A is used in fan-coil-units, induction units, small reheaters and coolers, and for zone control applications. The actuator is compatible with controllers providing 0–10 V or 2–10 V output signals. Due to an automatic synchronisation function the close-off point is self-adjusting. Based on a running time of 150 s, valve positioning and flow adjustment is very exact.



Operating temperature:	-10 – +50°C (14 – 122°F)
Supply voltage:	24 V AC ±15% 50/60 Hz
Power consumption:	1.4 VA
Input:	0/2 – 10 V
Running time:	150 s at 50 Hz and 120 s at 60 Hz
Stroke:	6.5 mm
Force:	180 N
Enclosure rating:	IP 40

For further specifications, see technical data sheet. www.tac.se/docnet

MZ18A, Modulating Valve Actuator	845-5100-000
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Actuators

MZ18B, Three-point Valve Actuator

The MZ18B actuator is designed to provide three-point control together with the VZ22, VZ32 and VZ42 series of small valves. The MZ18B actuator is used in fan-coil-units, induction units, small reheaters and recoolers and for zone control applications. The absence of endswitches or feedback potentiometer ensures longtime reliability.



Operating temperature:	0 – +60°C (32 – 140°F)
Power consumption:	0.7 VA
Input Voltage:	24 V AC +10... -30% 50/60 Hz
Running time:	150 s at 50 Hz and 120 s at 60 Hz
Stroke:	6.5 mm
Force:	180 N
Enclosure rating:	IP 43

For further specifications, see technical data sheet. www.tac.se/docnet

MZ18A, Three-point Valve Actuator 845-5101-000

MZ18L, Lon Valve Actuator

The LON actuator is targeted for decentralised building structures and gives customers an effective new capability in energy management and product flexibility. The actuator works with standard SNVTs to provide interoperability with controllers based on LonWorks technology. The MZ18L small linear actuator is designed to provide LonMark capabilities together with valve series VZ22, VZ32, VZ42 and are used in fan coil units, induction units, small reheaters, recoolers and for zone control applications. The MZ18L actuator is suitable for controllers based on LonWorks technology. Using standard Echelon configuration tools, the actuator can be configured with job specific settings.



Operating temperature:	±0 – +55°C (32 – 131°F)
Supply voltage:	24 V AC ±20% 50/60 Hz
Power consumption:	1.4 VA
Control signal:	SNVT_lev_percent 0 – 100%
Protocol:	LonTalk
Channel:	TP/FT-10
Running time:	150 s at 50 Hz and 120 s at 60 Hz
Stroke:	6.5 mm
Force:	180 N
Enclosure rating:	IP 42

For further specifications, see technical data sheet. www.tac.se/docnet

MZ18L, Lon Valve Actuator 845-5102-000

Actuators

MZ09B, Three-point Radiator Valve Actuator

The MZ09B actuator is designed to provide three-point control together with radiator valves. The MZ09B actuator is used for radiator valves in fancoil units, induction units, small reheaters and recoolers and for zone control applications. The absence of end switches or feedback potentiometer ensures longtime reliability.



Operating temperature:	0 – +60°C (32 – 140°F)
Power consumption:	0.7 VA
Input Voltage:	24 V AC +10... -30% 50/60 Hz
Running time:	36 s/1.6 mm
Stroke:	1.6 mm
Force:	90 N
Enclosure rating:	IP 43

For further specifications, see technical data sheet. www.tac.se/docnet

MZ09B, three-point Radiator Valve Actuator 845-5111-000

MZ09L, Lon Valve Actuator

The LON actuator is targeted for decentralised building structures and gives customers an effective new capability in energy management and product flexibility. The actuator works with standard SNVTs to provide interoperability with controllers based on LonWorks technology. The MZ09L small linear actuator is designed to provide LonMark capabilities together with radiator valves and is used in fan coil units, induction units, small reheaters, recoolers and for zone control applications. The MZ09L actuator is suitable for controllers based on LonWorks technology. Using standard Echelon configuration tools, the actuator can be configured with job specific settings.



Operating temperature:	±0 – +55°C (32 – 131°F)
Supply voltage:	24 V AC ±20% 50/60 Hz
Power consumption:	1.4 VA
Control signal:	SNVT_lev_percent 0 – 100%
Protocol:	LonTalk
Channel:	TP/FT-10
Running time:	53 s at 50 Hz and 44 s at 60 Hz
Stroke:	2.5 mm
Force:	180 N
Enclosure rating:	IP 42

For further specifications, see technical data sheet. www.tac.se/docnet

MZ09L, Zone Actuator Lon 845-5112-000

Actuators



MZ09T, Thermoelectric Actuator

MZ09T is a thermoelectric actuator designed to provide on/off control together with radiator valves. The actuators are used for radiators, in fan-coil units, induction units, and small reheaters. The actuator operates together with controllers using on/off control signal. The actuators are available in versions with Normally Open (NO) or Normally Closed (NC) functions and for different input voltages.

Type	Input voltage (V AC)	Power (VA)	Initial Consumption (A)	Operating Consumption (A)	Running time (min)
Actuator Zone MZ09T-NO 2.5 mm	24	2	0.2	0.07	5.5
Actuator Zone MZ09T-NC 2.5 mm	24	2	0.2	0.07	5.5
Actuator Zone MZ09T-NO 2.5 mm	230	2	0.25	0.007	5.5
Actuator Zone MZ09T-NC 2.5 mm	230	2	0.25	0.007	5.5

For further specifications, see technical data sheet. www.tac.se/docnet

MZ09T-NO 2.5 mm, Thermoelectric Actuator 24 V	845-4110-010
MZ09T-NC 2.5 mm, Thermoelectric Actuator 24 V	845-4111-010
MZ09T-NO 2.5 mm, Thermoelectric Actuator 230 V	845-4112-000
MZ09T-NC 2.5 mm, Thermoelectric Actuator 230 V	845-4113-000

MZ10T, Thermoelectric Actuator

MZ10T is a thermoelectric actuator designed to provide on/off control together with the VZ22, VZ32 and VZ42 series of valves in sizes DN15. The actuators are used in fan-coil units, induction units, and small reheaters. There are two models with similar properties, but using different input voltages. The actuator operates together with controllers using on/off control signal.



Operating temperature:	max. 50°C (122°F)
Power consumption:	3 VA
Input Voltage:	24 V AC or 230 V AC 50/60 Hz
Initial consumption:	0.6 A at 24 V and 0.3 A at 230 V
Operating consumption:	0.09 A at 24 V and 0.013 A at 230 V
Running time:	up to 5 min
Stroke:	8 mm
Force:	96 N
Enclosure rating:	IP 40 or 43 depending on mounting

For further specifications, see technical data sheet. www.tac.se/docnet

MZ10T-24V, Thermoelectric Actuator 24V	845-4100-000
MZ10T-230V, Thermoelectric Actuator 230V	845-4101-000

Sensors



Sensors

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Sensors

Air Temperature Sensors

EGU, Outdoor Temperature Sensor

The EGU is an outdoor temperature sensor made for outdoor wall mounting. The sensor is supplied as a complete unit, comprising the sensing element, mounted in a housing and a cover which is resistant to ultraviolet light. This outdoor temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Operating temperature:	-40 – +90°C (-40 – 196°F)
Time constant:	12 minutes (0.5 m/s) 20 minutes (0.1 m/s)
Accuracy:	±0.6°C/1.1°F at 25°C/77°F
Dimensions:	Ø120 X 45.5 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGU, Outdoor Temperature Sensor 514-1100-000

DEGU, Outdoor Temperature Transmitter

The outdoor transmitter is an electronic temperature transmitter with a 4–20 mA output signal corresponding to the temperature. The transmitter is intended for mounting and connected over a 2-wire cable.

This outdoor temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Operating temperature:	-30 – +60°C (-22 – 140°F)
Time constant:	approx. 6 minutes (0.5 m/s)
Accuracy:	±0.4°C/0.7°F at 25°C/77°F and UG = 24V DC
Signal output:	4 – 20 mA
Voltage across transmitter:	UG max. 40V DC
Dimensions:	Ø120 X 45.5 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGU, Outdoor Temperature Transmitter 0-069-0040-2



Sensors

EGLF, Air Temperature Sensor, Fan Coil

EGLF is intended for measuring temperature in fan coil applications or exhaust ducts. The sensor, which is made of stainless steel, is delivered with a 2 m overall sheathed PVC cable.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Operating temperature	
Sensor:	-40 – +100°C (-40 – 212°F)
Cable:	-10 – +95°C (14 – 203°F)
Time constant:	max. 25 s (3 m/s)
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Dimensions:	Ø6 X 100 mm
Enclosure rating:	IP 20

For further specifications, see technical data sheet. www.tac.se/docnet

EGLF, Air Temperature Sensor, Fan Coil 511-0030-000

EGL, Air Temperature Sensor, Duct

The EGL is a duct thermistor temperature sensor. The housing is equipped with a dia. 19 mm hole for fitting of a Pr18,6 mm cable gland.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Operating temperature:	-40 – +100°C (-40 – 212°F)
Time constant:	approx. 120 s (1.5 m/s) approx. 100 s (3.0 m/s)
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Dimensions:	See datasheet
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGL, Air Temperature Sensor, Duct 511-1120-000

Sensors

EGXL3, Average Temperature Sensor, Duct

The EGXL3 is an average temperature sensor which contains four thermistors. The sensor is used for measurements in air ducts. It shall be mounted on a grid or on wires suspended across the duct. The sensor is delivered as a complete unit, comprising a junction box and four sensors on a cable at 1 metres intervals. The distance from the first sensor to the junction box is 2 metres.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400.



Operating temperature:	-40 – +100°C (-40 – 212°F)
Time constant:	approx. 120 s (1 m/s)
Accuracy:	±0.7°C/1.3°F at 25°C/77°F
Length of measuring cable:	2 + 3 m
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGXL3, Average Temperature Sensor, Duct 518-4030-000

DEGXL3, Average Temperature Transmitter

DEGXL3 is an electronic average transmitter that converts the average from four temperature sensors into one electric current signal. The transmitter is used for temperature measurement in air ducts. It is intended for mounting on to a grid or on wires suspended across a duct. The transmitter is delivered as a complete unit, including a junction box with amplifier and four sensors on a cable at 1 m intervals. The distance from the first sensor to the junction box is 2 m.

The transmitter shall be connected with a 2-wire cable, which serves both for power and signal transmission.

This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, amplifier:	±0 – +60°C (32 – 122°F)
Time constant:	approx. 120 s at 1 m/s (80 s at 3 m/s)
Signal output:	4 – 20 mA
Accuracy:	±0.4°C/0.7°F (UG=24V DC) at 25°C/77°F
Dimensions sensor:	2 + 3 m
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGXL3, Average Temperature Transmitter (-50 to +50°C) 0-069-0620-2
DEGXL3, Average Temperature Transmitter (±0 to +100°C) 0-069-0623-2

Sensors

DEGRL, Room Temperature Transmitter

DEGRL is an electronic room transmitter that converts a measured temperature into an electric current signal. The transmitter is delivered as a complete unit, comprising a sensing element and an amplifier mounted in a housing. DEGRL is intended either for surface mounting on a wall or installation on a standard junction box (Ø70 mm) in dry, dust-free rooms. The transmitter shall be connected with a 2-wire cable, which serves both for power and signal transmission.

This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, operation:	±0 – +40°C (32 – 104°F)
Time constant:	approx. 7 min
Signal output:	4 – 20 mA
Accuracy:	±0.4°C/0.7°F (UG=24V DC) at 25°C/77°F
Dimensions:	80 X 80 mm
Enclosure rating:	IP 20

For further specifications, see technical data sheet. www.tac.se/docnet

DEGRL, Room Temperature Transmitter 0-069-0001-3

DEGL, Duct Temperature Transmitter

DEGL is an electronic temperature transmitter that converts a measured temperature into an electric current signal. The transmitter is delivered as a complete unit, comprising the polycarbonate plastic immersion well, a sensing element and an amplifier mounted in a housing. The transmitter is intended for immersion installation and is used for temperature measurement in air ducts. The transmitter shall be connected with a 2-wire cable, which serves both for power and signal transmission.

This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, amplifier:	±0 – +60°C (32 – 122°F)
Time constant:	approx. 120 s at 1.5 m/s
Signal output:	4 – 20 mA
Accuracy:	±0.4°C/0.7°F (UG=24V DC) at 25°C/77°F
Dimensions, length in duct:	224 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGL, Duct Temperature Transmitter (-50 to +50°C) 0-069-0020-2
DEGL, Duct Temperature Transmitter (±0 to +100°C) 0-069-0023-2

Sensors

Ground Temperature Sensor

EGXK, Ground Temperature Sensor

The EGXK is made of polythene pipe Ø 3/8" and is primarily intended to be installed below the ground. Four thermistors are evenly applied along the length of the pipe. The sensor is delivered with a two metre connection cable. When installing below the ground surface, the thermistor cable should be placed in a pipe with an inside diameter of min. 12 mm.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +60°C (-40 – 122°F)
Time constant:	depending on ground
Accuracy:	±0.7°C/1.3°F at 25°C/77°F
Dimensions, length:	2, 4, 8 m
Enclosure rating:	IP 67

For further specifications, see technical data sheet. www.tac.se/docnet

EGXK 2, Ground Temperature Sensor	518-2020-000
EGXK 4, Ground Temperature Sensor	518-2040-000
EGXK 8, Ground Temperature Sensor	518-2080-000

Water Temperature Sensors

EGA, Strap-on Temperature Sensor

The EGA is designed for surface pipe mounting. To ensure good thermal transmission to the copper plate and the thermistor, the EGA must be mounted on an unisolated pipe section. Electrical installation: Ø 19 hole for conduit entry Pr. 18.6.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant:	approx. 60 s
Accuracy:	±0.6°C/1.1°F at 25°C/77°F
Dimensions connection box:	65 X 62.5 X 40 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGA, Strap-on Water Temperature Sensor	513-1100-000
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Sensors

EGK, Water Temperature Sensor

EGK is designed for immersion mounting in pipe systems without a separate well. The sensor is provided in a length of either 300 or 400 mm.

The immersion tube is made of copper (Cu). The sensor has a R1/2" (DN 15) male thread connection. The housing is equipped with a dia. 19 mm hole for fitting of a Pr. 18,6 mm cable gland.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant:	approx. 20 s
Accuracy:	±0.7°C/1.3°F at 25°C/77°F
Pressure rating:	PN 10
Dimensions:	300 or 400 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGK 300, Water Temperature Sensor	512-1440-000
EGK 400, Water Temperature Sensor	512-1450-000

EGWW, Immersion Temperature Sensor

EGWW is designed for immersion mounting in pipe systems without a separate well.

The immersion tube is made of copper (Cu) or acidresistant steel (St). EGWW contains two thermistors. One is intended for control purposes, the other is typically used for limitation functions. The sensor has a R1/2" (DN 15) male thread connection. The housing is equipped with a dia. 19 mm hole for fitting of a Pr. 18,6 mm cable gland.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant copper:	approx. 20 s
Time constant steel:	approx. 60s
Accuracy:	±0.7°C/1.3°F at 25°C/77°F
Pressure rating copper:	PN 10
Pressure rating steel:	PN 16
Immersion length:	120 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGWW 120 Cu, Water Temperature Sensor, Copper	512-2720-000
EGWW 120 St, Water Temperature Sensor, Steel	512-2720-010

Sensors

EGWS, Water Temperature Sensor

EGWS is designed for mounting in pipe systems without a separate pocket. The insert pipe is stainless steel. The sensor has a R1/2" (DN 15) male thread connection. Electrical installation: Ø 19 hole for conduit entry Pr 18,6.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant:	approx. 1.5 s
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Dimensions, length:	70, 120, 220 mm, Ø 3 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGWS 70, Water Temperature Sensor	512-2770-020
EGWS 120, Water Temperature Sensor	512-2770-010
EGWS 220, Water Temperature Sensor	512-2770-030

EGX2, Water Temperature Sensor

EGX2 is primarily intended for pipe mounting without a separate pocket in heating coils. The insert pipe is stainless steel. The sensor is delivered with a 2 m connection cable, and has a R1/4" (DN 8) male thread connection. As standard the sensor is delivered with a separate R1/2" (DN 15) male thread reducing bushing.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +100°C (-40 – 212°F)
Time constant:	approx. 1.5 s
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Dimensions, length:	250, 400 mm, Ø 3 mm
Enclosure rating:	IP 67

For further specifications, see technical data sheet. www.tac.se/docnet

EGX2 250, Water Temperature Sensor	512-1500-010
EGX2 400, Water Temperature Sensor	512-1501-010

Sensors

EGWP, Water Temperature Sensor

EGWP is designed for pocket mounting in pipe systems. The temperature sensor has a very short time constant. The immersion tube (pocket) is closed in the bottom, making it easy to replace the sensor, if necessary. The sensor has a R1/2" (DN 15) male thread connection. The housing is equipped with a dia. 9 mm hole for fitting of a Pr 9 mm (0.35") cable gland.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant:	approx. 5 s
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Pressure rating:	PN 25
Dimensions:	85 or 120 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

EGWP 85, Water Temperature Sensor	512-2780-000
EGWP 120, Water Temperature Sensor	512-2781-000
EGWP 85, Pocket	512-9980-000
EGWP 120, Pocket	512-9981-000

EGXP 2000, Immersion Temperature Sensor

The sensor, which is made of stainless steel, is delivered with a 2 m cable PVC sheathed overall. EGXP 2000 is intended for measuring water temperature in heating applications, mounted in a well.

This temperature sensor can be used with TAC Xenta 280 / 300 / 400, TAC Xenta 100s (excl. TAC Xenta 102 AX).



Ambient operation temperature:	-40 – +120°C (-40 – 248°F)
Time constant:	approx. 6 s in stirred water
Accuracy:	±0.3°C/0.5°F at 25°C/77°F
Dimensions, length sensor:	50 mm
Dimensions, length cable:	2 m
Enclosure rating:	IP 67

For further specifications, see technical data sheet. www.tac.se/docnet

EGXP 2000, Immersion Temperature Sensor	512-0310-010
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Sensors

DEGA, Strap-on Temperature Transmitter

DEGA is an electronic strap-on temperature transmitter that converts the temperature measured into an electric current signal. The transmitter is delivered as a complete unit, comprising a pipe clamp, the sensing element and an amplifier, mounted in a housing. The transmitter is available in two versions. For the lower temperature range, the sensor and amplifier are mounted together in an encapsulated unit. For the higher temperature range the sensor and amplifier are encapsulated in separate units, to protect the electronics from excessive heat. A 2 m cable connects the two units. The transmitter is intended for external mounting directly on pipes, e.g. flow and return hot water pipes. The transmitter is connected with a 2-wire cable, which serves both for power and signal transmission. This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, amplifier:	$\pm 0 - + 60^{\circ}\text{C}$ (32 – 140°F)
Signal output:	4 – 20 mA
Time constant:	approx. 60 s
Accuracy:	$\pm 0.4^{\circ}\text{C}/0.7^{\circ}\text{F}$ at 25°C/77°F
Dimensions, length:	80 X 80 and 63 X 65 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGA -50 - +50°C, Strap-on Temperature Transmitter0-069-0080-2
DEGA 0 - +100°C, Strap-on Temperature Transmitter0-069-0543-2
DEGA 0 - +160°C, Strap-on Temperature Transmitter0-069-1544-0
DEGA 0 - +100°C, Strap-on Temperature Transmitter0-069-0563-2

DEGW-Copper, Immersion Temperature Transmitter

DEGW is an electronic immersion temperature transmitter that converts a measured temperature into an electric current signal. The transmitter is delivered as a complete unit, comprising a sensing element placed in an nickel plated copper well and an amplifier mounted in a housing. The transmitter is intended for use in high and low temperature heating systems and in non-corrosive liquids. A special model is available for use in heating coils, where the immersion well and the housing are interconnected by a 2 metre cable. The transmitter is connected with a 2-wire cable, which serves both for power and signal transmission. This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, amplifier:	$\pm 0 - + 60^{\circ}\text{C}$ (32 – 140°F)
Range:	0 – 100°C (32 – 212°F)
Signal output:	4 – 20 mA
Time constant:	approx. 10 s
Accuracy:	$\pm 0.4^{\circ}\text{C}/0.7^{\circ}\text{F}$ at 25°C/77°F
Pressure rating:	PN 10
Dimensions, immersion well:	70, 120, 220, 250 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGW-Copper 70, Immersion Temperature Transmitter0-069-0103-2
DEGW-Copper 120, Immersion Temperature Transmitter0-069-0123-2
DEGW-Copper 220, Immersion Temperature Transmitter0-069-0143-2
DEGW-Copper 250, Immersion Temperature Transmitter0-069-0523-2

Sensors

DEGW-Steel, Immersion Temperature Transmitter

DEGW is an electronic immersion temperature transmitter that converts a measured temperature into an electric current signal. The transmitter is delivered as a complete unit, comprising a sensing element placed in a stainless steel immersion well and an amplifier mounted in a housing. The transmitter is intended for use in high and low temperature heating systems and in corrosive liquids. The transmitter is connected with a 2-wire cable, which serves both for power and signal transmission.

This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient temperature, amplifier:	±0 – + 60°C (32 – 140°F)
Signal output:	4 – 20 mA
Time constant:	approx. 20 s
Accuracy:	±0.4°C/0.7°F at 25°C/77°F
Pressure rating:	PN 16
Dimensions, immersion well:	120 and 220 mm
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGW-Steel 120, -50 - +50°C, Immersion Temperature Transmitter	0-069-0160-2
DEGW-Steel 120, 0 - +100°C, Immersion Temperature Transmitter	0-069-0163-2
DEGW-Steel 120, 0 - +160°C, Immersion Temperature Transmitter	0-069-1164-0
DEGW-Steel 220, 0 - +100°C, Immersion Temperature Transmitter	0-069-0183-2

Humidity Sensors

DIGHRL, DUGHRL, Room Humidity Transmitter

DIGHRL/DUGHRL is an active sensor, in two different models, which measures the relative humidity (RH) and converts the measurement into an electric current (4–20 mA) or a voltage level. The latter can be configured for an output of either 0–10 V or 0–1 V. The transmitter consists of a sensor and an amplifier, mounted together in a housing. DIGHRL/DUGHRL is designed to be mounted either directly on the wall or on a standard junction box. The actual sensor is the interchangeable Vaisala INTERCAP® capacitive humidity sensor with an excellent long-term stability. The sensor has negligible hysteresis and it is insensitive to dust as well as most chemicals. This temperature transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient operation temperature:	-5 – +55°C (23 – 131°F)
Time constant:	approx. 15 s
Accuracy:	±3% RH at 20°C/68°F
Measuring range:	10 – 90%
Dimensions:	80 X 80 mm
Enclosure rating:	IP 20

For further specifications, see technical data sheet. www.tac.se/docnet

DIGHRL, Room Humidity Transmitter, Current output	0-069-0202-0
DUGHRL, Room Humidity Transmitter, Voltage output	0-069-0203-0

Sensors

DIGHL, DUGHL, Duct Humidity Transmitter

DIGHL/DUGHL is an active sensor, in two different models, which measures the relative humidity (RH) and converts the measurement into an electric current (4–20mA) or a voltage level. The latter can be configured for an output of either 0–10 V or 0–1 V. The transmitter is delivered as a complete unit, comprising a polycarbonate mounting bracket with the sensing element, and an amplifier mounted in a separate housing. DIGHL/DUGHL is intended for immersion installation and is used for relative humidity measurement in air ducts. The actual sensor is the interchangeable Vaisala INTERCAP® capacitive humidity sensor with an excellent long-term stability. This humidity transmitter can be used with TAC Xenta 280 / 300 / 400.



Ambient operation temperature:	-10 – +60°C (14 – 140°F)
Time constant:	approx. 15 s
Accuracy:	± 3% at 20°C/68°F
Measuring range:	10 – 90% RH
Dimensions:	80 X 80 mm
Enclosure rating:	IP 65

For further specifications, see technical data sheet. www.tac.se/docnet

DIGHL, Duct Humidity Transmitter, Current	0-069-0222-0
DUGHL, Duct Humidity Transmitter, Voltage	0-069-0223-0

GV, Air Flow Sensor

The GV sensor is intended for direct in-duct installation primarily in VAV boxes. It measures the air velocity across the cross-section of the duct, which produces a very high accuracy of measurement. An output signal is then transferred to the measurement chamber in the VAV controller. The GV sensor measures the average value of the air velocity. The GV can be used in all types of ducts, in existing as well as new VAV installations. It is designed in two parts, a bracket and a tube, for simplified installation without special tools. It can be delivered for a large number of duct dimensions.



Ambient temperature, amplifier:	±0 – + 60°C (32 – 140°F)
Temperature range:	0 – 100°C (32 – 212°F)
Measuring range:	1 – 16 m/s

For further specifications, see technical data sheet. www.tac.se/docnet

GV, Air Flow Sensor, Duct 63 mm	551-5010-063
GV, Air Flow Sensor, Duct 80 mm	551-5010-080
GV, Air Flow Sensor, Duct 100 mm	551-5010-100
GV, Air Flow Sensor, Duct 125 mm	551-5010-125
GV, Air Flow Sensor, Duct 160 mm	551-5010-160
GV, Air Flow Sensor, Duct 200 mm	551-5010-200
GV, Air Flow Sensor, Duct 250 mm	551-5010-250
GV, Air Flow Sensor, Duct 315 mm	551-5010-315
GV, Air Flow Sensor, Duct 400 mm	551-5010-400

Sensors

DEGB, Outdoor/Indoor Lux Transmitter

DEGB is an electronic light transmitter that converts a lux measurement into an electric current signal. It has two sensitivity ranges configurable by a jumper to suit different light levels: 0–400 lx (e.g. for controlling outdoor lighting) and 0–20 klx (for controlling sun protection systems). The transmitter is delivered as a complete unit, comprising the sensing element, an amplifier mounted in a housing and a cover which is resistant to ultra-violet light. The transmitter is intended for wall mounting, indoors or outdoors. The sensitivity peak is for light at an angle of incidence of 0° to the perpendicular. The sensor has the same spectrum sensitivity peak as the human eye. The transmitter is connected with a 2-wire cable, which serves both for power and signal transmission.



This lux transmitter can be used with TAC Xenta 280 / 300 / 400.

Ambient temperature:	-30 – +50°C (-22 – 122°F)
Signal output:	4 – 20 mA
Range:	0 – 400 lux or 0 – 20 klux
Accuracy:	±5%
Max. sensitivity wavelength:	565 nm
Dimensions:	Ø 120
Enclosure rating:	IP 54

For further specifications, see technical data sheet. www.tac.se/docnet

DEGB, Outdoor/Indoor Lux Transmitter 0-069-0302-0

Sensors

Wall Modules

STR100 – 107, Wall Modules

The STR is a series of wall modules optimised for public facilities such as office buildings, hotels and hospitals. STR wall modules are mounted directly onto the wall or onto a junction box. The STR101 through STR107 are equipped with a modular jack (RJ-10) that allows the wall module to be connected to the portable TAC Xenta OP (Operator Panel). The STR101 through STR107 can be used together with the TAC Xenta 100, 280, 300 and 400 series of controllers. The wall modules are equipped differently; the STR100 is the basic model, while the STR106 and 107 are fully equipped. See table below.



	Temp Sensor	Mode Indicator	Setpoint Offset	Bypass Button	Fan Speed Control A-0-I-II-III	Fan Speed Control A-Off-On
STR100	●					
STR101	●	●				
STR102	●	●	●			
STR103	●	●		●		
STR104	●	●	●	●		
STR106	●	●	●	●	●	
STR107	●	●	●	●		●

Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	TAC-thermistor, 1800 ohm at 25°C
Accuracy:	±0.35°C/0.6°F
SP-Potentiometer:	10 kohm
Fan switch:	3/5-step, 30 VAC at max 0.75 A via controller
Wiring:	Twisted pair, unshielded
Enclosure rating:	IP 20 / NEMA1
TAC Xenta OP contact:	Modular plug 4/4

For further specifications, see technical data sheet. www.tac.se/docnet

STR100, Wall Module	0-046-0010-0
STR100-W (White), Wall Module	0-046-0011-0
STR101, Wall Module	0-046-0020-0
STR102, Wall Module	0-046-0030-0
STR103, Wall Module	0-046-0070-0
STR104, Wall Module	0-046-0040-0
STR106, Wall Module	0-046-0050-0
STR107, Wall Module	0-046-0060-0

Sensors

STR150, Wall Module

The STR150 is a wall module optimised for public facilities such as office buildings, hotels and hospitals. It's attractive appearance and well-designed interface make the wall module suitable for any contemporary building. The wall module is easy to operate and install. STR wall modules are mounted directly onto the wall or onto a junction box. The STR150 is equipped with an LCD that displays the different functions of the module. The STR150 is designed to be used together with: TAC Xenta 101-VF, 102-ES, 103-A and 104-A with SW-version 1.2 or later.



Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	Thermistor, 10 kohm at 25°C
Accuracy:	±0.5°C/0.9°F
SP-Potentiometer:	10 kohm
Fan switch:	3-step, 30 VAC at max 0,75 A via controller
Dimensions:	120 X 80 X 28 mm
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR150, Wall Module 0-046-0280-0

STR200, 202, Wall Modules

The STR is a series of wall modules optimised for public facilities such as office buildings, hotels and hospitals. Their attractive appearance and well-designed interface make them suitable for any contemporary building. They are easy to operate and install. STR wall modules are mounted directly onto the wall or onto a junction box. The STR200 and STR202 are equipped with a 3-pole stereo-jack to allow connection to the M/STAT unit. The STR200 is equipped with a temperature sensor, while the STR202 also features a bypass button and a setpoint offset wheel.



Sensor:	10 kohm, thermistor
Accuracy:	±0.30°C/0.55°F
SP-Potentiometer:	10 kohm
Dimensions:	120 X 80 X 28 mm
M/STAT connection:	3-pole stereo jack
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR200, Wall Module 0-046-0300-0
STR200-W, White, Wall Module 0-046-0301-0
STR202, Wall Module 0-046-0320-0

Sensors

STR250, Wall Module

The STR250 is a wall module optimised for public facilities such as office buildings, hotels and hospitals. Its attractive appearance and well-designed interface make it suitable for any contemporary building. It is easy to operate and install. STR250 wall module is mounted directly onto the wall or onto a variety of back-boxes/J-Boxes. The plug-in concept makes wiring quick and easy. The STR250 replaces the I/STAT LCD with regard to major functionality such as indoor and outdoor temperature indication, setpoint adjustment, bypass mode and fan speed commands.



Operation temperature:	±0°C to +50°C (32 to 120°F)
Sensor:	10 kohm, thermistor
Accuracy:	±0,6°C/1°F
Power Requirements:	12 V DC, supplied from controller
Data communication:	Serial Proprietary
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR250, Wall Module 0-046-0330-0

TAC STR 350

The STR 350/351 uses LonWorks communication to display and control the room temperature and fan speed. Optionally, one lamp group and/or one sunblind group can be controlled. The STR 350/351 can also be used in TAC Vista Classic configurations, that is, without the need for a separate binding tool. Both models, STR 350 and STR351, have an extra analog input that can be connected to a CO₂, relative humidity or occupancy sensor. The STR 350/351 is equipped with an LCD display (STR351 with backlight) that displays the different functions of the module. STR wall modules are mounted directly on the wall or onto a backbox.



Operating temperature:	0 to +50°C (32 to 122°F) max 90% RH
Temperature range	
Detection and display:	5 to +45°C (41 to 113°F)
Accuracy:	±0.6°C/1°F
Setpoint value	
Range:	10 to +35°C (50 to 95°F)
Span:	±0 to ±10°C (±0 to ±20°F)
Auxiliary analog input for either CO ₂ or RH-level	
Range:	0-10 V (default 0-2000 ppm)
Accuracy :	±2% of full scale
Power requirements:	24 VAC ±20%, 50/60 hz
Data communication:	LonWorks, TP/FT-10
Enclosure rating:	IP 20 / NEMA1

For further specifications, see technical data sheet. www.tac.se/docnet

STR 350 0-046-0500-0
 STR 351 with backlight 0-046-0510-0



Sensors

EGF1, Room Thermostat

EGF1 is a thermistor-type room thermostat, intended for wall-mounting in a position where air can circulate freely. EGF1 is primarily intended for small heating control installations. The room temperature setpoint is continuously adjustable between 10–30 °C.



Operating temperature:	-40 – +60°C (-40 – +140°F)
Time constant:	approx. 5 minutes
Accuracy:	±0,6°C/1°F at 25°C/77°F
Enclosure rating:	IP 31

For further specifications, see technical data sheet. www.tac.se/docnet

EGF1, Room Thermostat 521-1010-010