

The Scalable Building Management System

Satchwell MicroNet



Make the most of your energy



Buildings account
for 40% of the energy
used in the world's
leading economies



Satchwell MicroNet

Building users – companies, governments, owners, tenants – are increasingly concerned about the direct cost and security of their energy supplies, and the impact of their emissions on the planet.

Investment in a Satchwell MicroNet control system is a fast track to energy savings – without sacrificing comfort. MicroNet can provide the data and the tools to achieve major improvements in your organisation's energy efficiency.

Our Common Goal

End-users demand more comfort, energy costs are soaring, your budget is shrinking and you need to do the right thing for the environment. If this sounds like a familiar challenge, we can help.

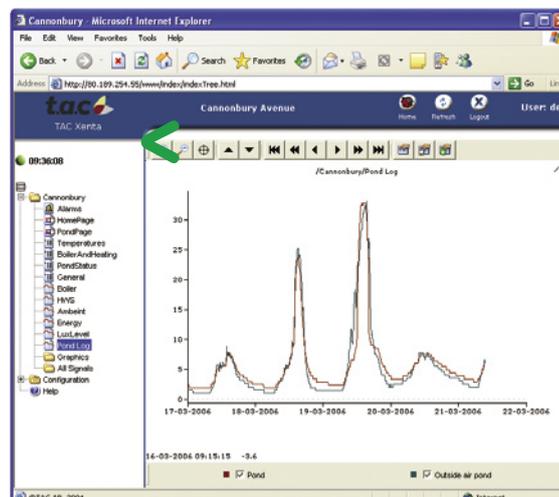
For more than 80 years, we have been helping customers around the world address the business, environmental and regulatory issues that drive their need for energy efficiency.

Why TAC

TAC is the fastest-growing, most innovative company in the building automation industry today. We are at the forefront of growth because we deliver what our customers want, year after year, building after building. Building owners and facility managers worldwide trust TAC for automated building management systems that create a safe, comfortable, economical and secure environment.

Why MicroNet

Satchwell MicroNet is a highly scalable and modular building management system ideally suited for small to medium sized buildings. The MicroNet platform can also grow into a fully integrated system through complementary access control, security, fire and smoke control solutions from TAC.



MicroNet is available through a worldwide network of certified MicroNet Partners, ideally placed to ensure their local customers gain the maximum benefit from their investments in MicroNet solutions.



MicroNet gives you the tools and the facts, so you can make informed decisions, and act.

Using energy efficiently reduces your costs, and limits the cost to the environment.

That is a fact.



Effective controls
lower costs and
improve comfort

Satchwell MicroNet

Proven Control Strategies

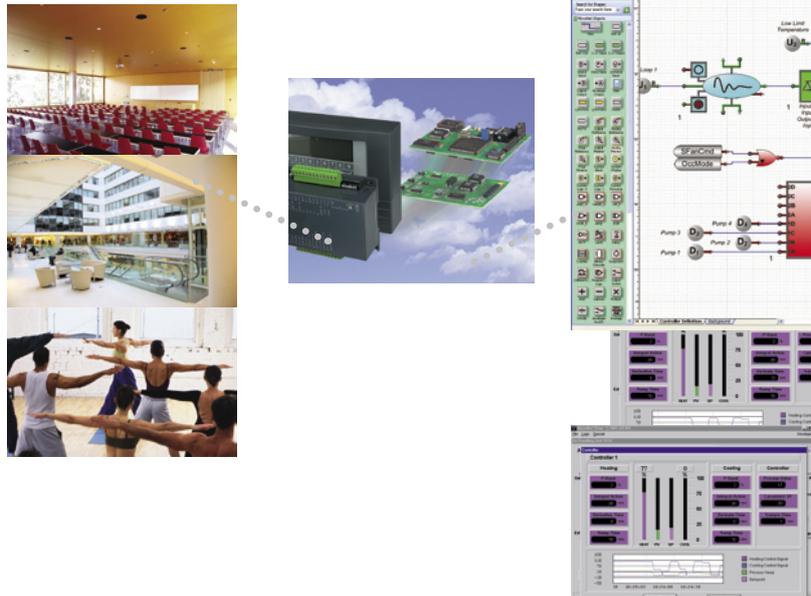
Many building controls are too complex, and as a result are rarely used to their full potential. MicroNet keeps control simple and makes it effective. All MicroNet controllers incorporate a standard library of proven energy-saving control strategies, for all types of buildings

Efficiency Where It Counts

MicroNet controllers help you reduce your operating costs, and adapt to your changing needs. Savings are achieved right at the controller level, where it counts.

MicroNet controllers incorporate energy-efficient controls for fan coil units, chilled ceilings, electric heaters, hot water services, boilers, air handling units, district heating, zone heating, cooling systems etc.

With MicroNet, you pay only for what you need, when you need it.



Family of Flexible Controllers

To accurately meet your building's needs, the MicroNet family includes four types of programmable controllers, each available with communication and display options.

	MN 350	MN 450	MN 550	MN 650
I/Os*	15	15	22	32
Local Display Options	Interactive MicroNet sensors, MN-LCD or MN-TS (Touch Screen)			
Communications	NCP, ARCNET or LON			
* I/Os: Physical Inputs & Outputs				



Typical Applications

- Local authorities
- Healthcare
- Schools
- Warehouses
- Hotels
- Retail outlets
- Pubs
- Clubs
- Leisure centres
- Office buildings



Simple, Comprehensive Tools

Standard control strategies can be easily fine-tuned to meet specific building requirements, using simple, proven, intuitive tools.

The MicroNet engineering tools are also used to create applications, to set up the content of the local user interfaces, to configure the network and to produce wiring diagrams.

Whatever your needs, you can be confident that MicroNet will closely match the requirements of your facilities and operations.



The right level of user interaction, where you need it

Satchwell Micronet

Extensive Choice of User Interfaces

MicroNet user interfaces range from interactive sensors, to menu-driven LCD screens and graphical touch screens, through to web-based solutions and fully featured graphical workstations.

They can be positioned next to the plant items, close to the users or at remote locations, offering specific, customised levels of interaction.



Typical MicroNet Touch Screen display MICRONET TOUCH SCREEN

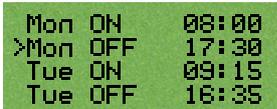


Fully programmable, graphical display with touch-sensitive screen, mounted directly on an MN550 or MN650 controller, or wall/panel mounted.



Typical MicroNet LCD display

MicroNet LCD Display - Programmable text menu display, providing 4 lines of 16 characters, mounted directly on an MN550 or MN650 controller, or wall/panel mounted.



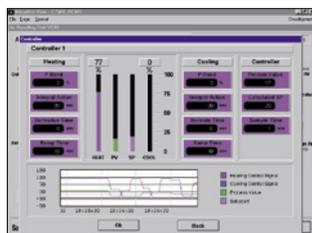
Micronet View
MicroNet View is an optional graphical user interface, suited to larger sites where advanced central monitoring and reporting are required.

- InTouch® based
- Active Graphics
- Dynamic and Historical Trends
- Flexible Scheduling
- Comprehensive alarm handling
- Detailed reporting and analysis
- Fine Tuning Performance

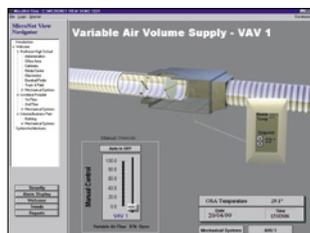


Typical MicroNet S-Link display

MicroNet S-Link Interactive Sensors
Graphic driven LCD display providing zone information plus set point and fan speed adjustment (depending on the model chosen).



Plant fine tune



3D active graphics



The most powerful and
flexible web interface
on the market

Satchwell MicroNet

MicroNet Over the Web - The Ultimate Solution for the MicroNet Users

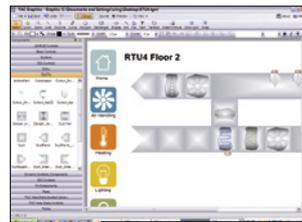
TAC Xenta™ 555 & 731 embedded web servers bring the power of web connectivity to MicroNet, providing secure access to local and remote users – via a simple web browser – over an intranet or across the Internet.

Xenta 555 & 731 are complete graphical user interfaces in their own right, delivering both standard and customised web pages. They are fully compatible with current and legacy MicroNet and Satchnet controllers.

Xenta 555 & Xenta 731 support LON, ARCNET, MicroNet NCP and Satchnet SNP networks. The Xenta 731 also supports Modbus and TAC I/Net networks. Both act in addition as portals to TAC Vista, giving MicroNet users the option of a fully integrated BMS solution for HVAC, security, access control, CCTV, and other networked building services.

MICRONET WEB PAGES

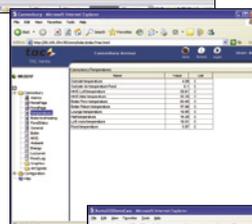
The MicroNet web solution offers all this and more:



Great Graphics

Get a rich and dynamic graphical presentation of your building and facilities via customised web pages, anytime, anywhere.

Authorised users can change values and acknowledge alarms.



Status Viewer

Get a tabular presentation of pre-selected objects, with real time data.

Authorised users can change values and status.



Schedule Viewer

Get a graphical presentation of Time & Holiday schedules, including Optimiser schedules.

Authorised users can edit the schedules.



TREND VIEWER

Get a graphical presentation of logged data. Meter readings can be displayed as bar graphs or in tabular format.

Authorised users can start, stop and clear trend logs remotely.



- Amazing live graphics
- IT-friendly
- Alarm & event monitoring
- Adds web connectivity to legacy sites
- Alarm notification via email
- Energy logs
- Time scheduling
- Trend logging
- Remote configuration

/ACME_Building/Alarms				
	Status	Count	Priority	Date and Time
1	Alarm	1	3	2005-02-16 11:1
2	✓	1	3	2005-01-17 13:5
3	✓	1	2	2005-01-17 13:5
4	✓	1	2	2005-01-17 13:5
5	✓	1	3	2005-01-17 13:5
6	✓	1	3	2005-01-17 13:5
7	Alarm	3	3	2005-02-16 11:2
8	Alarm	1	9	2005-02-15 08:1
9	Alarm	1	9	2005-02-15 08:1

ALARM VIEWER

Receive alarms via email and acknowledge them. Review alarm status or history.

Identify and deal with unexpected events before they become problems.

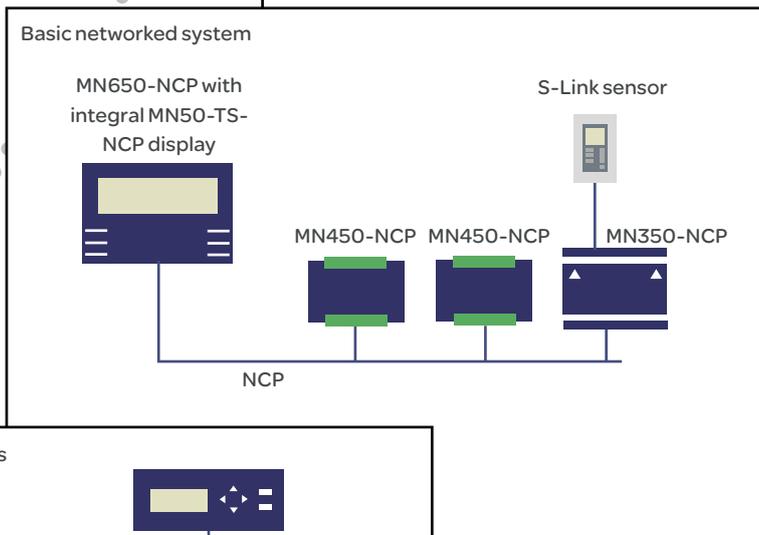
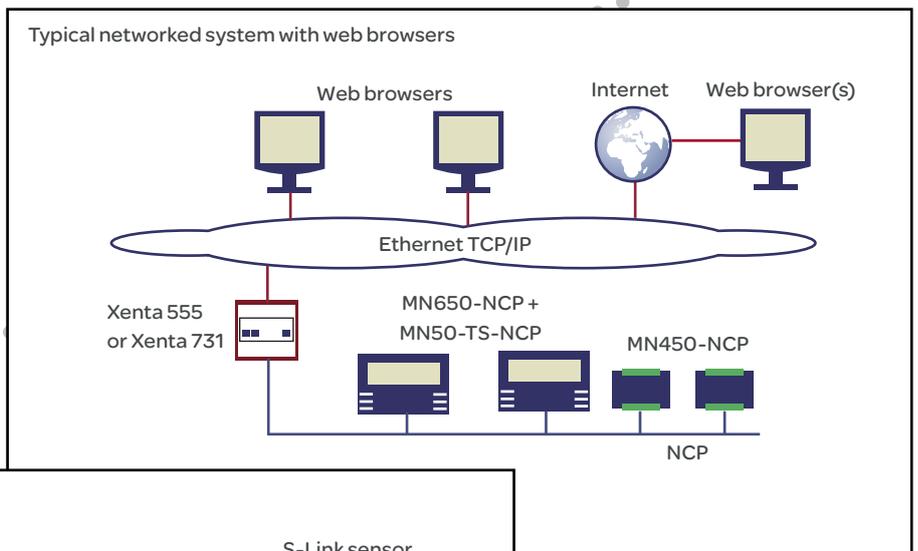
Flexible Topologies Offer You More Choice

Scalable Platform

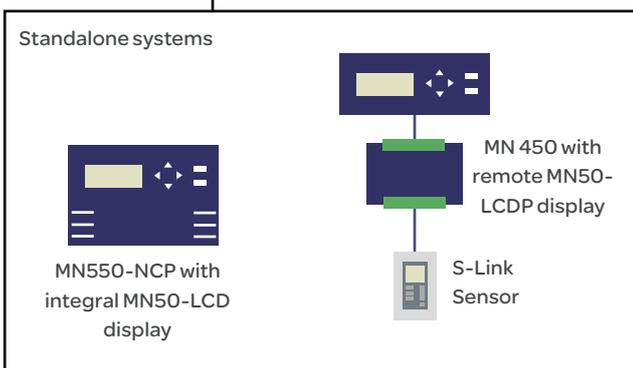
From standalone controllers to fully integrated solutions, MicroNet provides freedom of choice and technologies. MicroNet controllers are available in NCP, ARCNET and LON versions, each providing specific performance and benefits:

- NCP (Native Communication Protocol) is a cost-effective protocol used for standalone and network operation. NCP runs at 9.6 Kbps over a single twisted pair cable.
- ARCNET® is a high-speed token-passing standard communication protocol, ideally suited for solutions which require peer-to-peer communications between controllers. MicroNet supports 156 Kbps ARCNET, over a single twisted pair cable.
- LON (LONWORKS®) is a peer-to-peer communication protocol enabling any manufacturer's LONMARK® compliant devices to share control and management information across a free topology network. MicroNet supports FTT10A free topology at 78 Kbps.

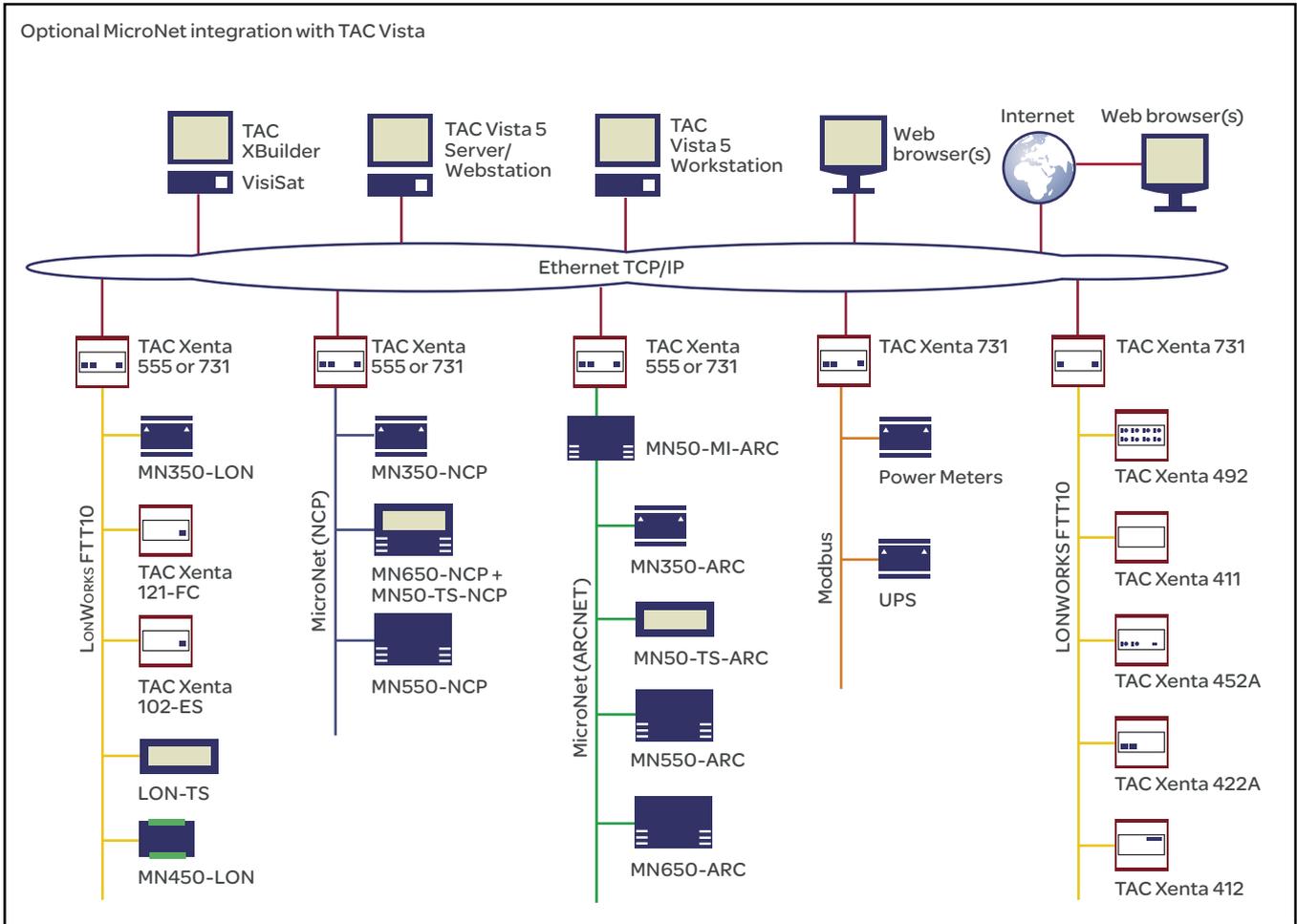
A MicroNet network can be local, regional, national or worldwide. Xenta 555 and Xenta 731 Web Servers provide access to MicroNet devices wherever you are, whenever you want, via a standard web browser. No special software is required.



Ideally suited for single building controls, MicroNet user interfaces provide text or graphical displays of your plant, without requiring a PC head-end.



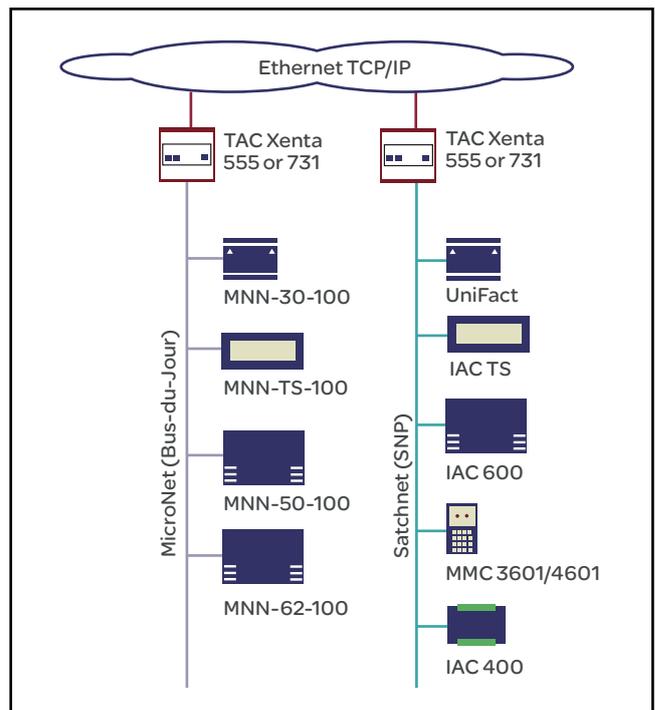
Standalone control with integral or remote user interface. Provides local displays and overrides, alarms and logs.



TAC Xenta 555 and 731 each offer the option of seamlessly interconnecting MicroNet networks to the powerful TAC Vista integrated BMS and Security platform.

TAC Vista is based on a totally open architecture. Full integration of environmental controls, as well as facility and energy management in a single software package, allow TAC Vista to be customised for any building and security management application.

By merging communications, data collection, information sharing and networking into a single, interoperable system, TAC Vista creates efficient, economical building control solutions, regardless of the building size, the number of buildings or the distance between buildings.



BACKWARD COMPATIBILITY

TAC Xenta 555 and Xenta 731 are compatible with current and legacy MicroNet and Satchnet networks, routers and controllers, including SNP, NCP, ARCNET and LON based products.



By bringing together all building services, the Xenta 555 and Xenta 731 provide unique and cost-effective web-based solutions for new and existing installations

	50 Series Controllers				User Interfaces		
							
	MN 350 Programmable controllers	MN 450 Programmable controllers	MN 550 Programmable controllers	MN 650 Programmable controllers	MN S-Link Smart room sensors	MN LCD LCD displays	MN TS Touch Screen displays
	MN350-NCP NCP controller MN350-ARC ARCNET controller MN350-LON LON controller	MN450-NCP NCP controller MN450-ARC ARCNET controller MN450-LON LON controller	MN550-NCP NCP controller MN550-ARC ARCNET controller MN550-LON LON controller MN650-XCOM NPC controller with auxiliary comms for LAN + LCD	MN650-NCP NCP controller MN650-ARC ARCNET controller MN650-LON LON controller MN650-XCOM NPC controller with auxiliary comms for LAN + LCD	MN-S1 Sensor only MN-S2 Sensor with override MN-S3 Sensor with override and set point adjust MN-S4 Sensor with override, set point adjust and mode functions MN-S5 Sensor with override, set point adjust, mode functions and emergency heat key/display	MN-50-LCD ^(3,4) Integral/Wall mounting MN-50-LCDP ⁽³⁾ Panel mounting	MN50-TS-NCP Integral/Wall mounting. NCP comms MN50-TSP-NCP Panel mounting, NCP comms MN50-TS-ARC Integral/Wall mounting. ARCNET comms MN50-TSP-ARC Panel mounting. ARCNET comms MN50-TS-LON Integral/Wall mounting. LonWorks comms MN50-TSP-LON Panel mounting. LonWorks comms
I/O	15	15	22	32			
DI	–	–	2 (10 Hz pulse)	8			
UI	8 0-10 kΩ 0-10 Vdc 0-20 mA Digital	6 0-10 kΩ 0-10 Vdc 0-20 mA Digital	10 0-10 kΩ 0-10 Vdc 0-20 mA Digital	12 0-10 kΩ 0-10 Vdc 0-20 mA Digital			
Triac	4 24 Vac/18 VA, 230 Vac/6 VA	6 24 Vac/18 VA	–	8 24 Vac/1 A			
Relay	3 230 Vac/10 A NO or 3 A NC resistive	–	6 230 Vac/ 5 A resistive	–			
AO	–	3 0-10 Vdc	4 0-10 Vdc	4 0-10 Vdc			
Auxiliary Power	Source supply for sensors 15 Vdc	Source supply for sensors 15 Vdc	Source supply for sensors 15 Vdc	Source supply for sensors 15 Vdc			
HMI	Remote MN TS or MN LCD ⁽³⁾ , MN S-Link, MicroNet View, Xenta 555, Xenta 731 or TAC Vista	Remote MN TS or MN LCD ⁽³⁾ , MN S-Link, MicroNet View, Xenta 555, Xenta 731 or TAC Vista	Remote MN TS or MN LCD ⁽³⁾ , MN S-Link, MicroNet View, Xenta 555, Xenta 731 or TAC Vista	Remote MN TS or MN LCD ⁽³⁾ , MN S-Link, MicroNet View, Xenta 555, Xenta 731 or TAC Vista	Buttons, LED status and LCD symbols (depending on model)	4x16 characters back-lit LCD display	Graphical back-lit LCD display
Clock	Yes ⁽¹⁾	Yes ⁽¹⁾	Yes ⁽¹⁾	Yes ⁽¹⁾		Yes ⁽²⁾	Yes
Comms	RS485 NCP, ARCNET or LON FTT10	RS485 NCP, ARCNET or LON FTT10	RS485 NCP, ARCNET or LON FTT10	RS485 NCP, ARCNET or LON FTT10	S-Link	Point-to-point	RS485 NCP, ARCNET or LON FTT10
Supply	24 Vac or 230 Vac	24 Vac	24 Vac	24Vac	–	24 Vac	24 Vac

(1) Time is obtained from the network. An optional real-time clock board (MN50-RTC) is available for stand-alone operation.

(2) Configurable as timekeeper in stand-alone mode. Interrogation of the controller clock in networked mode.

(3) Only stand-alone operation when used with MN350 or MN450.

(4) MN DK - Wall mounting kit for Touch Screen and LCD screen.

KEY			
I/O	Physical Inputs and Outputs	AI	Analog Input
DI	Digital Input	HMI	Human Machine Interface
UI	Universal Input	NCP	Native Control Protocol
AO	Analog Output	SNP	Satchwell Network Protocol



The most powerful
and flexible web
interface on the market

Networking				LON Controllers		
						
MN MI Network interface/router	Xenta 555 Embedded web server	Xenta 731 Embedded web server	MN 50/100/110/130/150/200 controllers	Xenta application specific controllers	Xenta freely programmable controllers	Xenta I/O modules
MN50-MI-NCP NCP Network interface	0-073-0825-0 Xenta 555 Controller	0-073-0165-0 Xenta 731 Controller	Fan Coil profile MNL-5RF2 MNL-10RF2 MNL-11RF2 MNL-13RF2 MNL-15RF2 MNL-20RF2	TAC Xenta 102-ES VAV controller with integral air flow sensor	TAC Xenta 281 Fixed I/Os	TAC Xenta 411 10 DI
MN50-MI-ARC ARCNET Network interface	0-073-0902-0 Terminal block	0-073-0902-0 Terminal block	MNL-10RH2 MNL-15RH2 MNL-20RH2	TAC Xenta 102-AX VAV controller with integral air flow sensor and built-in damper actuator	TAC Xenta 282 Fixed I/Os	TAC Xenta 412 10 DI with LEDs
MN50-MI-RTR ARCNET router/repeater	Supported range: + MN50 Series + TAC Xenta + ARCNET + NCP + SNP	Supported range: + MN50 Series + TAC Xenta + LONMARK® + ARCNET + NCP + SNP + I/Net + Modbus	Heat Pump profile MNL-5RH2 MNL-10RH2 MNL-15RH2 MNL-20RH2	TAC Xenta 103-A Chilled ceiling controller	TAC Xenta 283 Fixed I/Os	TAC Xenta 421A 4 UI, 5 RO
	Other supported products: MNN-30-100 MNN-44-100 MNN-50-100 MNN-62-100 MNN-LCD-100 MNN-LCDP-100 MNN-TS-100 MNN-TSP-100 MNN-MI-100 MNA-R10 MNL-TSP-100 IAC 400/420/600 IAC Touch Screen MIU IV UniFact UniFact Pro MMC 3601/4601	Other supported products: MNN-30-100 MNN-44-100 MNN-50-100 MNN-62-100 MNN-LCD-100 MNN-LCDP-100 MNN-TS-100 MNN-TSP-100 MNN-MI-100 MNA-R10 MNL-TSP-100 IAC 400/420/600 IAC Touch Screen MIU IV UniFact UniFact Pro MMC 3601/4601	Rooftop profile MNL-5RR2 MNL-10RR2 MNL-15RR2 MNL-20RR2	TAC Xenta 104-A Rooftop unit controller	TAC Xenta 301 Expandable I/Os, 2 modules	TAC Xenta 422A 4 UI, 5 RO with LEDs & Hand/Off/Auto
			Satellite Profile MNL-5RS2 MNL-10RS2 MNL-15RS2 MNL-20RS2	TAC Xenta 110-D Dual room controller	TAC Xenta 302 Expandable I/Os, 2 modules	TAC Xenta 451A 8 UI, 2AO
				TAC Xenta 151-D Dual fire smoke actuator controller	TAC Xenta 401 Expandable I/Os, 10 modules	TAC Xenta 452A 8 UI, 2AO with LEDs & overrides
				TAC Xenta 121-FC Fan Coil controller		TAC Xenta 471 8 AI (0-10 Vdc / 0-20 mA)
				TAC Xenta 121-HP Heat Pump controller		TAC Xenta 491 8 AI (0-10 Vdc)
						TAC Xenta 492 8 AO (0-10 Vdc) & overrides

Satchwell MicroNet is complemented by a full range of actuators, valves and sensors from TAC, and devices such as meters, speed drives, and uninterruptible power supplies from other Schneider Electric companies.

For further information, contact your TAC sales office, or visit our website www.tac.com



DS 13.XXX

Satchwell is a global brand of Schneider Electric with over 80 years experience in the design and manufacture of control systems for commercial, public and industrial buildings. ISO9001 certification and advanced manufacturing systems, based on Six Sigma and just-in-time techniques, ensure Satchwell products are built to the highest standards of quality and reliability. The products are backed by 1st class after sales support and ongoing research and development programmes, assuring customers of the long-term security of their investments.

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