ASCII MICROGATEWAY

SPECIFICATIONS	NEW	Form 450.20-S23 (401)

The ASCII MicroGateway is a device that may be configured as either a chiller interface or third-party point-of-connection. When two or more ASCII MicroGateways are connected together as a network, a third-party device may retrieve chiller operational data, change chiller set points and start/stop the chiller.

Within any installation one of the MicroGateways must be configured as a third-party point-of-connection. Each chiller also requires an additional MicroGateway configured as a chiller interface. The communications protocol between the MicroGateways is YORK's ISN network operating at **19.2** or **50** kbaud.

The ASCII MicroGateway, when configured as a chiller interface, converts YORK chiller data into the ISN protocol. This data is then made available to third parties using the MicroGateway configured as a point-of-connection device.

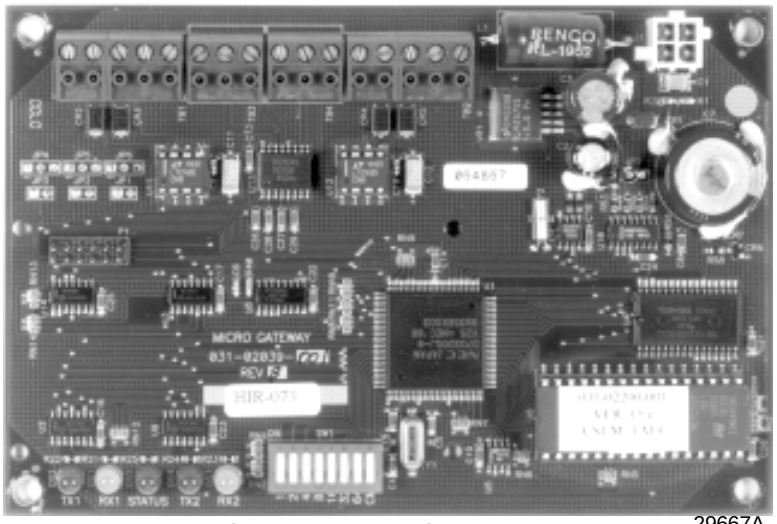

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Figure 1. ASCII MicroGateway

Features and Benefits

- Seamless integration is offered between all standard York Talk communication protocols and third-party devices equipped with a YORK ASCII driver.
- Plug-in connectors simplify and ensure quick installation.
- The Quick Start feature uses DIP switches to provide easy configuration and reduced setup time for most YORK chiller types.
- Available as a stand-alone enclosure with power supply or as a card for installation within existing OptiView micro panels.
- UL 916 listed and certified to comply with the relevant *CE* EMC and safety directives.

Third-party devices communicating with the ASCII MicroGateway system must be capable of sending a predefined collection of ASCII characters to control the chiller as well as to request data from the chiller. They must also be capable of parsing the return character string to interpret the data.

Chillers may be controlled or monitored, locally or remotely, by the ASCII device according to the devices capabilities.

The ASCII MicroGateway is available as either a card (shown in Figure 1) that may be fitted directly inside the OptiView micro panel or is supplied within an enclosure (shown in Figure 6) when used with other chiller micro panel types or as a point-of-connection device.

The communications setup parameters for standard chillers are stored within the MicroGateway and selected using DIP switches. This "Quick Start" feature ensures accurate, verifiable and consistent setup, reducing installation costs.

When required, a portable computer with a VT100 emulation program (such as MicroGateway Configurator) can connect to the MicroGateway through the RS232 port. This allows setup for special or non-standard applications as well as troubleshooting and monitoring of data.

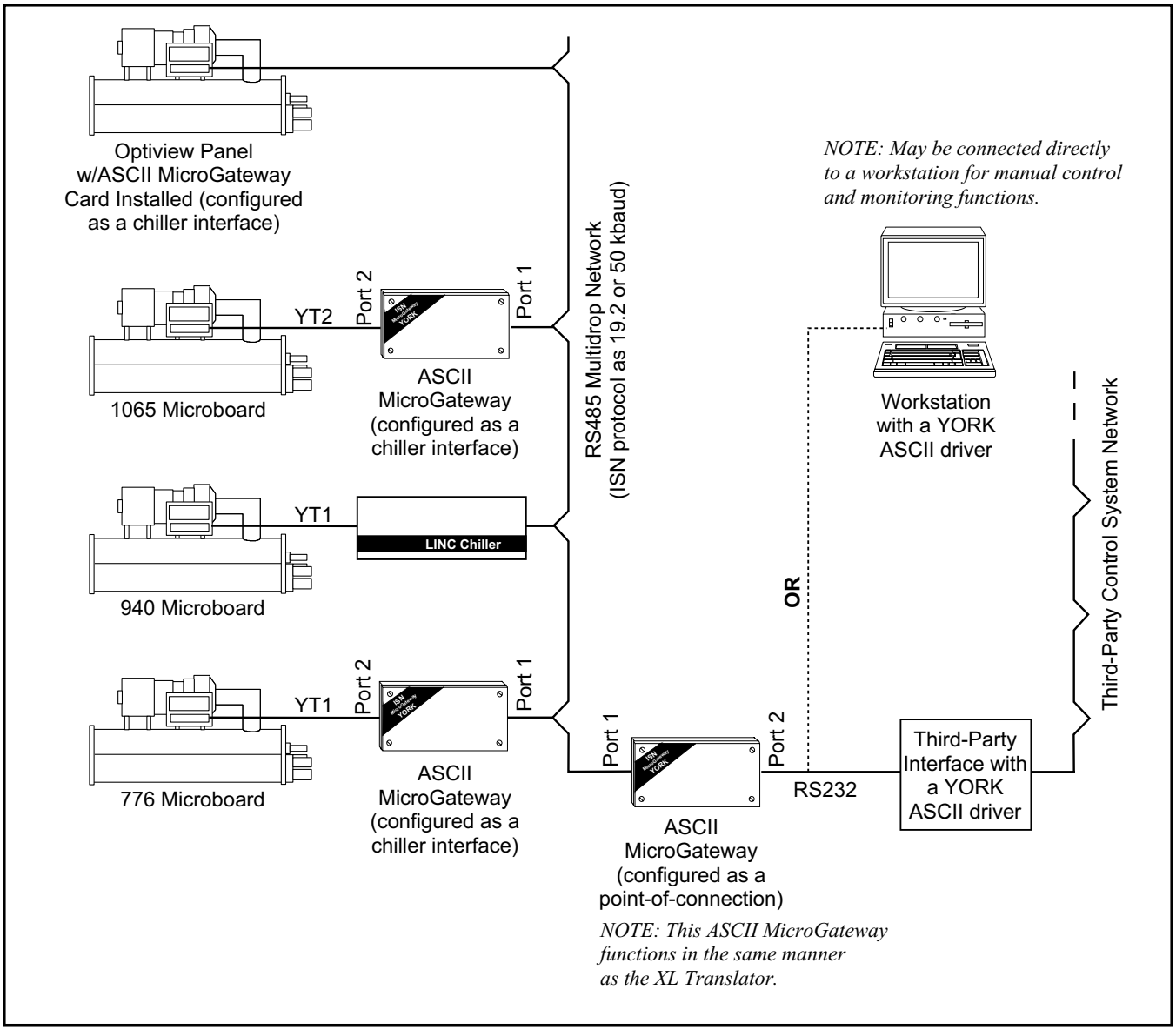


Figure 2. ASCII MicroGateway connected to a Third-Party System

Configurations of the ASCII MicroGateway

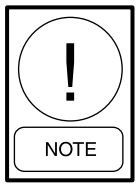
Figure 2 depicts a typical architecture that supports a third-party interface. Several YORK chiller micro panels are connected together using the ISN network. Third-party access is provided by an ASCII Micro-Gateway configured as a point-of-connection. The ASCII MicroGateway interfaces to all the different types of microprocessor-based YORK micro panels which support a communications interface, including the 776, 940, 1065, 1095 and the OptiView.

Older translators, such as a LINC Chiller, may be used as part of a new installation. Third-party interfaces may be workstations with a built-in YORK ASCII driver or a purpose-built gateway that translates ASCII into another protocol.

For the OptiView micro panel, the MicroGateway board easily mounts within the micro panel itself, eliminating the need for an additional enclosure or power supply. Other chiller models may require the external enclosure with power supply.

ASCII Support

The ISN network is used to transport chiller data expressed in an ASCII format between ASCII MicroGateways configured as chiller interfaces and ones configured as a point-of-connection to third-party systems. Most third-party Building Automation Systems are capable of exchanging data with another system using a sequence of ASCII strings.



NOTE: A YORK ASCII driver is required to interface with a YORK chiller. Development of the driver is the responsibility of the third-party and is not provided by YORK.

Physically the ISN network is easy and economical to install requiring only a twisted-pair, shielded cable daisy-chained between devices. The physical length of the network, the number of nodes, etc., is governed only by the constraints imposed by the RS485 standard (4000 ft./1220 m, and 32 nodes).

The ASCII MicroGateway supports any network address from **1** to **99**.

Functionality

The ASCII MicroGateway may best be characterized according to its configuration.

When configured as a chiller interface, it polls the chiller panel for data, passing any commands received from the ISN network to the chiller panel. It essentially provides the functionality of a SERVER with respect to the ISN network.

When configured as a third-party point-of-connection it packetizes the ASCII character strings from the third-party driver into the ISN protocol and sends them to the ASCII MicroGateway configured as chiller interfaces. In this configuration it provides a ROUTING function.

Protocols

There are three specific types of protocols employed by the ASCII MicroGateway:

ISN – Provides a network interfaces between the networked MicroGateways.

York Talk – Provides an interface with the all the different types of YORK chiller micro panels.

ASCII – Provides an interface to the third-party.

The following table outlines the communication parameters of the different protocols.

PROTOCOL	PORT NO.	PHYSICAL LAYER	TRANSFER RATE
ISN	1	RS485	19.2/50 kbaud
York Talk	2	RS232 or RS485	1.2 to 19.2 kbaud
ASCII	2	RS232	9600 baud (no parity)

The ASCII MicroGateway provides the third-party with access to three well-specified data structures (known as Features). These allow a third-party device to:

- send commands to the chiller panel.
- retrieve data from the chiller panel.
- determine the status of the communications between the chiller panel and ASCII MicroGateway.

Diagnostics

A user may diagnose the operation of the ASCII MicroGatway by observing the communication and STATUS LEDs. The STATUS LED provides a visual indication of any “Quick Start” features invoked and displays the general operation status of the MicroGateway during normal operation. The communication LEDs allow the communication ports to be debugged.

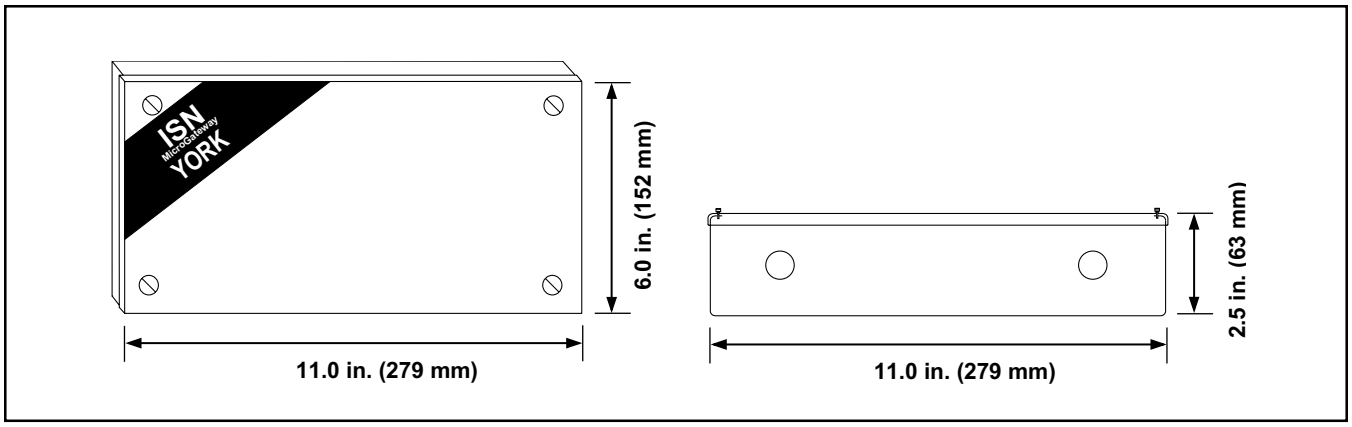


Figure 6. Dimensions

SPECIFICATIONS

		Board Only	Board w/Enclosure & Power Supply
General	Primary Power Source	12 VDC, (-2/+25%)	110/220 VAC, (±15%)
	Frequency	N/A	60/50 Hz (±10%)
	Power Consumption	Nominally 4 VA	Nominally 12 VA
	Operating Environment	32 to 122° F (0 to 50° C) 0 to 95% RH non-Condensing	32 to 122° F (0 to 50° C) 0 to 95% RH non-Condensing
	Size (H x W x D)	4 x 6 in. (101 X 152 mm)	6 x 11 x 2.5 in. (152 X 279 X 63 mm)
	Weight	4 oz. (113 grams)	4.5 lb. (2 kg)
Electrical	Processor	NEC V25 Operating at 8 MHz	
	Memory PROM	256 kbytes of CMOS OTP/EPROM	
	Memory RAM	128 kbytes of capacitor-backed CMOS SRAM	
	E^2	1,000 bytes of useful storage	
	Back-up	SRAM data maintained for 72 hrs. Capacitor Enable/Disable jumper	
Installation	Port 1 Selections	RS485 (ISN at 19.2 or 50 kbaud)	
	Port 2 Selections	RS485/RS232 (ASCII and York Talk 1,2, & 3)	
User Functions	Port 1	Communication status LEDS (TX = Red LED and RX = Green LED)	
	Port 2	Communication status LEDS (TX = Red LED and RX = Green LED)	
	System Status	Flashing Red LED; Error codes reported by different flash rates	
	Node Selection	Via DIP Switch – Nodes 1-99 (Terminal Mode selected by setting DIP=255)	
	Network Cabling	A three-core cable with shield and drain wire should be used for both RS232 and RS485 connections	
Agency	UL 916/FCC Part 15 Conducted and Radiated CE (Satisfying all the relevant EMC directives) and IEC950/EN60950 (Safety directive)		

Ordering Information

ASCII MicroGateway OptiView kit: 371-03609-004
ASCII MicroGateway in an enclosure 110VAC: 371-02592-104
ASCII MicroGateway in an enclosure 220VAC: 371-02592-204

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