

DMT641A8G Expansion module



DMT641A8G Input Output Module

Introducing our 64-point high-speed Input/Output expansion module, designed for optimal compatibility with the DMC400 and DMC200 family of network control engines.

Elevate your system's capabilities with lightning-fast input/output processing, ensuring swift and efficient operations. Experience seamless integration and enhanced performance for your network control needs.

Features

The DMT641A8G is an intelligent 64-point I/O expansion module designed to interface with DMC400 and DMC200 series controllers. Communication is established via the PJ Panel Bus or PJ Field Bus, enabling scalable extension of the controller's physical point monitoring and control functions.

The DMT641A8G IO expansion modules provide flexible, Extra Low Voltage (ELV), UL Class 2 I/O for a wide range of building automation tasks.

DMT641 offers 32 universal inputs, 16 digital outputs, and 16 analog outputs for highly concentrated IO applications.

The DMT641 universal input type is software selectable, with in-built End of Line termination selected via a physical jumper.

Configured entirely through the Niagara Framework and PJ Bus driver—no extra tools required—it supports module-level fallback values for Digital and Analog outputs providing predictable, reliable operation.

Paired with DMC series controllers, they deliver powerful, scalable control, monitoring and high-speed pulse counting for HVAC plant, chillers, pumps, variable speed drives, and bulk I/O applications.

Architecture and Communications

The DMC400 and DMC200 series controllers provide high speed serial communications to the DMT IO modules at speeds of up to 500kbps. The DMT module is identified on the network via two onboard decimal format, rotary DIP switches to set the module address.

Whether your IO modules are panel-mounted, on a common DIN rail, or located remotely, the DMC controller series adapts to your needs. Use PJ Panel Bus for local connections on a common DIN rail, or PJ Field Bus for secure, wired communication to remote panels.

It is possible to have concurrent connections to both PJ Panel Bus and PJ Field Bus network modules on a single DMC series controller, enabling a maximum of 448 PJ IO points on a single DMC400 controller. ^{Note 1.}

PJ Panel Bus - Modular Power and PJ Bus Connectivity

The DMC400 and DMC200 series controllers are designed with integrated modular power and PJ Panel Bus communication, enabling seamless connection to the DMT module family.

Using the PJ Panel Bus, up to 64 points can be powered and communicated without requiring an external 24 V power supply. For installations exceeding this limit—such as more than two DMT320/321 modules, four DMT160/161 modules, or one DMT641—a dedicated 24 V supply must be provided for each additional DMT module group.

The PJ Panel Bus supports up to 128 points in total, offering both scalability and efficiency. **Note 1.**

When planning installations, consider available physical space to ensure optimal use of modular PJ Panel Bus connections.

PJ Field Bus — Long-Distance, High-Performance Control with Maximum Flexibility

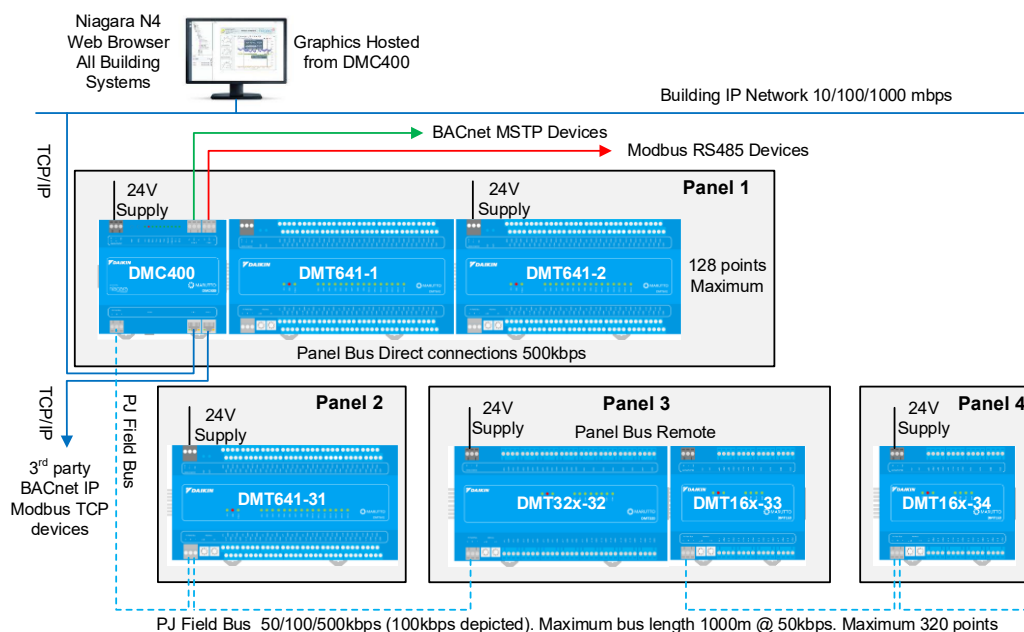
When remote DMT I/O modules are required, or when PJ Panel Bus addresses are already in use, the DMC series offers a dedicated, wired, PJ Field Bus connection. Using the PJBUS field wiring terminals, the parent DMC controller communicates with both local and remotely mounted DMT modules.

PJ Field Bus devices are wired in a daisy chain topology with no stubs or tees permitted. The maximum cable run is 1000 m (3280 ft), and communication speed is determined by the total cable length and the address range of the DMT I/O modules.

Each remote module set requires its own 24V power supply. A single PJ Field Bus connection can support up to 320 points from one DMC controller. **Note 1.**

NOTE 1: For actual maximum point and device capacities please consult the DMC series Architectural Guidelines document for further information.

Application Architectures



Application depicting PJ Panel Bus and PJ Field Bus and other device connections

Technical Data

Item	Description	Details	
Hardware	Power Supply	Class 2 24VAC +20% / -15% 24VDC +/-3%	
	Power Consumption	14.4VA AC/370mA DC or 4PU x (4 x Power Units)	
	Processor	GigaDevice ARM Cortex M4 @ 72 MHz	
	RAM	64Kb	
	Flash Memory	512Kb	
	Communication Ports	2 x PJ Panel Bus connector or 1 x PJ Field Bus terminal block connector via 1 x PJ Bus port	
	Universal Input x 32	12-bit ADC with PGA Resistance – 500 Ohm ~ 300K Ohm , 3% accuracy Voltage – 0-10VDC , 3% accuracy Current – 0-20mA , 3% accuracy Pulse Count – up to 30Hz at 50% duty cycle minimum pulse width 16.6ms. (Counter totalization stored on module) Digital – voltage free dry contact	
	Analog Output x16	12bit DAC Voltage Mode 0-10VDC , 3% accuracy Min load impedance 1,000 Ohm at 10mA max.	
Compliance	Digital Output x 16	Built in onboard LED indicator Voltage Free SPST Normally Open Relay Contact 48VA / 2A at 24VAC	
	North America	UL 60730 Energy Management Equipment c-UL Canada FCC 47 CFR Class B, Part 15, Sub-part B ICES-003 Issue 7	
	Europe CE	IEC 60730, EMC	
	UK CA	IEC 60730, EMC	
	Oceania RCM	IEC 60730, EMC AS/NZS CISPR 32:2015 AMD1:2020	
Environment	Others	RoHS2, REACH, WEEE.	
	Operating Temperature	-20°C ~ 60°C	
	Operating Humidity	10% ~ 90% RH, non-condensing	
	Storage Temperature	-40°C ~ 65°C	
	IP Rating	IP20	
Mechanical	Cooling	Internal air convection. Mount horizontally.	
	Dimensions L x W x H	237mm x 120mm x 50mm	Unit Weight ~704 grams Packed Weight ~770 grams
	Material	Base: Plastic PC/ABS Cover: Plastic PC/ABS	
	Mounting	35mm DIN rail mount options standard and keyhole slots	

Ordering Information

Product Code	Description	Details
DMT641A8G	64 Input/Output expansion module Software configured UI type	32 Universal Inputs 16 Analog Outputs, 16 Digital Outputs

Product dimensions DMT320A8G

