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Mark VIe Power Distribution Module Summary Sheet*

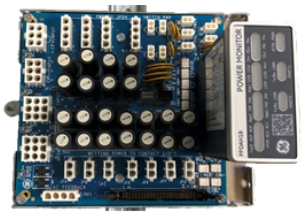
The Mark* VIe Power Distribution Module (PDM) offers a set of inter-connectable products to provide core system power for control electronics and I/O contact wetting and wiring protection within the control system. When using GE's power distribution parts, users benefit from the following features:

- Automatic power monitoring and diagnostics to the controller, which alerts operations and maintenance teams and eliminates manual programming and extra I/O for power monitoring
- Proven power distribution scheme with coordinated fault protection and isolation
- Segregation of control and contact wetting power to avoid field wiring issues from damaging control components
- Flexible redundancy schemes for most applications that support Dual or TMR options
- Simplified power schemes to reduce panel fabrication, assembly, and test time and shorten the panel build phase of projects

PDM products include:

- IS410JPDx series of DIN-rail mountable PDMs distribute control power and I/O wetting power within the control system
- Power Distribution Diagnostic Feedback I/O pack (IS420PPDAH1B) monitors control and wetting power and branch fusing. The PPDA I/O pack is mounted on either the IS410JPDGH1A or IS410JPDSG1A.
- Prefabricated power cable harnesses interconnect PDMs and system control and I/O components

JPDG Dual Control & Wetting Power, with Cover



JPDG Dual Control & Wetting Power, no Cover

The Mark VIe control system can support two or more independent sources of power. A typical configuration uses two separate AC grid power feeds as primary sources to bulk control and wetting supplies. An optional secondary power source could be a plant's 24, 48, or 125 V dc station battery system, which is charged by the local AC grid. This configuration keeps the control system powered during loss of AC power events and (with station battery) can support black start operations. The Mark VIe approach provides flexible, field-proven redundancy schemes for the power sources, power supplies, and power cables to Simplex and Redundant I/O, eliminates custom engineered solutions, and assures proper responses to failures in power delivery. The application designer can select the appropriate system reliability and fault coverage.

The PDM configuration provides isolation between core control power and I/O wetting power, protecting controller and I/O electronics from power surges or dips received from noisy field I/O. The PDM's built-in coordinated circuit protection isolates faults within the system and prevents the spread of issues. Examples are in branch protection by fuses, which prevents a module short from taking down supplies up stream. This also protects wire insulation and connectors from exceeding safe temperatures.

The *Power Distribution Module Specifications table* provides specifications for the IS410JPDx PDMs available for use in the Mark VIe and Mark VIeS control systems.

For information on applying the PDM product line in a Mark VIeS Functional Safety control system, as well as information on power configuration architectures, redundancy, power supplies, and cable harnesses, refer to the *Mark VIeS Functional Safety Control Systems Power Distribution Modules (PDM) Application Guide for General Market* (GEI-100861).

For additional details on each PDM and the PPDA I/O pack, refer to the *Mark VIeS Functional Safety Systems for General Market Volume II System Guide for General-purpose Applications* (GEH-6855_Vol_II), the chapter *PDM Power Distribution Modules*.

Power Distribution Module Specifications

Item	Power Distribution Module				
	IS410JPDGH1A	**IS410JPDSG1A**	**IS410JPDEG1A**	**IS410JPDHG1A**	**IS410JPDDG#A**
Product Name	Mark VIe Control & I/O Wetting Power Distribution	Mark VIe Control Power Distribution	Mark VIe I/O Wetting Power Distribution	Mark VIe High Density Control Power Distribution	Mark VIe I/O Wetting Power Branch Distribution
Life-cycle Status	Active	Active	Active	Active	Active
Redundancy Configurations	Single or Dual Diode OR'd supplies	Simplex, Dual, and TMR supplies	Single or Dual Diode OR'd supplies	Simplex, Dual, or TMR control power (R/S/T) distribution	Fused, switched I/O wetting power distribution
Power Monitoring I/O Pack	IS420PPDAH1B (order separately)	IS420PPDAH1B (order separately)	None; shares PPDA via ribbon cable to JPDS	—	—
28 V dc Control Power Inputs	Supports 2 externally Diode OR'd 28 V dc control power supplies, 40 A max	Supports 2 externally Diode OR'd 28 V dc control power supplies, 20 A max	—	28 V dc control power Inputs (J1), 13 A max	—
28 V dc Control Power Outputs	Qty 4 Control power fused bulk outputs, 7 A max Qty 4 Control power self-recovering, poly-fused outputs, 2.0 A max Qty 5 Control power self-recovering, poly-fused outputs, 0.8 A max	Qty 6 Control power fused bulk outputs, 13 A max Qty 3 Control power un-fused Outputs, 3.0 A max Qty 3 Control power self-recovering, poly-fused outputs, 0.8 A max	—	Qty 24 Control power self-recovering, poly-fused outputs, 0.8 A max (8 each via JR1-8, JS1-8, JT1-8)	—
24/48 V dc I/O Wetting Power Inputs	Supports 2 externally Diode OR'd 24/48 V dc floating I/O wetting power supplies, 40 A max, with optional bias to provide ground fault detection	—	Supports 2 externally Diode OR'd 24/48 Vdc floating I/O wetting power supplies, 24 A max, with optional bias to provide ground fault detection; Supports externally Diode OR'd 24/48 V dc floating station battery, 30 A max	—	24/48 V dc contact wetting input (J28), 20 A max or 125 V dc contact wetting inputs (J125), 10 A max
24/48 V dc I/O Wetting Power Outputs	Qty 7 I/O wetting fused bulk outputs, 10 A max	—	Qty 3 I/O wetting fused no switch bulk outputs, 10 A max. Qty 3 I/O wetting fused & switched bulk outputs, 5 A max.	—	Qty 6 I/O wetting branch circuits fused, switched outputs (JD1-JD6), 7 A continuous max

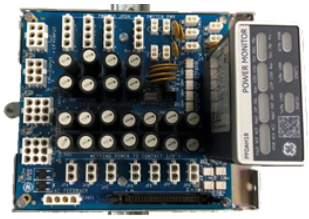
Power Distribution Module Specifications (continued)

Item	Power Distribution Module				
	IS410JPDGH1A	**IS410JPDSG1A**	**IS410JPDEG1A**	**IS410JPDHG1A**	**IS410JPDDG#A**
User-supplied I/O Wetting Power Fuses (for JPDD)	—	—	—	—	Max fuse rating 250 V dc at 15 A. For application flexibility, fuses are provided by user. IS410JPDDG2A supports 5 x 20 mm (0.20 x 0.79 in) fuses. IS410JPDDG3A supports 6.35 x 31.75 mm (0.25 x 1.25 in) fuses.
Cable Harnesses/PDM Interconnections	For cable harnesses, descriptions, and part numbers, refer to *Mark VIeS Functional Safety Control Systems Power Distribution Modules (PDM) Application Guide for General Market* (GEI-100861), the chapter *Standard Cable Harnesses for PDMs*.				
Monitors Power Supply Health Contacts	Yes, up to 4 power supplies	Yes, up to 3 power supplies	Yes, up to 2 power supplies	—	—
Health and Status LEDs	PPDA self-checking, monitors 2 AC mains, power supplies, I/O wetting power ground fault, and glass/ceramic fuses, reports health to controller via IONet	PPDA self-checking, monitors power supplies, reports health to controller via IONet	Reports ceramic fuse faults, I/O wetting supply ground fault, and I/O wetting power diagnostics to JPDS via 50–pin ribbon cable, J1 to J2	—	LED per circuit indicating fuse OK and switch On
PPDA Input Power	28 V dc nominal, at 0.24 A	28 V dc nominal, at 0.24 A	—	—	—
PPDA Control Power cable to JPDG/JPDS	336A4937RDG010, 10" cable, PPDA to JPDG JD4 (order separately)	336A4937RDG010, 10" cable, PPDA to JPDS P4 (order separately)	—	—	—
Module Dimensions (includes cover and I/O Pack) (H x W x D)	17.0 x 23.1 x 15.2 cm (6.7 x 9.1 x 6.0 in)	17.0 x 23.1 x 15.2 cm (6.7 x 9.1 x 6.0 in)	17.0 x 22.1 x 11.4 cm (6.7 x 8.7 x 4.5 in)	16.5 x 15.2 x 11.4 cm 6.5 x 6.0 x 4.5 in	24.1 x 15.2 x 11.4 cm 9.5 x 6.0 x 4.5 in
Mounting	DIN-rail mounted				
Cooling	Convection				
Safety Rated	Non-interferring				
Hazardous Locations Capability	Class 1, Div 2 / Class 1, Zone 2 / ATEX For ratings and further details, refer to the *Mark VIeS Functional Safety System Equipment in Hazardous Locations (HazLoc) Instruction Guide* (GEH-6861).				
G3 Compliant	Yes				
Ambient Operational Temperature	-40 to 70°C (-40 to 158 °F)				
Storage Temperature	-40 to 85°C (-40 to 185 °F)				
Humidity	95% non-condensing				

Power Distribution Module Specifications (continued)

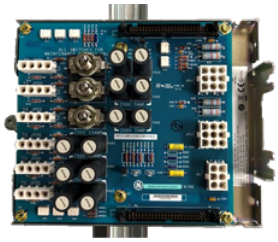
Item	Power Distribution Module				
	IS410JPDGH1A	**IS410JPDSG1A**	**IS410JPDEG1A**	**IS410JPDHG1A**	**IS410JPDDG#A**
Module Replacement Part Number	IS410JPDGH1A	IS410JPDSG1A	IS410JPDEG1A	IS410JPDHG1A	IS410JPDDG2A, with 5 x 20 mm (0.20 x 0.79 in) style fuse holders IS410JPDDG3A, with 6.35 x 31.75 mm (0.25 x 1.25 in) style fuse holders
Module Cover Replacement Part Number	151X1202YE12PP02BL	151X1202YE12PP02BL	151X1202YE12PP01BL	151X1202YE12PP03BL	IS410JPDDG2A: 151X1202YE12PP04BL IS410JPDDG3A: 151X1202YE12PP04BL

IS420PPDAH1B I/O Pack



IS410JPDGH1A, no Cover

IS410JPDSH1A, no Cover



IS410JPDGE1A, no Cover

JPDH, no Cover

JPDH, with Cover

JPDD, no Cover

JPDD, with Cover

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