

# TIA-1005-A M.I.C.E. Rated Product Selection Guide



## TIA-1005-A M.I.C.E. Rated Product Selection Guide

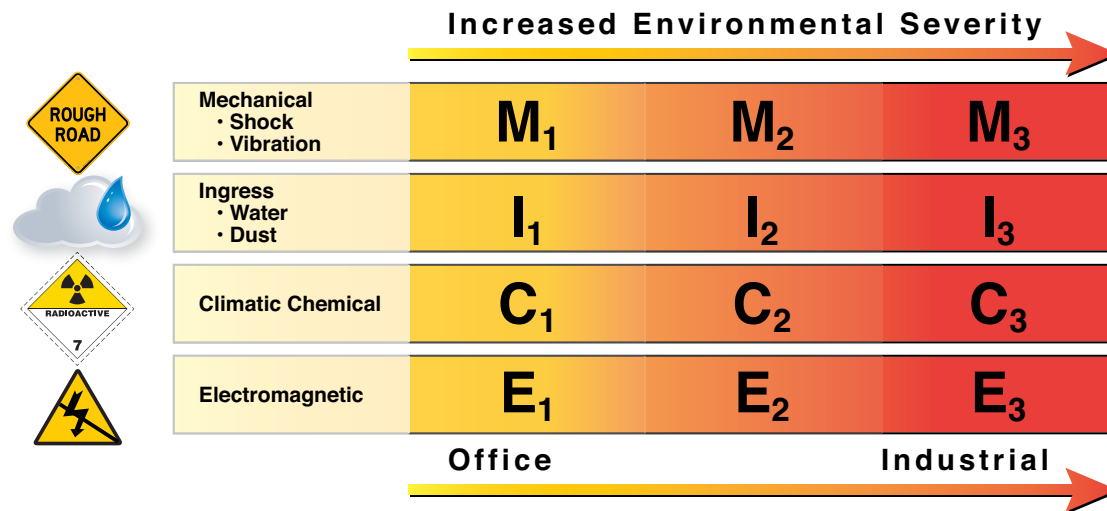
When designing the physical infrastructure to support network communications in a manufacturing location, TIA-1005-A is a standard that must be considered.

According to the TIA-1005-A standard, there are three basic types of industrial areas:

- Factory Floor
- Work Area
- Automation Island

Designing for the manufacturing environment requires an intimate knowledge of these areas to ensure the infrastructure supports the different environments found on the plant floor. Considerations such as shock and vibration, handling of water or dust, temperature, washdown areas, exposure to acids or oil mixtures and electromagnetic noise must be taken into account when selecting solutions to support these harsh environments.

Environmental classifications and ratings based on Mechanical, Ingress, Climatic/Chemical, Electro Magnetic (M.I.C.E.) attributes provide a method of categorizing the environmental classes required for each of the industrial areas and are rated as 1 = low, 2 = medium, and 3 = high.



Whether you are designing for the factory floor, work area or automation island, Panduit offers solutions that meet the TIA-1005-A M.I.C.E. guidelines. This selection guide provides the industrial physical infrastructure designer with detailed M.I.C.E. information about each of Panduit's network products typically considered in industrial environments. For an expanded offering of level 1 parts that may be used in your industrial network, visit [panduit.com/networkpartsamerica](http://panduit.com/networkpartsamerica) or the online catalog at [panduit.com](http://panduit.com).

For additional information on M.I.C.E. ratings contact our technical support team at [techsupport@panduit.com](mailto:techsupport@panduit.com) or call 800-777-3300.

For more information about the TIA-1005-A standard, visit [tiaonline.org](http://tiaonline.org).









<b>LEGEND:</b> ● = Acceptable for use in Environment x = Not Acceptable for use in Environment — = Not Applicable c = Contact Tech Support  <b>NOTE:</b> In the case a lower M.I.C.E. rated part is needed to be used in a higher M.I.C.E. rated environment please contact Tech Support for further guidance on the application.  *Tensile Connected: This aspect of environmental classification is installation specific and should be considered in association with IEC 61918 and the appropriate component specification. The 300 and 500 N numbers were used as a reference to differentiate the levels.		<b>M.I.C.E. (Final Rating)</b>  <b>M I C E</b>		<b>Detailed M.I.C.E. Rating</b>																								
				<b>Mechanical</b>										<b>Ingress</b>		<b>Climatic/Chemical</b>						<b>EMI</b>						
				<b>M<sub>2</sub></b>					<b>M<sub>3</sub></b>					<b>I<sub>2</sub></b>	<b>I<sub>3</sub></b>	<b>C<sub>2</sub></b>			<b>C<sub>3</sub></b>			<b>F<sub>1</sub></b>	<b>F<sub>2</sub></b>	<b>F<sub>3</sub></b>				
				shock 100 ms-1	vibration 7mm/20ms-1	*Tensile Connected 300N	compression 1100N/150mm	impact resistance 10J	torsion	shock 250 ms-1	vibration 15mm/50 ms-1	*Tensile Connected 2	compression 2200N/150mm	impact resistance 30J	torsion	IP 54/65	IP 67	-25°C to +70°C operation temp.	1,0 °C/min temp. change	See C3 sun radiation	< 5,0 ppm oil resistance	res. liquid chemicals	res. gaseous agents	-40°C to +70°C operation temp.	3,0 °C/min temp. change	1120 W/m <sup>2</sup> sun radiation	< 500 ppm oil resistance	res. liquid chemicals
<b>Part Number</b>	<b>Product Description</b>																											
<b>Fiber Distribution Cable</b>																												
FSJD912	9µm OS2 12 Fibers, Indoor/Outdoor DDJ cable, Riser (OFNR-LS), LSZH.																											
FOJDZ12	50µm OM4 12 Fibers, Indoor/Outdoor DDJ cable, Riser (OFNR-LS), LSZH.																											
<b>Pre-Configured Micro Data Center</b>																												
MDC79	Pre-configured micro data center, 42 RU, includes two side panels, network cabling, patch panels, cable management, grounding, and casters.																											
MDC79D	Pre-configured micro data center, 42 RU, includes two side panels, network cabling, patch panels, cable management, grounding, casters, shock pallet and ramp.																											
MDC82NN	NEMA Type 12, IP55, single hinge front door with windowed glass, single hinge rear door, solid side panel (2), 42 RU, network cabling, patch panels, cable management, grounding, and casters. Color Light Gray. Dimensions: 78.7" H x 27.6" W x 47.2" D (2000mm x 700mm x 1200mm).																											
MDC82NL	NEMA Type 12, IP55, single hinge front door with windowed glass, single hinge rear door, solid side panel (1), side panel with cutout for 20k BTU AC (1), 42 RU, network cabling, patch panels, cable management, grounding, and casters. Color Light Gray. Dimensions: 78.7" H x 27.6" W x 47.2" D (2000mm x 700mm x 1200mm).																											
<b>Pre-Configured Industrial Distribution Frames</b>																												
ZDF242430	Pre-configured industrial distribution frame enclosure, 12U, ready for two access or two distribution switches.																											
ZDF242430-6	Pre-configured industrial distribution frame enclosure, 12U, 316 stainless steel, ready for two access or two distribution switches.																											
ZDF48-RA	Pre-configured industrial distribution frame enclosure ready for two access and two distribution switches.																											
ZDF48-6RA	Pre-configured industrial distribution frame enclosure, 316 stainless steel, ready for two access and two distribution switches.																											
ZDF24-S25	Universal distribution frame 12U for two industrial switches, fiber tray, (1) 48-port patch panel, (1) 4U DIN mount bracket, (1) Maintenance-free UPS, redundant supplies AC to DC, terminal blocks, wiring for 120 V AC input.																											

\*Available in multiple colors. \*\*Available in multiple lengths. \*\*\*Available in multiple colors and lengths. \*\*\*\*Available in multiple colors and fiber counts.

		Detailed M.I.C.E. Rating																																
		M.I.C.E. (Final Rating)				Mechanical										Ingress		Climatic/Chemical						EMI										
		M	I	C	E	M <sub>2</sub>					M <sub>3</sub>					I <sub>2</sub>	I <sub>3</sub>	C <sub>2</sub>			C <sub>3</sub>			F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>								
						shock 100 ms-1	vibration 7mm/20ms-1	*Tensile Connected 300N	compression 1100N/150mm	impact resistance 10J	torsion	shock 250 ms-1	vibration 15mm/50 ms-1	*Tensile Connected 2	compression 2200N/150mm	impact resistance 30J	torsion	IP 54/65	IP 67	operation temp. -25°C to +70°C	temp. change 1.0 °C/min	sun radiation See C3	oil resistance < 5.0 ppm	res. liquid chemicals	res. gaseous agents	operation temp. -40°C to +70°C	temp. change 3.0 °C/min	sun radiation 1120 W/m²	oil resistance < 500 ppm	res. liquid chemicals	res. gaseous agents	ESD, Transients, RF, Magnetic Field	ESD, Transients, RF, Magnetic Field	ESD, Transients, RF, Magnetic Field
Part Number	Product Description																																	
<b>LEGEND:</b> ● = Acceptable for use in Environment x = Not Acceptable for use in Environment — = Not Applicable c = Contact Tech Support		<b>NOTE:</b> In the case a lower M.I.C.E. rated part is needed to be used in a higher M.I.C.E. rated environment please contact Tech Support for further guidance on the application.  *Tensile Connected: This aspect of environmental classification is installation specific and should be considered in association with IEC 61918 and the appropriate component specification. The 300 and 500 N numbers were used as a reference to differentiate the levels.																																
<b>Pre-Configured Industrial Distribution Frames (continued)</b>																																		
ZDF48-S65	Universal distribution frame 26U for six industrial switches, fiber tray, (3) 48-port patch panels, (3) 4U DIN mount brackets, (3) Maintenance-free UPSs, redundant supplies AC to DC, terminal blocks, wiring for 120 V AC input.	—	2	c	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	—
<b>Network Zone System</b>																																		
<b>24" x 24" Enclosures – Category 6A Connectivity and Fiber Uplink Patch Cords and Adaptors</b>																																		
Z22C-SS	Pre-configured network zone system, 24" x 24", mild steel enclosure, for two industrial switches, includes (8) Category 6A STP copper patch cords and jacks, (2) MM LC fiber patch cords with (6) LC adaptors, backplane and cable management.	—	2	c	2	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
Z22U-S14S	Universal network zone system, 24" x 24", mild steel enclosure, for one industrial switch, includes (8) Category 6A STP copper patch cords and jacks, (2) MM LC fiber uplink patch cords with (6) adaptors and redundant power supplies.	—	2	c	2	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
Z22U-S15S	Universal network zone system, 24" x 24", mild steel enclosure, for one industrial switch, includes (8) Category 6A STP copper patch cords and jacks, (2) MM LC fiber uplink patch cords with (6) adaptors, redundant power supplies and maintenance-free UPS.	—	2	c	2	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
<b>24" x 24" Enclosures – Category 6 Connectivity and Fiber Uplink Patch Cords and Adaptors</b>																																		
Z22C-S	Pre-Configured network zone system, 24" x 24", mild steel enclosure for two industrial switches, includes (8) Category 6 UTP copper patch cords and jacks, (2) MM LC fiber patch cords with (6) LC adaptors, backplane and cable management.	—	2	c	1	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
Z22C-6	Pre-Configured network zone system, 24" x 24", 316 stainless steel enclosure, for two industrial switches, includes (8) Category 6 UTP copper patch cords and jacks, (2) MM LC fiber patch cords with (6) LC adaptors, backplane and cable management.	—	2	c	1	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
Z22U-S14	Universal network zone system, 24" x 24", mild steel enclosure, for one industrial switch, includes (8) Category 6 UTP copper patch cords and jacks, (2) MM LC fiber uplink patch cords with (6) adaptors and edundant power supplies.	—	2	c	1	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●
Z22U-S15	Universal network zone system, 24" x 24", mild steel enclosure, for one industrial switch, includes (8) Category 6 UTP copper patch cords and jacks, (2) MM LC fiber uplink patch cords with (6) adaptors, redundant power supplies and maintenance-free UPS.	—	2	c	1	—	—	—	—	—	—	—	—	—	—	—	—	—	●	x	●	●	●	●	●	—	—	—	—	—	—	—	—	●

(continued)





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				Mechanical										Ingress		Climatic/Chemical						EMI						
				M <sub>2</sub>					M <sub>3</sub>					I <sub>2</sub>	I <sub>3</sub>	C <sub>2</sub>			C <sub>3</sub>			F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>				
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<b>Part Number</b>	<b>Product Description</b>																											
<b>DIN Rail Mount Patching</b>																												
FDME8RG	IndustrialNet™, 8-port, DIN Rail Fiber Optic Enclosure.																											
CADIN1IG-S	1-port, Shielded DIN rail mount adapter with label.																											
CDPP8RG	IndustrialNet™ 8-Port DIN Rail Mount Copper Patch Panel.																											
CDPP8RG-S	IndustrialNet™ Shielded 8-Port DIN Rail Mount Copper Patch Panel.																											
<b>Uninterruptible Power Supply</b>																												
UPS00100DC	Uninterruptible Power Supply (UPS), 100 Watts, 24-48 VDC in/out, DIN rail mount.																											
UPS003LSM	UPS load sense module.																											
<b>Faceplates</b>																												
IAEFP1	Vertical, stainless steel, single gang faceplate accepts one IndustrialNet™ Bulkhead Connector or Adapter.																											
IAEFP2-2G	Vertical, stainless steel, double gang faceplate accepts two IndustrialNet™ Bulkhead Connectors or Adapters.																											
<b>Zone Cabling Accessories</b>																												
PZNDVK	Zone cabling drain and vent kit, NEMA 4X rating.																											



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