



MX150 Sealing Performance

March 4, 2009



Sealing Classifications – Defined

Table 1 — Overview of all IP-Code elements and significance

Element	IP	Significance for the protection of electrical equipment	Significance for the protection of persons
First code element	0	Against foreign objects (including dust): — not protected	Against access: — not protected
	1	— with diameter \geq 50 mm	— with back of hand
	2	— with diameter \geq 12,5 mm	— with finger
	3	— with diameter \geq 2,5 mm	— with tool
	4	— with diameter \geq 1,0 mm	— with wire
	5K	— dust-protected	— with wire
	6K	— dust-tight	— with wire
Second code element	0	Against water: — not protected	
	1	— vertical water drips	
	2	— water drips (15° inclination)	
	3	— water spray	
	4	— splash water	
	4K	— splash water with increased pressure	
	5	— high-velocity water	
	6	— strong high-velocity water	
	6K	— strong high-velocity water with increased pressure	
	7	— temporary immersion	
	8	— continuous submersion	
9K	— high-pressure/steam-jet cleaning		

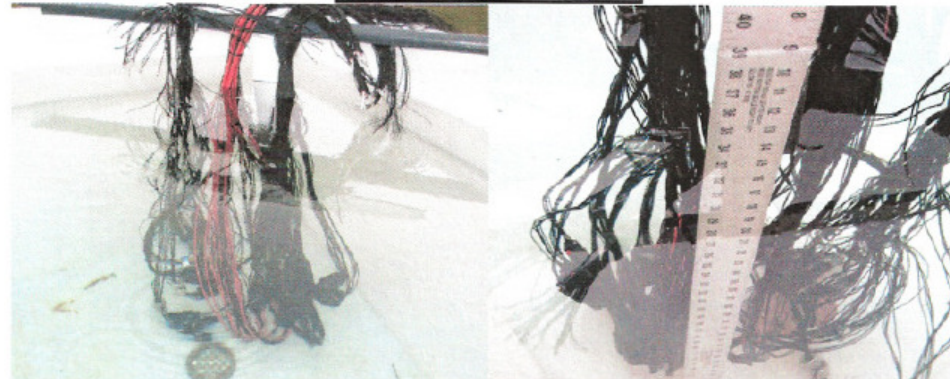


MX150 Sealed Connectors

Ingress Protection Testing – IP6K7

- **Water Immersion - PASSED**
 - 10 samples of the following circuit sizes were assembled with 22ga wires and were immersed into a tank 1 meter deep for 30 minutes
 - Matte Sealed: 1X3, 1X6, 2X2, 2X10, 16way Hybrid
 - Cable Sealed: 1X2, 1X3
 - Specimen was inspected for water intrusion
 - No signs of water or water intrusion was observed
 - Specimen was allowed to dry and then dust tested

WATER IMMERSION



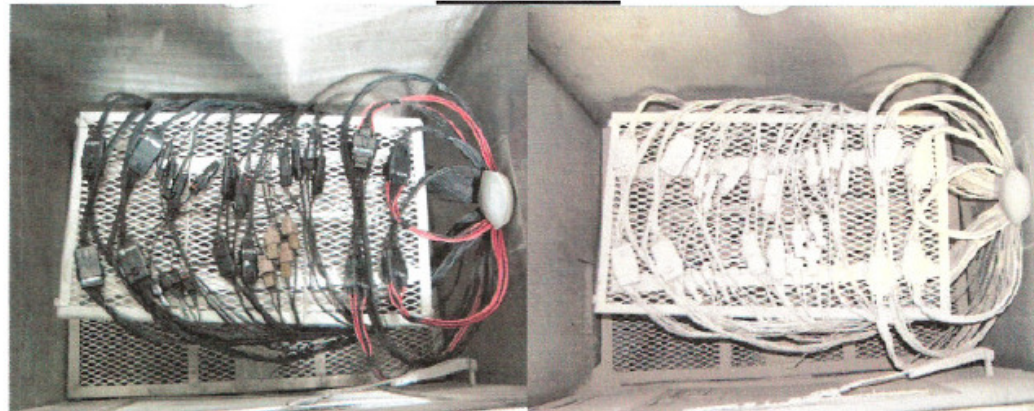
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Ingress Protection Testing – IP6K7

■ Dust Test - PASSED

- The dust chamber was filled with Arizona dust and cycled for 6 seconds every 15 minutes with pressurized air blown from the bottom of the chamber
- 20 cycles were performed
 - All samples were inspected and no dust ingress was observed
 - There was no discernable change in isolation resistance

DUST TEST



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Ingress Protection Testing – IP6K9K

- **High Pressure Spray Test - PASSED**
 - 10 samples of the following circuit sizes were assembled with 22ga wire and subjected to high pressure spray
 - **Matte Sealed: 1X3, 2X2, 2X8 16way Hybrid**
 - **Cable Sealed: 1X3**
 - **Spray Pressure was 1200 PSI**
 - **The water flow rate was 14 l/min**
 - **The nozzle was affixed 120mm from each circuit size / connection system**
 - **4 positions were tested for 30 seconds each (0⁰, 30⁰, 60⁰, 90⁰)**
 - **There was no discernable change in isolation resistance**
 - **The connection systems were disassembled and no signs of water or water intrusion were observed.**



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Ingress Protection Testing – IP6K9K

- Dust Test - PASSED
 - Surrogate testing from IP6K7 validation testing

DUST TEST

