

MICE GUIDELINES

MICE: (TIA 802.9 drafted specifications for Mechanical, Ingress, Chemical and Electromagnetic conditions)¹

Mechanical	M₁	M₂	M₃
<i>Shock/Bump (1)</i>			
Peak acceleration	40ms ⁻²	100ms ⁻²	250ms ⁻²
<i>Vibration</i>			
Displacement (2 – 9 Hz)	1,5 mm	7,0 mm	15,0 mm
Acceleration (9 – 500 Hz)	5 ms ⁻²	20 ms ⁻²	50 ms ⁻²
Crush	45N over 25 mm (linear) min	1100N over 150 mm (linear) min	2200N over 150 mm (linear) min
Impact	1J	10J	30J
Ingress	I₁	I₂	I₃
Particulate ingress	12.5 µm	50 µm	50 µm
Immersion	None	Intermittent liquid jet <=12,5 l/min >=6,3 mm jet >2,5 m distance	Intermittent liquid jet <=12,5 l/min >=6,3 mm jet >2,5 m distance And immersion <=1 m for <30 min
Climatic Chemicals	C₁	C₂	C₃
Ambient temperature	-10 °C -+ 60 °C	-25 °C - +70 °C	-40 °C - +70°C
Rate of temperature change	0,1 °C per min	1,0 °C per min	3,0 °C per min
Humidity	5% - 85% (non-condensing)	5% - 95% (condensing)	5% - 95% (condensing)
Solar radiation	700 Wm ⁻²	1120 Wm ⁻²	1120 Wm ⁻²
Sodium chloride (salt/sea water)	0	<0,3	<0,3
Oil (dry-air concentration)	0	<0.005	<00.5
Sodium stearate	None	5 x 10 ⁴ aqueous non-gelling	>5 x 10 ⁴ aqueous gelling
Detergent	None	ffs	ffs
Conductive materials in solution	None	Temporary	Present
Gaseous pollution contaminants	Mean/Peak (Concentration x 10 ⁻⁶)	Mean/Peak (Concentration x 10 ⁻⁶)	Mean/Peak (Concentration x 10 ⁻⁶)

¹ EtherNet/IP Media Systems Quick Start Media Planning and Installation Guide ODVA

(table continued)

Hydrogen sulphide	<0,003/<0,01	<0,05/<0,5	<10/<50
Sulphur dioxide	<0,01/<0,03	<0,1/<0,3	<5/<15
Sulphur trioxide	<0,01/<0,03	<0,1/<0,3	<0,05/<0,3
Chlorine dry (<50% humidity)	<0,002/<0,01	<0,02/<0,1	<0,2/<1,0
Hydrogen chloride	-/<0,06	<0,06/<0,3	<0,6/3,0
Hydrogen fluoride	<0,001/<0,005	<0,01/<0,05	<0,1/<0,1
Ammonia	<1/<5	<10/<50	<50/<250
Oxides of Nitrogen	<0,05/<0,1	<0,5/<1	<5/<10
Ozone	<0,002/<0,005	<0,025/<0,05	<0,1/<1
Electromagnetic	E₁	E₂	E₃
Electrostatic discharge – Contact (0,667 µC)	4 kV	4 kV	4 kV
Electrostatic discharge – Air (0,132 µC)	8 kV	8 kV	8kV
Radiated RF – AM (2)			
Conducted RF	3V @ 150 kHz-80 MHz	3V @ 150 kHz-80 MHz	10V @ 150 kHz 80 MHz
EFT/B	500 V	1000 V	1000 V
Surge (transient ground potential difference) – Signal, line to earth	500 V	1000 V	1000 V
Magnetic Field (50/60 Hz)	1 Am ⁻¹	3 Am ⁻¹	30 Am ⁻¹
Magnetic Field (60-20000 Hz)	ffs	ffs	ffs

1. Bump: the repetitive nature of the shock should be taken into account
2. Radiated RF – AM
 - a. 3 V/m @ 80-1000MHz
 - b. 3 V/m @ 14000-2000MHz
 - c. 1 V/m @ 2000-2700MHz
3. Liquid pollution contaminants – (Concentration x 10⁻⁶) A signal dimensional characteristic i.e, concentration x 10⁻⁶ was chosen to unify limits from different standards