EX112 Series Controller Specification

3M Touch Systems

3M Touch Systems Standard Product

Production Status

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EX112 SERIES CONTROLLER SPECIFICATION

The controller specifications listed below were validated in test systems containing 3M Touch Systems components. These specifications may not be valid if configured with components from suppliers other than 3M Touch Systems. All components in the manufacture of electronic controllers are RoHS Directive compliant (2002/95/EC).

DESCRIPTION   SPECIFICATION

PHYSICAL DIMENSIONS   2.55 in. x 1.30 in. x 0.45 in.   (65.0 mm x 33.0 mm x 11.4 mm)

BOARD LEVEL FUNCTIONS

Power   5-12 VDC (77 mA typical, 100 mA maximum); $\pm$ 5% regulation

50 mV$_{pp}$ maximum ripple and noise

REGULATORY REQUIREMENTS   **Performance**

Description	Performance		Compliance
CE			Compliant
• Radiated Emissions – EN 55022:1998	Class B		Compliant
• AC Mains Conducted Emissions – EN 55022:1998	Class B		Compliant
• Telco Lines Conducted Emissions	N/A		N/A
• RFI – EN 61000-4-3 / ENV 50140	Class A		Compliant
• CRFI – EN 61000-4-6	N/A	Cable < 3 meters long	N/A
	Class A	< 80% Screen Area	
	Class B	≥ 80% Screen Area	
• EFT (Burst Immunity) – EN 61000-4-4	Class B		Compliant
• ESD Susceptibility – IEC 61000-4-2	Class 1		Compliant
• Surge – EN 61000-4-5	Class B		Compliant
• Harmonics – EN 61000-3-2	Class A		Compliant
• Flicker – EN 61000-3-3			Compliant
• Power Frequency Magnetic Field – EN 61000-4-8	Class A		Compliant
• Voltage Dips – EN 61000-4-11	Class B	< 5% V	Compliant
	Class C	< 70% V	
• Voltage Interruptions – EN 61000-4-11	Class C		Compliant
FCC Class B / CISPR22 Class B	Class B		Compliant
VCCI Class B ITE Emissions (Japan)	Class B		Compliant
AS/NZS 3548:1995/CISPR 22 Class B ITE Emissions (Aus.)	Class B		Compliant
UL 60950 / EN 60950 / IEC 60950-1:2001			Compliant

AMBIENT OPERATING AND STORAGE ENVIRONMENTAL CONDITIONS   **(All Humidity is Non-Condensing)**

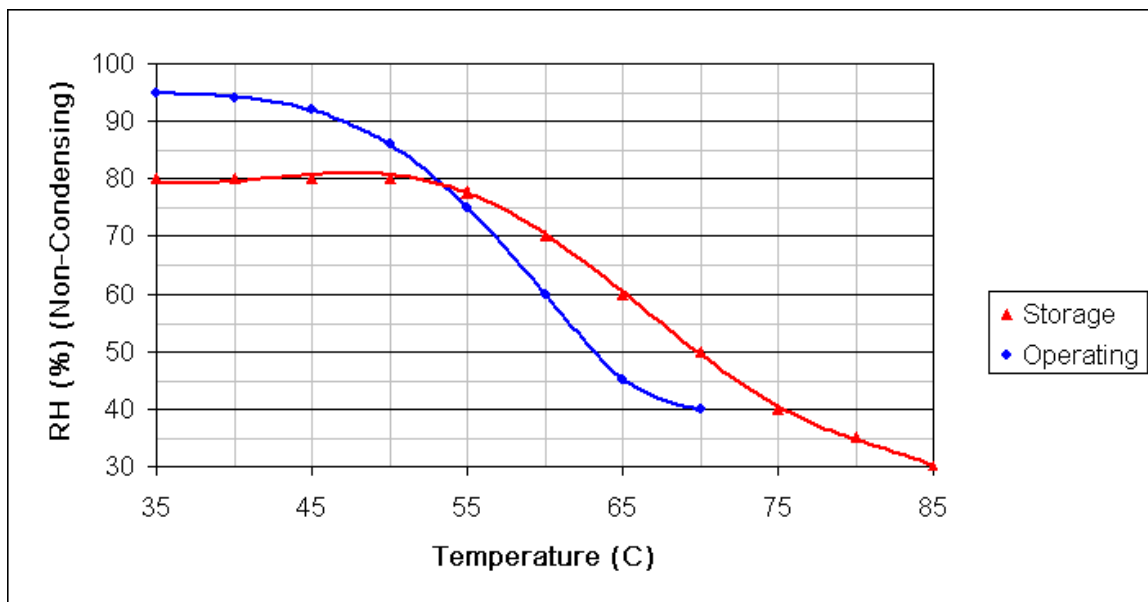|	
Operating Temperature Range	- 40 °C to +70 °C
Operating Humidity Range	< 36° C 0-95% RH
	≥ 36 °C see Figure 1 below
Storage Temperature Range	- 50 °C to +85 °C
Storage Humidity Range	< 36°C 0-80% RH
	≥ 36 °C see Figure 1 below

PERFORMANCE & RELIABILITY

Minimum Touch Duration	5.4 msec.
Touch Resolution – (Maximum number of addressable coordinates generated by the controller)	16K x 16K
ESD Susceptibility -	
±8 kV Contact Discharge[*] – Class 2 per section 9 of IEC 61000-4-2 1 false touch allowed	Compliant
±27 kV Air Discharge[*] – Class 1 per section 9 of IEC 61000-4-2 Normal Operation – No false touches	Compliant
* ESD discharges to a 3M Touch Systems touch screen connected to the controller	
MTBF (by MIL Std. 217F Calculation)	> 700,000 Hours

TOUCH SYSTEM PARAMETERS

Accuracy vs. Dynamic Temperature Change	Maintains 99.0% Accuracy
(tested at 0 deg. C to 60 deg. C	
with a 0.5 deg. C/minute temperature ramp)	
Touch Screen Compatibility	3M Touch Systems Capacitive Touch Screens
Communications Protocol	Serial RS 232
WARRANTY PERIOD	See Contract Terms and Conditions

Figure 1

Storage and Operating Temperature with Humidity Conditions

IMPORTANT NOTICE TO PURCHASER

NOTICE: Given the variety of factors that can affect the use and performance of a 3M Touch Systems, Inc. Product (the "Product"), including that solid state equipment has operation characteristics different from electromechanical equipment, some of which factors are uniquely within User's knowledge and control, it is essential that User evaluate the 3M Touch Systems, Inc. Product and software to determine whether it is suitable for User's particular purpose and suitable for User's method of application. 3M Touch Systems, Inc. statements, engineering/technical information, and recommendations are provided for User's convenience, but their accuracy or completeness is not warranted. 3M Touch Systems, Inc. products and software are not specifically designed for use in medical devices as defined by United States federal law. 3M Touch Systems, Inc. products and software should not be used in such applications without 3M Touch Systems, Inc. express written consent. User should contact its sales representative if User's opportunity involves a medical device application.

"RoHS Directive compliant" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based on information provided by third party suppliers to 3M."

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