

## Electrical Ratings

Main Circuits						
<b>825-MCM Converter Modules</b>						
Rated Operating Voltage $U_e$	825-MCM2 825-MCM5		825-MCM20	825-MCM180 825-MCM420 825-MCM630N		
	400V AC 240V AC		690V AC 600V AC	1,000V AC 600V AC		
Rated Impulse Strength $U_{imp}$	2.5kV		6kV	8kV		
Operating Current Range (A)	825-MCM2	825-MCM5	825-MCM20	825-MCM180	825-MCM420	825-MCM630N
	0.5-2.5	1-5	2.5-20	20-180	160-420	160-630
Rated Continuous Thermal Current (A)	3	6	24	216	504	756
Rated Saturation Current	30	60	240	1350	3400	4600
Rated Frequency	50/60 Hz $\pm$ 3 Hz					
<b>Voltage Input Option Card</b>						
Rated Operating Voltage $U_e$	67...300V AC (line-to-neutral)					
Operating Range	0.80...1.1 $U_e$					
Rated Continuous Voltage	300V AC					
Rated Insulation Voltage $U_i$	300V AC					
Rated Impulse Strength $U_{imp}$	4kV					
Rated Frequency	50/60 Hz $\pm$ 5 Hz					
<b>Control Circuits</b>						
<b>Supply</b>						
Rated Supply Voltage $U_s$	110...240V AC, 110...250V DC					
Operating Range	0.80...1.1 $U_s$					
Rated Frequency (V AC)	50/60 Hz $\pm$ 5 Hz					
Max. Power Consumption	AC: 15VA, DC: 15 W					
<b>Output Relays</b>						
Type of Contacts	Trip Aux1...Aux 6	Form C DPDT Form A SPDT – NO				
Rated Insulation Voltage $U_i$	300V AC					
Rated Operating Voltage $U_e$	240V AC					
Rated Impulse Strength $U_{imp}$	4kV					
Rated Thermal Current $I_{the}$	5 A					
Rated Operating Current $I_e$	120V AC	3 A				
	240V AC	1.5 A				
Contact Rating Designation	B300					
Utilization Category	AC15					
Contact Reliability	5 mA @ 17V					
<b>Inputs</b>						
Rated Operating Voltage $U_e$	IN1 and IN2			IN3, IN4 and IN5		
	24V AC/DC			120V AC/DC (825-PIOD) 24V AC/DC (825-PIOR)		
Operating Range	0.80...1.1 $U_e$					
Rated Insulation Voltage $U_i$	300V AC					
Rated Impulse Strength $U_{imp}$	4kV					
Rated Frequency (AC)	50/60 Hz $\pm$ 5 Hz					
On-State Voltage	15V			79V		
On-State Current (turn-on)	2 mA			2 mA		
Steady State Current	15 mA			15 mA		
Off-State Voltage	5V			20V		
Off-State Current	0.5 mA			1 mA		
Transition Voltage	5...15V			20...79V		
<b>PTC Thermistor Input</b>						
Type of Control Unit	Mark A					
Max. No. of Sensors in Series	6					
Max. Cold Resistance of PTC Sensor Chain	1500 $\Omega$					
Trip Resistance	3400 $\Omega$ $\pm$ 150 $\Omega$					
Reset Resistance	1500...1650 $\Omega$					
Short Circuit Trip Resistance	25 $\Omega$ $\pm$ 10 $\Omega$					

**Bulletin 825-P**  
**Modular Protection System**

**Specifications, continued**

**Mechanical Ratings**

Mechanical Ratings	
<b>Environmental</b>	
Ambient Temperature	Storage Operating (open)
	-40...+85°C (-40...+185°F) -20...+60°C (-4...+140°F)
Humidity (Operating)	5...95% Non-condensing
Maximum Altitude	2000 m
Vibration (per IEC 68-2-6)	3G
Shock (per IEC 68-2-27)	30G
<b>Control Terminals</b>	
Terminal Screw	M3
Cross Section (1 wire, stranded/solid)	0.14...2.5mm <sup>2</sup> (20...12 AWG)
Terminal Screw Torque	0.79 Nm (7 Lb-in)

**Electromagnetic Compatibility**

Electromagnetic Compatibility	
Electrostatic Discharge Immunity	Test Level
	8kV Air Discharge 6kV Contact Discharge 1 ① ②
	Performance Criteria
RF Immunity	Test Level
	10V/m 1 ① ②
	Performance Criteria
Electrical Fast Transient/Burst Immunity	Test Level
	4kV (Power) 2kV (Control and Comms) 1 ① ②
	Performance Criteria
Surge Immunity	Test Level
	2kV L-E 1kV L-L 1 ① ②
	Performance Criteria
Radiated Emissions	Class A
Conducted Emissions	Class A

① Performance Criteria 1 requires the DUT to experience no degradation or loss of performance.

② Environment 2.

**RTD Scanner Module**

RTD Scanner Module	
<b>Supply</b>	
Rated Supply Voltage $U_s$	110/240V AC
Operating Range	0.80...1.2 $U_s$
Rated Frequency	50/60 Hz $\pm$ 5 Hz
Max. Power Consumption	5 VA
Rated Insulation Voltage $U_i$	300V AC
Rated Impulse Strength $U_{imp}$	4kV
Pollution Degree	2
<b>Environmental</b>	
Ambient Temperature	Storage Operating (open)
	-40...+85°C (-40...+185°F) -20...+60°C (-4...+140°F)
Humidity (Operating)	5...95% Non-condensing
Maximum Altitude	2000 m
Vibration (per IEC 68-2-6)	3G
Shock (per IEC 68-2-27)	30G
<b>Inputs</b>	
Number of input channels	12
Type	3-wire
Compatibility	CU10, NI100, NI120 PT100 (per IEC 60751: 1983)
Range	-50...250°C
Accuracy	$\pm$ 2°C
Open Circuit Detection	> 250°C
Short Circuit Detection	< -50°C
<b>Control Terminals</b>	
Terminal Screw	M3
Cross Section (1 wire, stranded/solid)	0.25...2.5mm <sup>2</sup> (24...12 AWG)
Torque	0.4...0.6 Nm (3.5...5.3 Lb-in)
Degree of Protection	1P20