





# **OVERVIEW**

SYNC 2000 protocol gateway series of products are substation rugged communication devices with real-time embedded linux operating system, and supports for a host of automation protocols including, DNP 3.0 IEC 60870-5-101/103/104, DLMS/COSEM, Modbus as well as proprietary protocols like SPABus, Courier and various others. Devices come with an option to add an internal plugable cellular modem, and support secure VPN connections over dynamic IP.

#### **FEATURES**

### **Software Features**

- Support more than 40 protocols including IEC 60870-5-101/103/104, IEC 61850, DNP3.0, Modbus RTU/TCP, and DLMS/ COSEM
- Automatic startup, initialization with restart notification following the power restoration
- Multi master communication capability
- Up to 10000 data point support\*
- File upload/download support, remote configuration
- Time sync based on NTP/SNTP/NMEA/Protocol specific synchronization (IEC 104/DNP3.0 etc.)
- Transparent/tunneling support for remote configuration and disturbance collection
- · Remote Device Management from Kalki.io
- · SNMP Agent/ Manager for NMS Integration
- Can be configured to be used as a terminal server

## Reliability

- IEC 61850-3 compliant hardware#
- KEMA certified IEC 61850 server

#### Security

- IEC62351-3 transport layer security
- IEC62351-5/DNP3 secure authentication

- SSL based VPN with AES, DES or 3DES encryption over WAN/LAN
- Compliant to NERC-CIP security standard (refer to implementation document for details)

## **Enhance Capability**

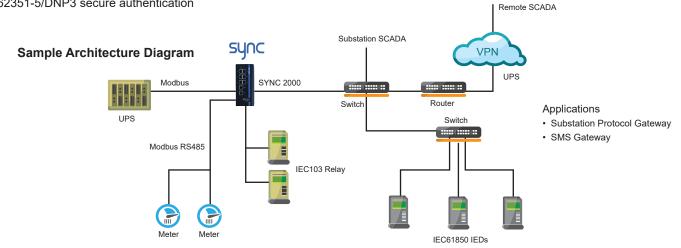
- Internal and external pluggable cellular modem (GPRS EDGE/ CDMA/HSPA/EVDO)
- External pluggable RF/PSTN modem
- Fibre Optic Ethernet#
- Wide range of AC and DC power supply\*\*
- Customization of existing protocol as well as addition of new protocol possible

### **MODELS**

- SYNC 2000 M1: 2 Serial, 1 Ethernet (Copper)
- SYNC 2000 M2: 6 Serial, 1 Ethernet (Copper)
- SYNC 2000 M3: 4 Serial, 2 Ethernet (Copper)
- SYNC 2000 M4: 6 Serial, 1 Ethernet (Fiber Optic)

### **RELATED PRODUCTS**

- · Kalki.io: Energy IoT Platform
- SYNC 4000: Control Center Gateway



	cification Sheet	SYNC 2000 - M1 (S2R1)	SYNC 2000 - M2/M4 (S6R1/S6F1)	SYNC 2000 - M3 (S4R2)
General	Management	EasyConnect configuration utility/web server/SNMP 8	SSH Interface over secure network	
	Maintenance	Direct over debug port or console port		
	System Protocols	TCP/IP, UDP/IP, SMTP, POP, HTTP, FTP, SNMP, ICMP, DHCP, BOOTP, Telnet, DNS,ARP, PPPoE, DDNS		
	Device Security	NERC/CIP compliant (refer to implementation document for details), SSHv2		
	Communication Security	IEC62351-3 and -5 (DNP3 secure authentication), SSL based VPN tunnel using Blowfish/AES/3DES		
	Logic Programming	AND/OR/NOT/Bit SHIFT/Split/Index support for digital and analog data delay operations		
	Redundancy	Downstream/upstream communication	<u> </u>	
	SMS Based Alarm		Available*	Not available
	Certifications	IEC61850-10 KEMA, IEC61850-3, CE	-valiable	140t available
	Standard Protocols	IEC 60870 5 101/103/104 DNP3 social/TCP Modbus	DTITIASCITATO IECESORE DI MO IECE1850** O	ETD SNIMD SNITD
	Standard Frotocois			
		ABB - RP570, 571, SPA bus Areva - Courier		
	Proprietary Protocols	pprietary Protocols SEL - SEL451, 421, 311, 300G RTK**, EXCOM**, CMC Master**, SPORT** Schneider - SEPAM Modbus** Triguard peer to peer**		
	Additional Protocol			
	Multi-master Protocol No, one-to-one conversion Yes, many-to-many conversion			
	Devices Supported			
	SPA	20	20	25
Communication Capability	DNP3, IEC60870, Modbus			
	and other Proprietary	50	50	64
	Protocols			
	Datapoints Supported	· · · · · · · · · · · · · · · · · · ·		-
	SPA	800	800	1600
	DNP3, IEC60870, Modbus			
		5000	5000	10000
	and other Proprietary	3000	0000	10000
	Protocols			
	Serial		4 D0000/405 D I45	
	Connector		4 RS232/485 - RJ45	4 RS232/485/422 - RJ45
			2 RS232 - RJ45	
	Data Rate 110bps - 38.4kbps			
	Ethernet			
	Connector		1 RJ45/ST FO**	2 RJ45
	Physical Layer	10/100 Mbps		
	Isolation	1500VAC min per IEEE802.3/ANSI X3.263		
	Fiber Optic Option**	NA	1 multi mode fiber with ST connector	NA
	FO Range	NA .	1200 meter	NA
	Analog	Via R485 expansion module		
IO Interfaces	Digital	Via R485 expansion module		
		Option 1 (SYNC 2000 PS-DC1): 19 - 58VDC		
	Power Supply	Option 2 (SYNC 2000 PS-ACDC1) 85 - 264VAC 50 -	60Hz 100 - 370VDC	12-48VDC
Power	Consumption	Option 2 (01110 2000 1 0-AODO 1) 00 - 204 VAO 30 -	00112, 100 - 370 V D O	
Requirements	Main Card	10W		
	Internal Plug-in Modem			NA
North Made		8W peak	ODDO/EDOE/ODMA/ILIODA/EV/DO	
Plug-in Modem	Internal		GPRS/EDGE/CDMA/HSPA/EVDO	NA
Options	External		RF modem, PSTN modem	NA
Physical	Dimensions (H x W x D)		164mm x 71mm x 140mm	60mm x 137mm x 100mm
	Weight (In grams)	1000 (excluding modem)	1000 (excluding modem)	530
Physical				
Physical	LED Indications	Power, LAN link/status, serial port RX/TX		
Physical				
Physical	LED Indications	Power, LAN link/status, serial port RX/TX		-10 oC 5 to 95% RH
Physical	LED Indications Mounting	Power, LAN link/status, serial port RX/TX DIN Rail		-10 oC 5 to 95% RH 60 oC, 5 to 95% RH
	LED Indications Mounting Cold Temperature test Hot Temperature test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC		60 oC, 5 to 95% RH
	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC	00m (70.0 kPa)	
	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30	•	60 oC, 5 to 95% RH 5 to 95% RH NA
	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC	•	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search)
	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3	•	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30	•	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A,
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 30 EN 55022:2006+A 1: 2007 Class A	•	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3	•	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A,
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 30 EN 55022:2006+A 1: 2007 Class A EN 55022:2006+A 1: 2007 Class A	X,Y, Z axis, 10g in X,Y, Z axis	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 30 EN 55022:2006+A 1: 2007 Class A EN 55022:2006+A 1: 2007 Class A	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet poi	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/-	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on \(^1\) EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 \(^1\) µs for common mode,	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axie EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on \(^1\) EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 \(^1\) µs for common mode,	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on ) EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 μs for common mode, Ethermet port ± 2kV, 1.2/50 μs for common mode DC Power port ± 2kV, 1.2/50 μs for common mode, ±	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, ± AC Power port ± 2kV, 1.2/50 µs for common mode, ±	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports  - 8 kV Air Discharge  1kV, 1.2/50 μs for differential mode 4kV, 1.2/50 μs for differential mode	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, ± CP ower port ± 2kV, 1.2/50 µs for common mode, ± AC Power port ± 4kV, 1.2/50 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports  - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge  Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, ± AC Power port ± 2kV, 1.2/50 µs for common mode, ±	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports  - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed. 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 2kV, 1.2/50 µs for common mode, ± Ethermet port ± 2kV, 1.2/50 µs for common mode, ± AC Power port ± 2kV, 1.2/50 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 -30 A/m continuous & 1000 A/m	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 4, 80%AM for DC power, serial and Ethernet port 1 for 1 sec	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 2 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, thermet port ± 2kV, 1.2/50 µs for common mode, ± AC Power port ± 4kV, 1.2/50 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports  - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port of or 1 sec cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on ) EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet poi IEC 61000-4-5: 2011 Serial port ± 4kV, 1.2/50 μs for common mode, ± Chernet port ± 2kV, 1.2/50 μs for common mode, ± AC Power port ± 4kV, 1.2/50 μs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1 sec 1 for 1 fect of the sec o	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed. 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 300 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-5: -2011 Serial port ± 4kV, 1.2/50 µs for common mode, ± 10 Enterrnet port ± 2kV, 1.2/5	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1 sec 1 for 1 fect of the sec o	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, therrnet port ± 2kV, 1.2/50 µs for common mode, ± C 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port	M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode ., 80%AM for DC power, serial and Ethernet port 1 for 1 sec cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz nagnetic field strength: 30 A/m Hz Common Mode: up to ± 2.5 kV Differential	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search; 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet poi IEC 61000-4-5: 2011 Serial port ± 4kV, 1.2/50 µs for common mode, ± HCC 61000-4-8: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous IEC 61000-4-12 Damped Oscillatory Frequency: 1 MIMode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 ME 200 MHz to 10 MHz 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for serial port at 10 MHz Common Mode: up to ± 2.5 kV for se	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz 1 nagnetic field strength: 30 A/m 1 hz Common Mode: up to ± 2.5 kV Differential 1 and Ethernet port	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search; 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge  Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, therrnet port ± 2kV, 1.2/50 µs for common mode, ± C 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz 1 nagnetic field strength: 30 A/m 1 hz Common Mode: up to ± 2.5 kV Differential 1 and Ethernet port	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search; 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA NA NA NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 2 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, ± BC 61000-4-6: 2004 - 2005 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-12 Damped oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port and IEC 61000-4-12 Damped oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port at IEC60255-5 2000-12, Ed2.0 ±5kV for power port and	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge  Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 2 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-12 Damped Oscillatory Frequency: 1 Mi Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ± 2.5 kV for serial port an IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search; 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 2 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, ± BC 61000-4-6: 2004 - 2005 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-12 Damped oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port and IEC 61000-4-12 Damped oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port at IEC60255-5 2000-12, Ed2.0 ±5kV for power port and	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axi EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 2 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-2:2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-12 Damped Oscillatory Frequency: 1 Mi Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ± 2.5 kV for serial port an IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode c, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axi EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Humidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-5: 2011 Serial port ± 4kV, 1.2/50 μs for common mode, ± IEC 61000-4-5: 2011 Serial port ± 4kV, 1.2/50 μs for common mode, ± AC Power port ± 2kV, 1.2/50 μs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 -30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port and IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at IEC 61000-4-29: 2000 - 0% short interruption for 0.03 variation for 3 sec	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1 sec 1 cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz 1 nagnetic field strength: 30 A/m 1 Hz Common Mode: up to ± 2.5 kV Differential 1 and Ethernet port 1 earth 1 5 to 150kHz 2 sec, 40% and 70% dips for 0.3 sec, 80% & 120%	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axi EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts Ripple on DC power line	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 300 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 300 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4: 2004 - ±4 kV serial ports, Ethernet portion in the series of the s	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1 sec 1 cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz 1 nagnetic field strength: 30 A/m 1 Hz Common Mode: up to ± 2.5 kV Differential 1 and Ethernet port 1 earth 1 5 to 150kHz 2 sec, 40% and 70% dips for 0.3 sec, 80% & 120%	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axi EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental  Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts Ripple on DC power line immunity test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet port IEC 61000-4-5: 2011 Serial port ± 4kV, 1.2/50 μs for common mode, Etherrnet port ± 2kV, 1.2/50 μs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-8: 2001 - 30 A/m continuous & 1000 A/m IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T vise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous n	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 1 for 1 sec 1 cy 1MHz: ±-10% Repetition rate: 400 /s for 1 MHz 1 nagnetic field strength: 30 A/m 1 Hz Common Mode: up to ± 2.5 kV Differential 1 and Ethernet port 1 earth 1 5 to 150kHz 2 sec, 40% and 70% dips for 0.3 sec, 80% & 120%	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge  Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts Ripple on DC power line immunity test AC Voltage Dips &	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-3: 2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, EC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous m IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ± 2.5 kV for serial port at IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-11 - AC Power port	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 μs for differential mode 4kV, 1.2/50 μs for differential mode 5, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 2 for 1 for 1 sec 3 for 1 for 1 sec 4 for 1 for 1 sec 4 for 1 for 1 sec 5 for 1 for 1 sec 6 for 1 for 1 sec 6 for 1 for 1 sec 6 for 1 for 1 sec 7 for 1 for 1 sec 8 for 1 for 1 sec 9 for 1 for 1 sec 1 for 2 for 1 for 1 sec 1 for 2 for 1 sec 1 for 2 for 1 sec 1 for 2 for 2 for 2 for 3 for 2 for 3 sec 1 for 3 for 3 for 3 for 3 for 3 sec 1 for 2 for 3 for	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental  Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge Surge Protection Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts Ripple on DC power line immunity test	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 300 As per IEC60870-2-2, Class Am, 5Hz to 500Hz on 3 As per IEC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% AI IEC 61000-4-4:2004 - ±4 kV serial ports, Ethernet por IEC 61000-4-5: -2011 Serial port ± 4kV, 1.2/50 μs for common mode, therrnet port ± 2kV, 1.2/50 μs for common mode, ± AC Power port ± 2kV, 1.2/50 μs for common mode, ± AC Power port ± 2kV, 1.2/50 μs for common mode, ± IEC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port at IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ±2.5 kV for serial port at IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-11 - AC Power port 0% short Interruption for 250 cycles, 0% of AC mains	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 1, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 2 for 1 for 1 magnetic field strength: 30 A/m 1 Hz Common Mode: up to ± 2.5 kV Differential 2 for 1 f	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search) 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge +/- 15 kV Air Discharge  NA
Environmental  Emission	LED Indications Mounting Cold Temperature test Hot Temperature test Hunidity test Barometric Pressure test Vibration and Shock test Conducted Emission Radiated Emission Radiated Susceptibility Electrical Fast Transient Electrostatic Discharge  Surge Protection  Induced (Conducted) RFI Power Frequency Magnetic Field immunity Damped Oscillatory Magnetic fields immunity test Damped Oscillatory Wave immunity Impulse voltage Immunity Conducted Common mode disturbances Immunity DC Voltage Dips & Interrupts Ripple on DC power line immunity test AC Voltage Dips &	Power, LAN link/status, serial port RX/TX DIN Rail As per IEC60870-2-2 tested at -40 oC As per IEC60870-2-2 tested at 70 oC As per IEC60870-2-2 95% RH 55oC and 55oC IEC 60870-2-2 Ed 1.0 Test range 0 (101.3 kPa) to 30 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 As per IECC60870-2-2, Class Am, 5Hz to 500Hz on 3 EN 55022:2006+A 1: 2007 Class A  EN 55022:2006+A 1: 2007 Class A  IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-3: 2006 -80 - 1000 MHz : 10V/m 80% Al IEC 61000-4-3: 2001 - +/- 6 kV Contact Discharge, +/- IEC 61000-4-5:- 2011 Serial port ± 4kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, Etherrnet port ± 2kV, 1.2/50 µs for common mode, EC 61000-4-6: 2004 - 0.15 - 80 MHz: 10 Vrms 1 kHz IEC 61000-4-10 T rise: 75 ±- 20% Oscillation frequen ± 10%, Burst duration: Not less than 2s Continuous m IEC 61000-4-12 Damped Oscillatory Frequency: 1 MI Mode: up to ±1.0 kV for DC power port 1 MHz Common Mode: up to ± 2.5 kV for serial port at IEC 61000-4-16 Ed 1.1 30/300V at 50Hz, 3V/30V at IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-17 10% of the Nominal DC voltage AC II IEC 61000-4-11 - AC Power port	X,Y, Z axis, 10g in X,Y, Z axis  M, 1 kHz sine wave rt, DC Power Ports - 8 kV Air Discharge  1kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 4kV, 1.2/50 µs for differential mode 1, 80%AM for DC power, serial and Ethernet port 1 for 1 sec 2 for 1 for 1 magnetic field strength: 30 A/m 1 Hz Common Mode: up to ± 2.5 kV Differential 2 for 1 f	60 oC, 5 to 95% RH 5 to 95% RH NA 1 g @ IEC-68-2-6, sine wave (resonance search; 5-500 Hz, 1 Oct/min, 1 cycle, 13 mins 17 sec/axis EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024 NA NA IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge; +/- 15 kV Air Discharge  NA

<sup>\*</sup> Available when packet data is not used; \*\* Need to be ordered seperately; # Model dependent

