

Introduction

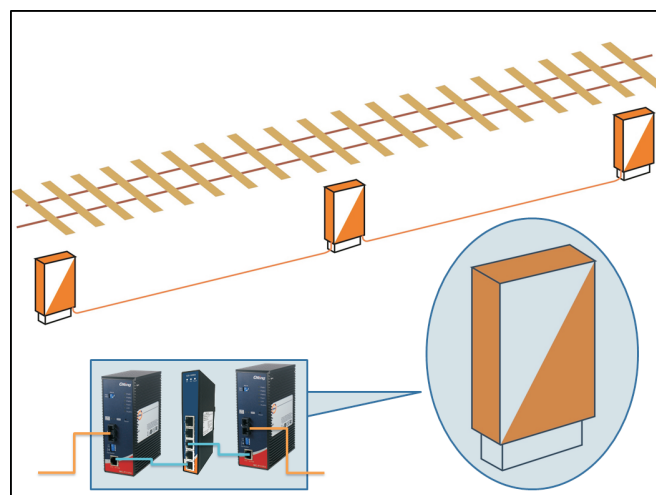
IMC-P111 series is a cost-effective solution for the conversion between 10/100Base-T(X) and 100Base-FX interface, it allows you to extend communication distance with optical fiber. **IMC-P111 series** is designed for power substation application and rolling stock application, fully compliant with the requirement of IEC 61850-3 and IEEE 1613. **IMC-P111 series** supports MDI/MDIX auto detection, so you don't need to use crossover Ethernet cable. **IMC-P111 series** with wide operating temperature range from -40 ~ 70°C and accepts a wide voltage range power inputs, so it is suitable for harsh operating environments.

IMC-P111 series also support the **LFP (Link Fault Pass-through)** feature. When one side of the link fails, the other side continues transmitting packets, and waiting for a response that never arrives from the disconnected side. Use the DIP-Switch to enable the LFP function, then **IMC-P111 series** will force the link to shutdown as soon as noticed that the other link is failed, giving the application software a chance to react to the situation. Therefore, the **IMC-P111 series** is reliable media converter and can satisfy most demand of power substation and rolling stock application.

Features

- Designed for power substation application and fully compliant with the requirement of IEC 61850-3 and IEEE 1613
- Leading EN50155-compliant Ethernet switch for rolling stock application
- Supports 1 port 10/100Base-T(X) auto-negotiation with auto-MDI/MDI-X
- Supports Ethernet to fiber or Ethernet to SFP conversion
- Supports LFP (Link Fault Pass-through) function
- Supports full/half duplex operation mode
- Supports store and forward transmission
- Supports relay output for power failed alarm
- Provided DIP-Switch to setting function
- High reliability and rigid IP-30 housing
- DIN-Rail and wall-mount enabled

Connections of Media converter and LFP function



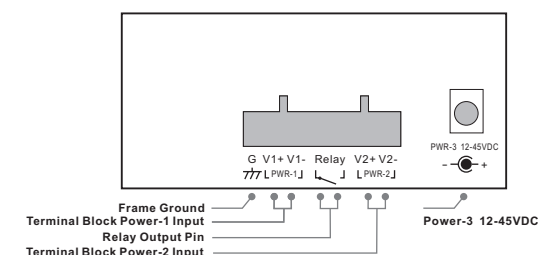
Specifications

ORing Media Converter Model	IMC-P111FX-MM	IMC-P111FX-SS	IMC-P111P
Physical Ports			
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	1	1	1
Fiber Port Specification			
Fiber Ports Number	1	1	-
Fiber Ports Standard	100Base-FX	100Base-FX	-
Fiber Mode	Multi-mode	Single-mode	-
Fiber Diameter (µm)	62.5/125 µm 50/125 µm	9/125 µm	-
Fiber Optical Connector	SC	SC	-
Typical Distance (Km)	2 Km	30 Km	-
Wavelength (nm)	1310 nm	1310 nm	-
Max. Output Optical Power (dbm)	-14 dbm	-8 dbm	-
Min. Output Optical Power (dbm)	-23.5 dbm	-15 dbm	-
Max. Input Optical Power (Saturation)	0 dbm	0 dbm	-
Min. Input Optical Power (Sensitivity)	-31 dbm	-34 dbm	-
Link Budget (db)	7.5 db	19 db	-
100Base-FX SFP port	-	-	1
Technology			
Ethernet standards	IEEE 802.3 for 10Base-T, IEEE 802.3u for 100Base-TX and 100Base-FX, IEEE 802.3x for Flow control		
Processing	Store-and-Forward		
DIP-Switch setting	DIP-Switch 1 for LFP mode selection : (ON) enable / (OFF) disable DIP-Switch 2 for Ethernet speed selection : (ON) 10Mbps / (OFF) 10/100Mbps Auto-negotiate DIP-Switch 3 for Ethernet full/half duplex selection : (ON) Half-Duplex / (OFF) Full/Half-Duplex Auto-negotiate DIP-Switch 4 for fiber full/half duplex selection : (ON) Half-Duplex / (OFF) Full Duplex		
Alarm DIP-Switch			
DIP-Switch 1	Power-1 failed warning : (ON) enable, (OFF) disable		
DIP-Switch 2	Power-2 failed warning : (ON) enable, (OFF) disable		
LED Indicators			
LV model Power indicator	Green: Power LED x 3 (ON : power input on-line / (OFF) power input off-line		
HV model Power indicator	Green: Power LED x 2 (ON : power input on-line / (OFF) power input off-line		
10/100Base-T(X) RJ 45 port indicator	Green for port Link/Act - (ON) Link up (Blinking) Acting / (OFF) Link down Amber for port speed indicator - (ON) 100Mbps / (OFF) 10Mbps		
100Base-FX fiber port indicator	Green for fiber port Link/Act - (ON) Link up / (Blinking) Acting / (OFF) Link down Amber for fiber port duplex indicator- (ON) Full-Duplex/ (OFF) Half-Duplex		
LFP statue indicator	Amber LED - (ON) LFP indication / (OFF) LFP function disable or ports link up		
Fault indicator	Amber : Indicate unexpected event occurred		
10/100Base-T(X) duplex indicator	Green for port duplex indicator - (ON) Full-Duplex / (OFF) Half-Duplex		
Power			
LV Model Input Power	Triple DC inputs. 12-48VDC on 7-pin terminal block, 12-45VDC on power jack		
HV Model Input Power	Dual 100~240VAC power inputs on 8-pin terminal block		
Power consumption(Typ.)	LV model : 10.56 Watts, HV model : 100VAC/4.8Watts , 240VAC/5.8 Watts)	LV model : 10.08 Watts, HV model : 100VAC/4.8Watts , 240VAC/5.8 Watts)	LV model : 10.56 Watts, HV model : 100VAC/4.2Watts , 240VAC/5.2 Watts)
Overload current protection	Present		
Reverse polarity protection	Present on terminal block		
Physical Characteristic			
Enclosure	IP-30		
Dimension (W x D x H)	54.1(W) x 106.1(D) x 145.4(H) mm (2.13 x 4.18 x 5.72 inch.)		
Weight (g)	LV model : 660 g HV model : 802 g		LV model : 650 g HV model : 680 g

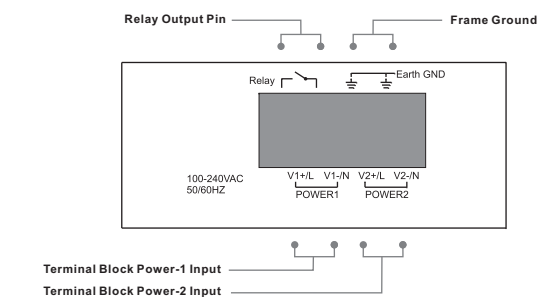
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years

Power Connection Guide

LV model



HV model



DIP Switch Function

Mode Select

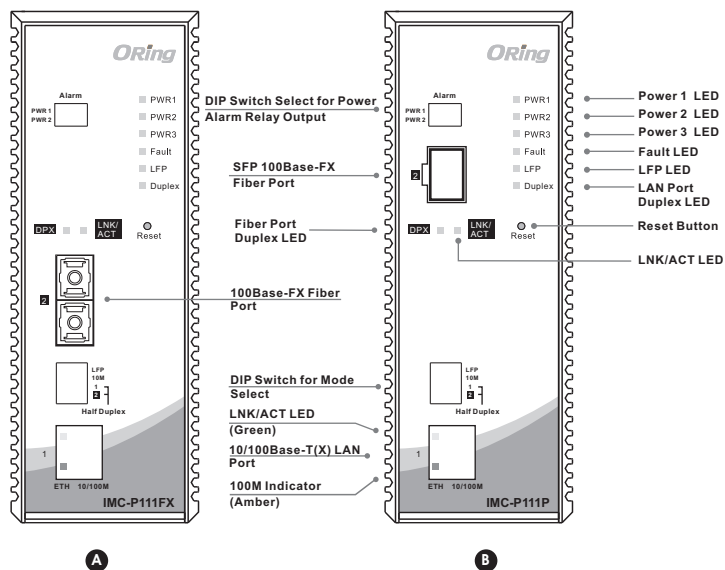
DIP-Switch	Description
1 ON	LFP mode enable
1 OFF	LFP mode disable
2 ON	Ethernet speed 10Mbps
2 OFF	Ethernet speed 10/100Mbps Auto-negotiate
3 ON	Ethernet Half-duplex
3 OFF	Ethernet Full/Half-duplex Auto-negotiate
4 ON	Fiber Half-duplex
4 OFF	Fiber Full-duplex

Power Side

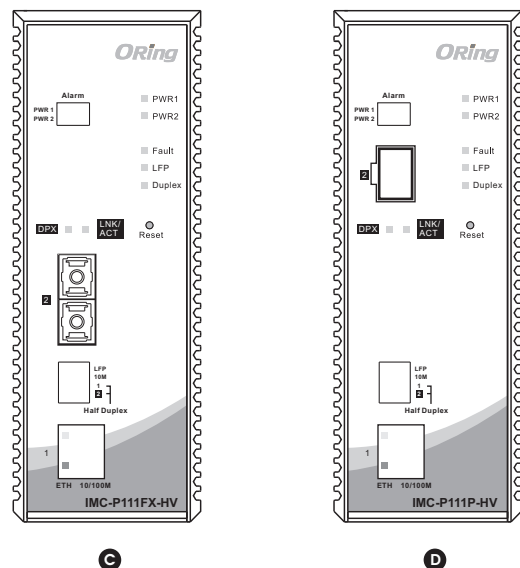
DIP-1	DIP-2	Description
OFF	OFF	Power failure relay alarm disabled
ON	OFF	PWR-1 failure, relay alarm enabled
OFF	ON	PWR-2 failure, relay alarm enabled
ON	ON	PWR-1 or PWR-2 failure, relay alarm enabled

Front Panel

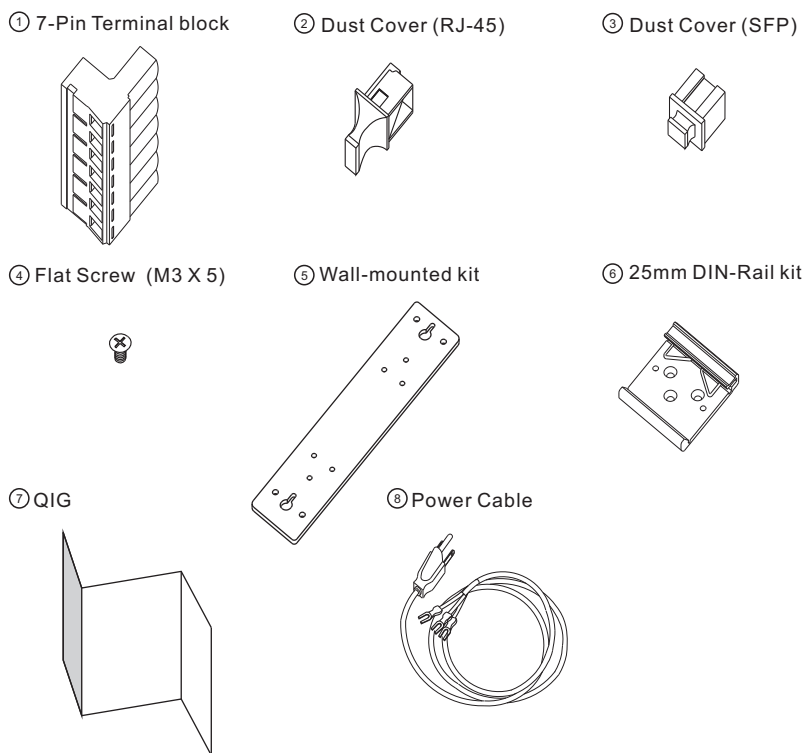
LV model



HV model



Accessory

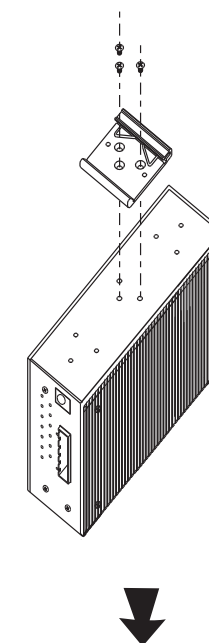


Packing list

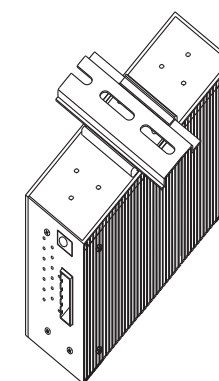
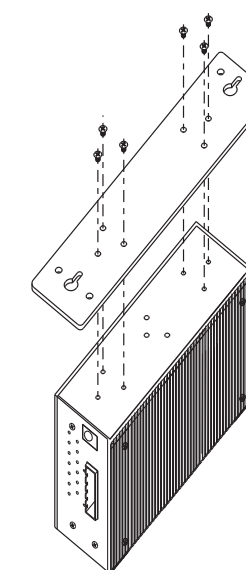
Model name	Front Panel	Model Description	Accessory
IMC-P111FX-MM-SC-LV	A	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, multi-mode, 2Km/1310nm, SC connector, 12~48VDC power inputs	⊗ X 1, ⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1
IMC-P111FX-SS-SC-LV	A	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, single-mode, 30Km/1310nm, SC connector, 12~48VDC power inputs	⊗ X 1, ⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1
IMC-P111P-LV	B	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, SFP socket, 12~48VDC power inputs	⊗ X 1, ⊗ X 1, ⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1
IMC-P111FX-MM-SC-HV	A	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, multi-mode, 2Km/1310nm, SC connector, 100~240VAC power inputs	⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1, ⊗ X 2
IMC-P111FX-SS-SC-HV	A	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, single-mode, 30Km/1310nm, SC connector, 100~240VAC power inputs	⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1, ⊗ X 2
IMC-P111P-HV	B	Industrial IEC 61850-3 Ethernet to fiber media converter with 1x10/100Base-T(X) and 1x100Base-FX, SFP socket, 100~240VAC power inputs	⊗ X 1, ⊗ X 6, ⊗ X 1, ⊗ X 1, ⊗ X 1, ⊗ X 2

Installation

Din-Rail Install Step



Wall-mounted Install Step



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