MEDIA CONVERTER INDUSTRIAL

ORing

Quick Installation Guide

IMC-V111ET-TB

Industrial Extended Media Converter

Introduction

The **IMC-V111ET-TB** is a cost-effective solution for extending an Ethernet connection beyond its inherent distance limitation. **IMC-V111ET-TB** can extend the distance to 2,400 meters using 26AWG cable. It has a switching architecture with 1 RJ-45 100Mbps Ethernet port and one asymmetric or symmetric Ethernet over VDSL2 port which is a terminal block connector supports 2-wired transmission. **IMC-V111ET-TB** provides a wide operating temperature range from -40~75℃, making it suitable for harsh operating environments.

Package Contents

The series is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

Contents	Pictures	Number
IMC-V111ET-TB		X 1
DIN-rail Kit		X 1
Wall-mount Kit		X 2
QIG		X 1
4-pin terminal block		X 1

Preparation

Before installation, make sure you have all of the package contents available.

Safety & Warnings

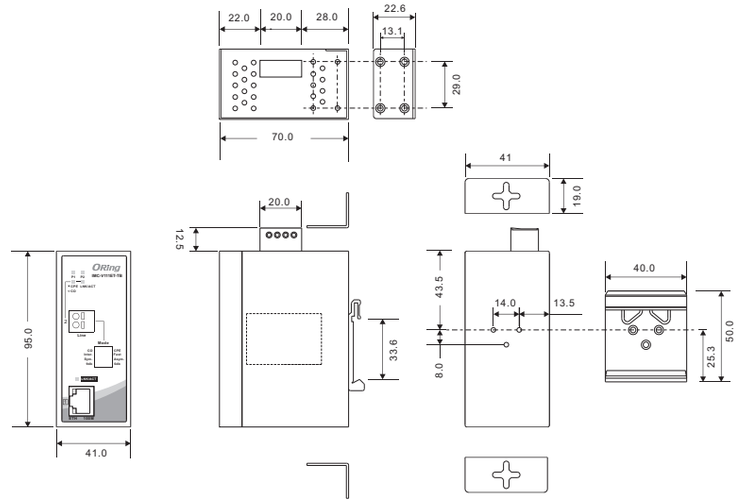
Elevated Operating Ambient: If installed in a closed cabinet, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow: Installation of the equipment should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading: Mounting of the equipment in the din-rail should be such that a hazardous condition is not achieved due to uneven mechanical loading.

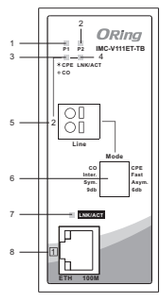
Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Dimension (Unit: mm)



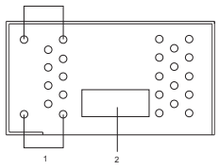
Panel Layouts

Front Panel



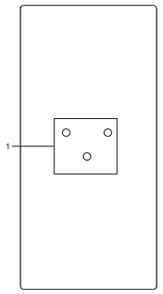
1. PWR1 LED
2. PWR2 LED
3. CEP mode LED
4. LNK/ACT LED for extension port
5. Extension port
6. DIP switch for mode selection
7. LNK/ACT LED for LAN port
8. LAN Port

Top Panel



1. Wall-mount screw holes
2. Terminal block

Real Panel

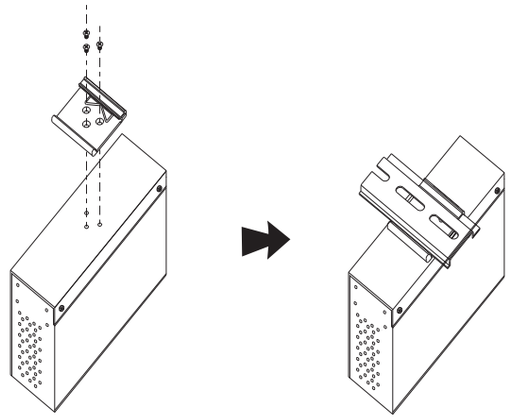


1. Din-rail screw holes

Installation

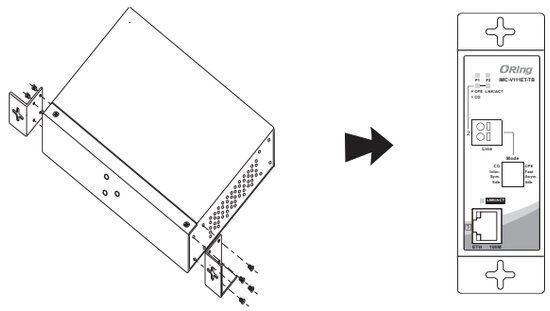
DIN-rail Installation

Step 1: Slant the switch and screw the Din-rail kit onto the back of the switch, right in the middle of the back panel.
Step 2: Slide the switch onto a DIN-rail from the Din-rail kit and make sure the switch clicks into the rail firmly.



Wall-mounting

Step 1: Screw the two pieces of wall-mount kits onto both sides of the switch. A total of eight screws are required, as shown below.
Step 2: Use the switch, with wall mount plates attached, as a guide to mark the correct locations of the four screws.
Step 3: Insert four screw heads through the large parts of the keyhole-shaped apertures, and then slide the switch downwards. Tighten the four screws for added stability.



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Network Connection

The **IMC-V111ET-TB** has a standard Ethernet port. According to the link type, the device uses CAT 3,4, 5,5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

For pin assignments for different types of cables, please refer to the following tables.

100Base-TX RJ-45	
Pin Number	**Assignment**
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

100Base-TX MDI/MDI-X		
Pin Number	**MDI port**	**MDI-X port**
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

100Mbps Extension port Terminal Block	
Pin Number	**Assignment***
1	D1+
2	D1-

100Mbps Extension port Terminal Block	
Pin Number	**Assignment***
1	D1+
2	D1-
3	D2+
4	D3+
5	D3-
6	D2-
7	D4+
8	D4-

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

DIP Switch Setting

DIP-switch 1 for CPE/CO (Slave/Master) mode select :	(ON) CPE mode	(Off) CO mode
DIP-switch 2 for fast/interleaved mode select :	(ON) Fast mode	(Off) Inter. mode
DIP-switch 3 for Asymmetric/Symmetric mode select :	(ON) Asym. mode	(Off) Sym. mode
DIP-switch 4 for SNR mode select :	(ON) 6db mode	(Off) 9db mode

Wiring

The switch supports dual redundant power supplies which are located on the 4-pin terminal block.

STEP 1: Insert the negative/positive wires into the V-/V+ terminals, respectively.

STEP 2: To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

Configurations

After installing the device and connecting cables, the green power LED should turn on. Please refer to the following tablet for LED indication.

LED indication table

LED	Color	Status	Description
PW1	Green	On	DC power module 1 activated
PW2	Green	On	DC power module 1 activated
10/100Base-TX RJ45 Port			
LNK/ACT	Green	On	Port is linked/ Transmitting data
Ethernet Extender Port			
LNK/ACT	Green	On	Port is linked/ Transmitting data
CO/CEP mode	Green	On	CEP mode
		Off	CO mode

Specifications

ORing Extended Converter Model	**IMC-V111ET-TB**
Physical Ports	
100Base-TX Ports in RJ45 Auto MDI/MDIX	**1**
100Mbps Ethernet Extender Ports	**1 (support 2-wired)**
Technology	
Ethernet Standards	IEEE 802.3u for 100Base-TX, VDSL ITU T G. 993.1, VDSL2 ITU T G. 993.2
Processing	Store-and-Forward
Performance	
VDSL speed	Refer to Appendix A.
Power	
Input power	Dual 12~48 VDC power inputs at 4-pin terminal block
Power consumption(Typ.)	4.75Watts
Overload current protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	41(W) x 70(D) x 95.5(H)mm (1.61x 2.76 x 3.76inch.)
Weight (g)	272 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 75°C (-40 to 167°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
Warranty	5 years

Appendix A

Loop Length (m, PE **0.4mm** loop)	Annex-17a-A-17a-eu32_I-8/2			
	Downstream		Upstream	
	ActDataRate (Mbps)	Noise Margin Reported (dB)	ActDataRate (Mbps)	Noise Margin Reported (dB)
0	101.0	14.8	52.5	7.2
200	101.0	12.4	52.5	7
400	88.2	6.6	45.8	6.8
600	60.5	5.9	30.4	6.3
800	44.6	6.1	12.7	6.5
1000	33.5	6.3	5.6	6.1
1200	28.4	7.4	2.1	6
1400	21.5	7.5	0.7	6
1600	16.8	7.1	0.7	6.3
1800	12.9	7.4	0.7	6.2
2000	9.8	7.6	0.8	6.1
2200	7.7	7.4	0.8	6.1
2400	5.9	7.4	0.7	6.2

Loop Length (m, PE **0.4mm** loop)	Annex-B-B7-9_I-8/2			
	Downstream		Upstream	
	ActDataRate (Mbps)	Noise Margin Reported (dB)	ActDataRate (Mbps)	Noise Margin Reported (dB)
0	71.7	7.1	76.4	7.1
200	69.6	7.7	74.7	7.1
400	60.0	7.1	65.3	6.9
600	46.8	6.4	44.6	6.5
800	37.8	6.8	19.6	6.1
1000	29.5	6.3	9.1	5.7
1200	26.1	6.8	4.2	5.7
1400	22.2	7.8	1.2	5.6
1600	18.0	7.4	0.7	6.2
1800	14.5	7.2	0.7	6.2
2000	11.5	7.2	0.8	5.9
2200	9.3	7.3	0.7	6
2400	7.4	7.3	0.6	6.1

Loop Length (m, PE **0.4mm** loop)	Annex-30a-A-30a-eu32_I-8/2			
	Downstream		Upstream	
	ActDataRate (Mbps)	Noise Margin Reported (dB)	ActDataRate (Mbps)	Noise Margin Reported (dB)
0	101.0	25	101.0	8.2
200	101.0	19.4	97.1	6.3
400	100.9	6	53.3	5.7
600	60.8	5.8	32.8	7
800	39.3	5.6	15.4	8.9
1000	31.9	6.3	5.5	7
1200	29.2	7.2	2.1	6.1

Loop Length (m, PE **0.4mm** loop)	Annex-B-B7-10_I-8/2			
	Downstream		Upstream	
	ActDataRate (Mbps)	Noise Margin Reported (dB)	ActDataRate (Mbps)	Noise Margin Reported (dB)
0	101.0	17.6	101.0	17.4
200	101.0	10.2	101.0	17.8
400	64.8	6.3	96.2	6.8
600	46.9	5.9	51.5	6.6
800	32.6	8.1	21.0	7.7
1000	29.2	6.3	9.1	6
1200	25.7	7.5	4.9	5.6

ORing

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