



**For Outdoor Applications
(Using 100 Series
Converters)**

1:1 REDUNDANT SWITCHOVER UNIT



FEATURES

- Remote control (RS485)
- Remote status
- Automatic/manual control from both local and remote mode
- Multiple transfer switches
- Extended temperature range

OPTIONS

- Remote RS422
- Extended RF frequency range

The 1:1 Redundant Switchover Unit is designed for use with two 100 Series outdoor converters, one on-line (Unit A) and the second in a standby mode (Unit B). The rugged package allows mounting in an outdoor environment. A fault condition in the on-line Unit A, or an operator generated command, will switch the standby Unit B to the on-line position and remove Unit A from the transmission path.

The 1:1 Redundant Switchover Unit is designed to ensure continuous operation allowing a unit fault to be repaired and/or routine maintenance to be performed without disruption of signal transmission.

1:1 SWITCHOVER UNIT MODEL NUMBERS

WITH INTERNAL COAXIAL SWITCHES

Model	IF Switch Type	RF Switch Type
TIU-N/N	N FEMALE	N FEMALE
TIU-N/S	N FEMALE	SMA FEMALE
TIU-B/N	BNC FEMALE	N FEMALE
TIU-B/S	BNC FEMALE	SMA FEMALE

WITH INTERNAL COAXIAL SWITCHES, FOR UP/DOWNCONVERTER APPLICATIONS

Model	IF Switch Type	RF Switch Type
TIU-N/N-UD	N FEMALE	N FEMALE
TIU-N/S-UD	N FEMALE	SMA FEMALE
TIU-B/N-UD	BNC FEMALE	N FEMALE
TIU-B/S-UD	BNC FEMALE	SMA FEMALE

WITH EXTERNAL WAVEGUIDE RF SWITCH

Model	IF Switch Type	RF Switch Type
TIU-N/75	N FEMALE	WR-75
TIU-S/75	SMA FEMALE	WR-75
TIU-B/75	BNC FEMALE	WR-75
TIU-N/42	N FEMALE	WR-42
TIU-S/42	SMA FEMALE	WR-42
TIU-B/42	BNC FEMALE	WR-42
TIU-N/28	N FEMALE	WR-28
TIU-S/28	SMA FEMALE	WR-28
TIU-B/28	BNC FEMALE	WR-28

WITH EXTERNAL WAVEGUIDE RF SWITCHES FOR UP/DOWNCONVERTER APPLICATIONS

Model	IF Switch Type	RF Switch Type
TIU-N/75-UD	N FEMALE	WR-75
TIU-S/75-UD	SMA FEMALE	WR-75
TIU-B/75-UD	BNC FEMALE	WR-75
TIU-N/42-UD	N FEMALE	WR-42
TIU-S/42-UD	SMA FEMALE	WR-42
TIU-B/42-UD	BNC FEMALE	WR-42
TIU-N/28-UD	N FEMALE	WR-28
TIU-S/28-UD	SMA FEMALE	WR-28
TIU-B/28-UD	BNC FEMALE	WR-28

SWITCH SPECIFICATIONS

Type	Frequency	Insertion Loss (Max.)	Amplitude Flatness/40 MHz	Return Loss (Min.)	Isolation (Min.)
COAXIAL					
BNC, N	50–180 MHz	0.3 dB	0.2 dB	20 dB	60 dB
N, SMA	0.95–4 GHz	0.3 dB	0.2 dB	18 dB	60 dB
N, SMA	4–8 GHz	0.4 dB	0.3 dB	16 dB	60 dB
SMA	8–12.4 GHz	0.5 dB	0.3 dB	14 dB	55 dB
SMA	12.4–18 GHz	0.6 dB	0.5 dB	12 dB	50 dB
WAVEGUIDE					
WR-75	10–15 GHz	0.1 dB	0.1 dB	25 dB	60 dB
WR-42	18–26.5 GHz	0.1 dB	0.1 dB	25 dB	60 dB
WR-28	26.5–40 GHz	0.15 dB	0.1 dB	25 dB	55 dB

GENERAL SPECIFICATIONS

MODES OF OPERATION

Local mode.....	Commands are received from the keys on the internal panel.
Remote mode.....	Commands are received from a remote system controller via the remote interface connector. All internal panel keys are disabled, with the exception of local/remote mode selection.
Automatic mode	Switchover occurs if a fault is detected in the on-line unit.
Manual mode	Switchover may be executed either via the internal panel keys (local mode) or the remote interface (remote mode).

INTERNAL PANEL FUNCTIONS

Commands	Unit A: On line/standby Unit B: On line/standby
Mode selection	Local/remote Auto/manual
Address selection	64–95
Baud rate selection	9600 4800 2400 1200 600
Parity	Even, Odd, None

ALARMS (available on internal panel and over remote interface)

Unit A
Unit B
Power supply A
Power supply B
TIU

REMOTE

Commands	Unit A: On line Unit B: On line Auto Manual
Status	Unit A: On line Unit A: Standby Unit B: On line Unit B: Standby Remote Local Auto Manual TIU normal TIU fail Unit A: Normal Unit A: Fail Unit B: Normal Unit B: Fail

INTERNAL PANEL



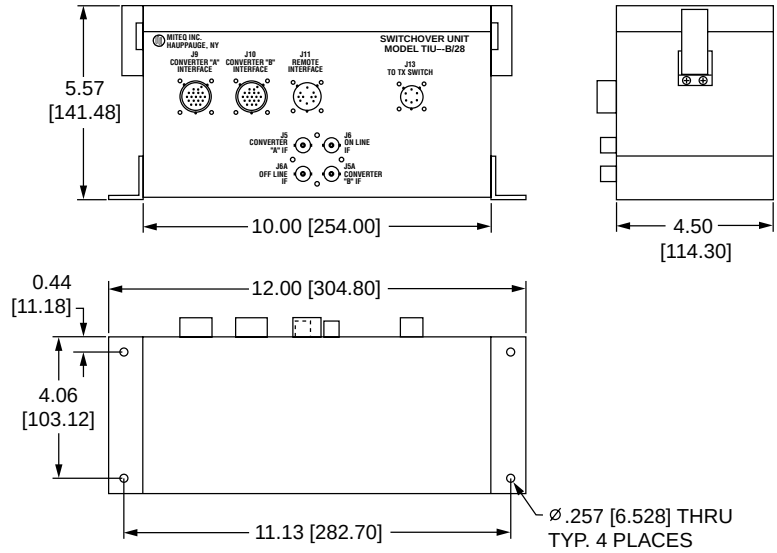
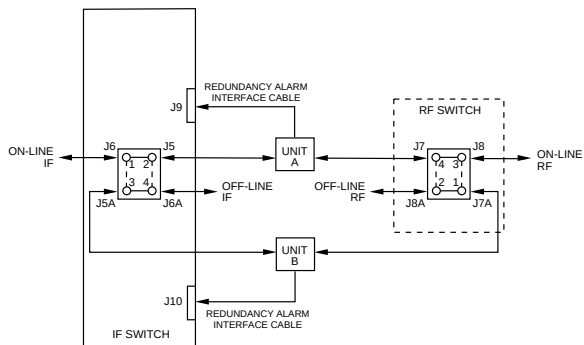
OPTIONS

1. Extended RF frequency range (available with SMA switches only).
 - A. 22 GHz extended RF frequency range.
 - B. 26.5 GHz extended RF frequency range.
17. Remote interface.
 - A. RS422 remote control.

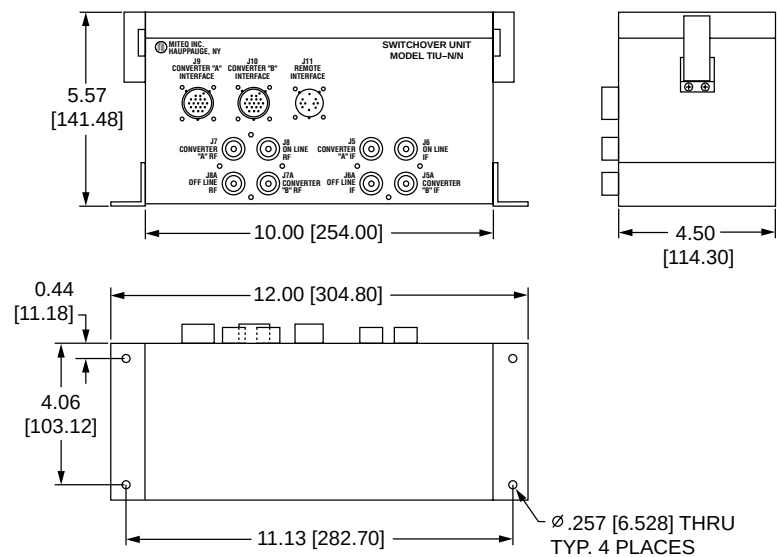
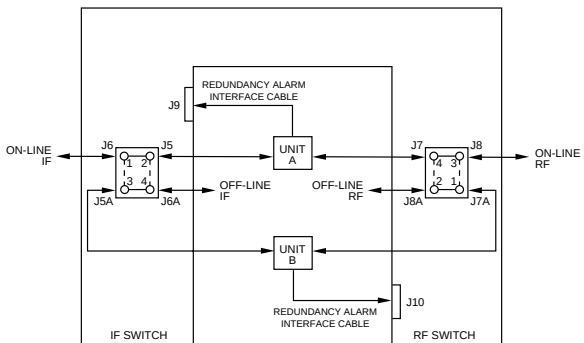
Note: Missing option numbers are not applicable to this product.

OUTLINES AND CONFIGURATIONS FOR STANDARD UNITS

UNIT WITH EXTERNAL WAVEGUIDE RF SWITCH



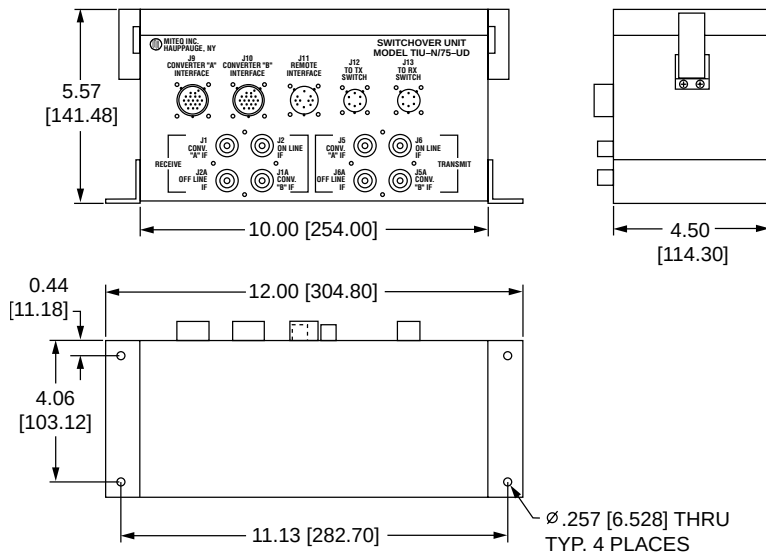
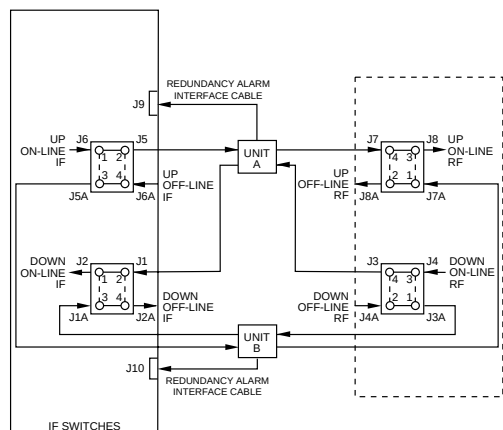
UNIT WITH TWO INTERNAL COAXIAL SWITCHES



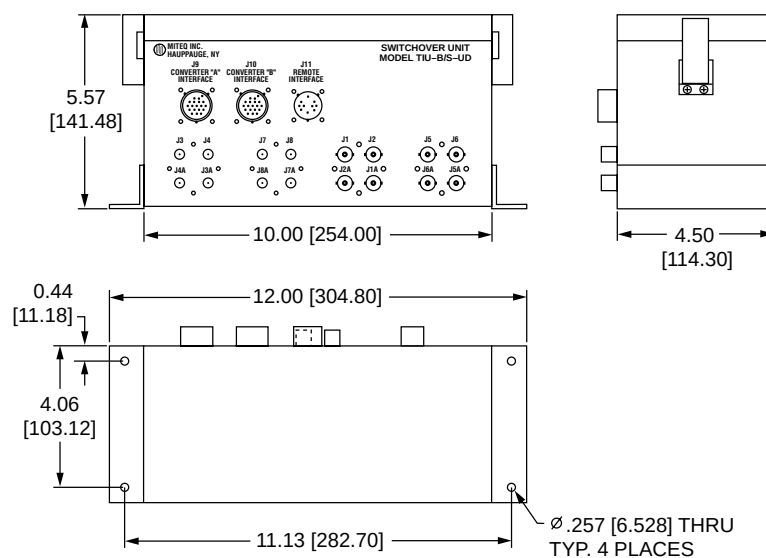
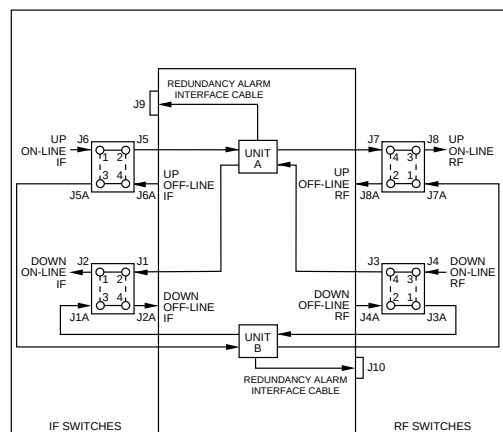
Note: Dimensions shown in brackets [] are in millimeters.

OUTLINES AND CONFIGURATIONS FOR UP/DOWN APPLICATIONS

UNIT WITH EXTERNAL WAVEGUIDE RF SWITCHES



UNIT WITH FOUR INTERNAL COAXIAL SWITCHES



Note: Dimensions shown in brackets [] are in millimeters.

1:1 REDUNDANT SWITCHOVER UNIT FOR OUTDOOR APPLICATIONS

PRIMARY POWER REQUIREMENTS

DC power supplied from 100 Series converters

Power consumption..... 5 W typical steady state, 30 W peak during switchover

SWITCH SPECIFICATIONS

Switch type..... Coaxial/waveguide, four-port transfer

Switch contacts..... Break-before-make, wiping

Switch drive..... Latching

Switching speed..... 150 ms maximum

PHYSICAL

Weight..... 6 pounds typical

Overall dimensions..... 12" x 5.6" panel height x 4.5" maximum

Connectors

Signal connectors

IF..... See model number table

RF..... See model number table

Remote interface connector..... MS3116E12-10P (mating connector supplied)

Converter "A" interface..... MS3116E12-18P (18-pin) (5' interface cable supplied)

Converter "B" interface..... MS3116E12-18P (18-pin) (5' interface cable supplied)

External RF switch output..... MS3116E10-6P (6-pin) (available with external RF switch only)

ENVIRONMENTAL

Operating

Ambient temperature..... -40 to +60°C

Atmospheric pressure..... Up to 10,000 feet

Nonoperating

Temperature..... -50 to +70°C

Atmospheric pressure..... Up to 40,000 feet

Shock and vibration..... Normal handling by commercial carriers

Notes: For literature describing local control (internal panel) and remote control protocols, refer to MITEQ's Technical Note 25T049.

For information on MITEQ's 100 Series outdoor converters, refer to technical Data Sheet D-203C.

