

SDTA-01
Step Down Transformer
Adapter
Version 2.1

User's Manual



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STEP DOWN TRANSFORMER ADAPTER
Version 2.1
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PROPRIETARY INFORMATION

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CONTROL SHEET

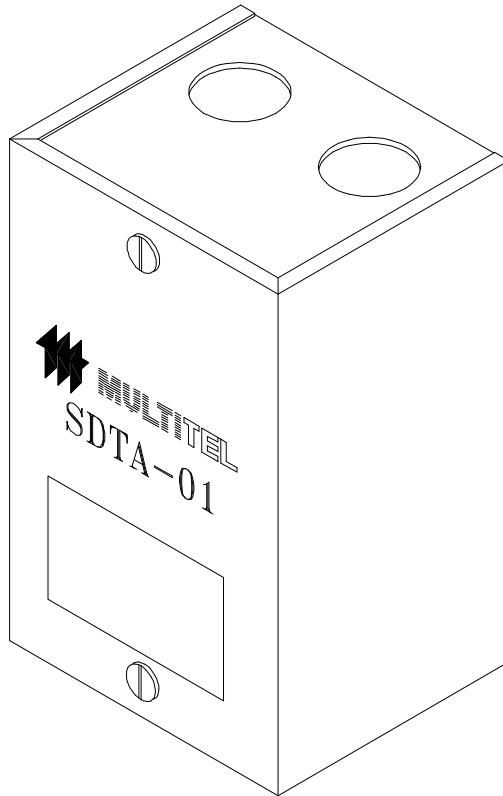
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1. GENERAL INFORMATION

1.1 Description

The SDTA-01 is an interface accessory that converts AC voltage into AC voltage signal compatible with MULTITEL power monitoring systems (MPMS).

Figure 1 - Physical appearance of the SDTA-01



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1.2 Content

In addition to chapter 1, which contain the general information, this document contains the following sections:

Chapter 2, *Specifications*, contains the electrical, environmental and mechanical technical specifications for the SDTA-01.

Chapter 3, *Operation*, describes the mode of operation and SDTA-01's scale configuration.

Chapter 4, *Installation*, provides the complete procedure for installing the SDAT-01.

Chapter 5, *Maintenance*, allows you to calibrate and troubleshoot the SDTA-01.

2. SPECIFICATIONS

2.1 Electrical Specifications

Input voltage	M-4181, 115 VAC max. M-4182, 230 VAC max.
Current consumption	20 mA at 115 VAC 10.0 mA at 230 VAC
Output signal	17 VAC at nominal input voltage (max. 28 VAC)

2.2 Environmental Specifications

Operating

Temperature	0° to 50°C (32° to 122°F)
Humidity	0 to 90 % (non-condensing)

Storage

Temperature	-40° to 70°C (-40° to 158°F)
Humidity	Up to 95% relative humidity

2.3 Mechanical Specifications

Height	5,3 in. (13,4 cm)
Width	3,3 in. (8,5 cm)
Depth	2,9 in. (7,3 cm)
Weight	1.6 lbs (0.724 kg)

3. OPERATION

3.1 General

The SDTA-01 is designed for interfacing alternative voltages from the line to MPMS such as Site Manager, MXP2 188 and Mirador.

3.2 Analog Channel Setup

The MPMS' analog channel needs the proper scaling factor according to the AC voltage range (see following table). Please refer to the user manual of your MPMS for a complete description of steps to follow in order to configure your MPMS accordingly.

Table 1 - Configuration of the analog channel

INPUT RANGE	SCALE	INPUT SOURCE
0 – 120 VCA	280	Tension
0 – 240 VCA	560	Tension

4. INSTALLATION

4.1 Tools and Equipment

The following tools and test equipment are recommended:

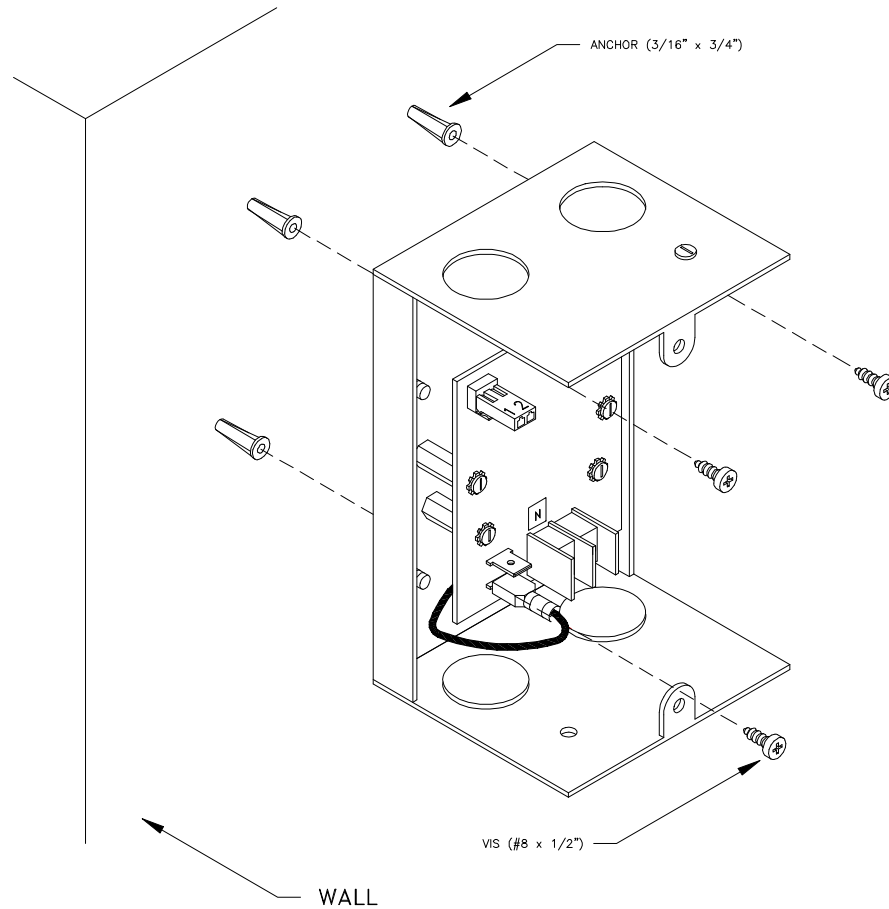
- Safety glasses
- Crimping tools (Amp model: 90123-2), pliers and soldering iron may also be used.
- Tie-wraps or friction tape
- Tarpoline, canvas
- RMS multimeter with clamp-on meter
- BX cable 14/2#
- Belden cable #9305 or #20 AWG stranded

NOTE: unpack and verify with the “Material list” that all the material is received and in good condition.

4.2 Mounting the System

The SDTA-01 is installed in an electrical room and as close as possible to the measurement AC voltage in order to minimise risk associated with the transmission of AC voltage. Install the SDTA-01 on any flat wall surface. Do not install the SDTA-01 in electrical box.

NOTE: protect the equipment from liquids.

Figure 2 Wall installation of the SDTA-01

4.3 Cables and Connections

This section provides the general installation procedures and demonstrates how to interconnect and put into service an SDTA-01.

NOTE: you can find connectors J1 to J8 by locating their names on the board inside the casing.

4.3.1 General Information

- In order to install the equipment properly, it is important to have a global view of the installation and to read the following instructions **before starting**.
- For more details on the operation of MPMS equipment, please refer to their own user manuals.

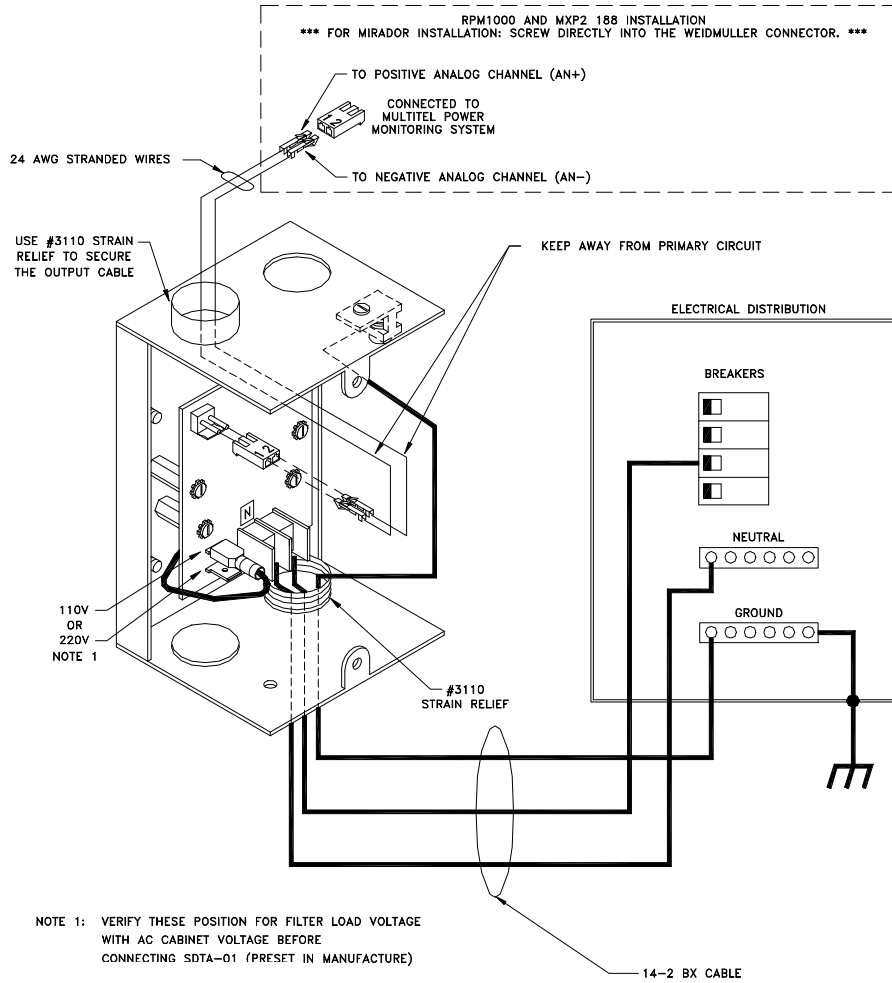
4.3.2 Connecting the Primary to 110 VAC

Refer to Table 2 and Figure 3 for more detail.

1. Remove the two screws holding the SDTA's cover in place, using a screwdriver.
2. With a BX 14-2 cable, wire a 20A AC breaker maximum, coming from the electrical box to supply the SDTA-01.

Table 2 – Wiring of the primary for 110 VCA

<i>ELECTRICAL BOX</i>		<i>J3</i>
BLACK	BREAKER	AC1
WHITE	NEUTRAL	AC2 (N)
FRAME GROUND	Linked by the cable's metal shielding	

Figure 3 Connecting 110 VCA to the SDTA-01

4.3.3 Connecting the Primary to 220 VAC

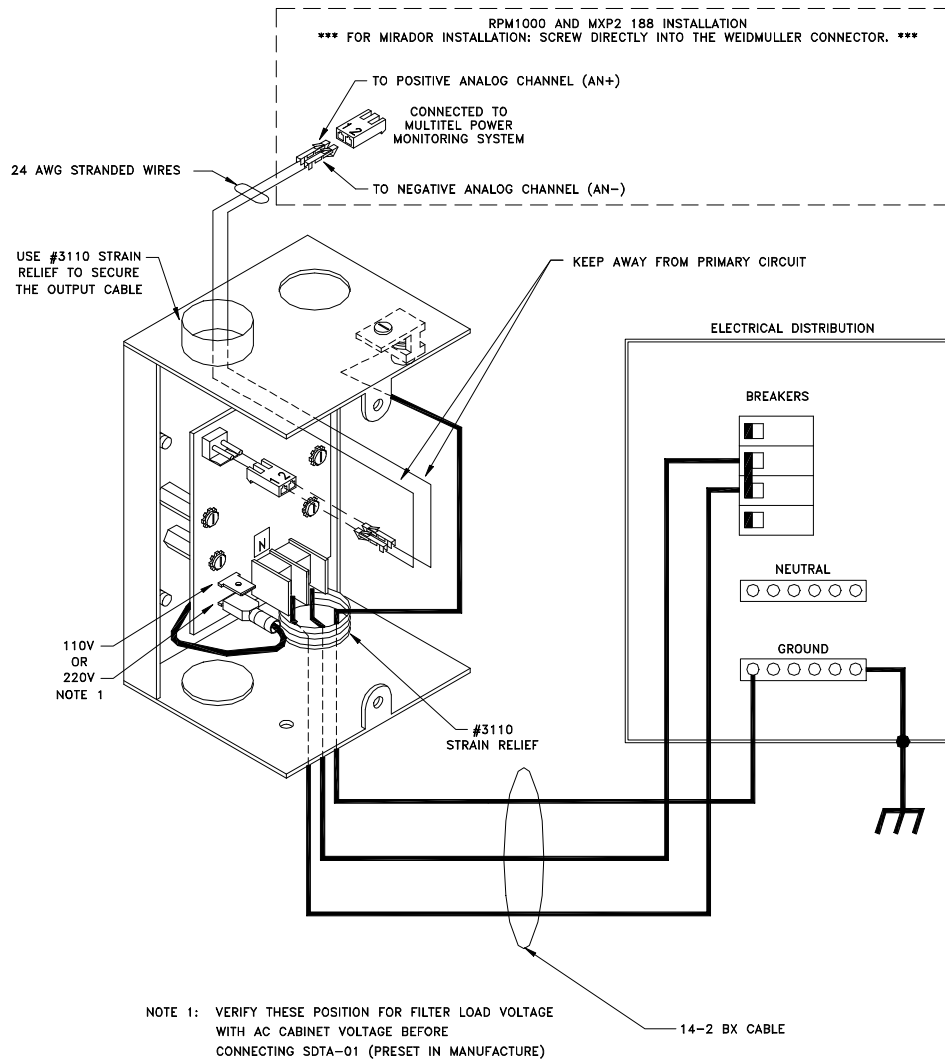
Refer to Table 3 and Figure 4 for more detail.

1. Remove the two screws holding the SDTA's cover in place, using a screwdriver.
2. With a BX 14-2 cable, wire two 20A AC (maximum) breakers, coming from the electrical box to supply the SDTA-01.

Table 3 – Wiring of the primary for 220 VCA

ELECTRICAL BOX		J3
BLACK	BREAKER	AC1
WHITE	BREAKER	AC2 (N)
FRAME GROUND	Linked by the cable's metal shielding	

Figure 4 Connecting 220 VCA to the SDTA-01



4.3.4 Connecting the Secondary Circuit

Refer to Table 4 for more information on cabling the secondary circuit.

1. Link the secondary to a MULTITEL Power Monitoring System using two 24-gauge stranded wires.

Table 4 – Wiring of the secondary circuit to the SDTA-01

	<i>J8</i>	<i>JX*</i>
RED	OUTPUT 1	AN+
BLACK	OUTPUT 2	AN-

2. Put the cover back on the SDTA-01 and its screws.

* JX is the corresponding connector on the MPMS.

NOTE: use the cable conduit #3110 to keep the output cable away from the primary circuit. Pin 1 of J8 is linked to the positive analog channel of the MULTITEL power monitoring system and pin 2 of J8 is linked to the negative analog channel. Crimp for a MXP2 188 installation or screw directly into the Weidmuller connector for a Mirador or Site Manager installation.

4.3.5 Definition of Connectors

The following section contains a description of connectors J3 and J8.

Table 5 - Definition of J3

<i>PIN</i>	<i>NAME</i>	<i>USE</i>	<i>TYPE</i>
1	AC1	110 VAC or 220 VAC input voltage	IN
2	AC2	110 VAC or 220 VAC input voltage	IN

Table 6 - Definition of J8

<i>PIN</i>	<i>NAME</i>	<i>USE</i>	<i>TYPE</i>
1	OUTPUT1	17 VAC output voltage	OUT
2	OUTPUT2	17 VAC output voltage	OUT

5. MAINTENANCE

5.1 Calibration

The SDTA-01 does not need a periodic maintenance, however if the output values provided by the SDTA-01 are erratic (after verification), the MULTITEL power monitoring system's may be programmed to compensate the differential in measurement.

Tools and/or equipment required for calibration:

- AC voltage clamp-on RMS multimeter
- Terminal or portable computer to communicate with MULTITEL power monitoring system (Emulation of VT-100, ANSI in some case)

5.1.1 Mirador or Site Manager

1. Check that the analog channel scale is adjusted correctly.
2. Disconnect the wire from the connector associated with the analog channel.
3. Short-circuit the 2 wires of the analog channel.
4. Enter the CALIBRATION command.
5. Choose 1 for "Analog Channels"
6. Choose the card number and the desired analog channel.
7. Automatically adjust the zero by typing "z".
8. You can manually adjust the zero with the "+" and "-" keys.
9. Replace the connector wires in place and measure the voltage applied with the help of a multimeter.
10. Redo the CALIBRATION command, this time specify the value applied (the value read by the multimeter).
11. Automatically adjust the gain by typing "G".
12. You can manually adjust the gain with the "<" and ">" keys.

5.1.2 MXP2 188

1. Disconnect the corresponding connector for the selected analog channel on the back panel.
2. Short the 2 pins of the corresponding analog channel.

3. Use the CALIBRATION1 command to adjust the zero reading and follow the instructions.
4. Replace the connector on the back panel.
5. Connect a voltmeter across the same analog signal.
6. Use the CALIBRATION1 command to adjust the scale factor of the selected analog channel.
7. In response to “ENTER THE APPLIED VALUE:” on the MXP2 188, enter the voltmeter reading and follow the instructions.

NOTE: for the universal module, it is not necessary to short the input in order to adjust to zero since the module does that automatically.

5.2 Troubleshooting

This section lists some helpful hints on how to analyze problems that may occur, because all troubles are unpredictable. When the problem is still not identified after reading this section, please refer to the Customer service centre.

NOTE: before sending back any defective unit, please make arrangements with your nearest MULTITEL Customer service centre.

<i>SYMPTOM</i>	<i>POSSIBLE CAUSE</i>
No reading, the monitoring system indicates 0 volts on the displays	The monitoring system analog channel is disabled (see user manual of corresponding MPMS).
	The analog channel of MPMS is not the right type. MIRADOR-MXP2 must be SDTA and channel must be true RMS.
	There is no AC voltage present at the SDTA-01 inputs.
	Verify JP1, JP2 and JP3 setting for the same MPMS you are installing (optional).
	The wiring is not according to specification in the SDTA-01 connector's definition.
	The SDTA-01 may be defective if all of the above possible causes are not true (refer to MULTITEL Customer service).
The reading is erratic	The calibration is not adequate, refer to section 5.1 in this manual.
	The scaling is not adequate, refer to section 3.2 .
	The ANALOG channel of MPMS is not configured as true RMS (refer to MPMS manual).

6. CONTACTING MULTITEL

Our Customer service and Technical Support technicians are always eager to answer any question you might have about the SDTA-01.

Simply telephone us, write to us or visit our Internet site where you will find FAQ's for SDTA-01.



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