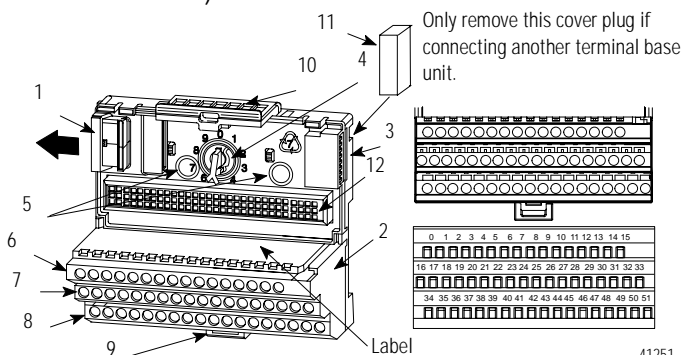




FLEX Ex Terminal Base

(Cat. No. 1797-TB3)



41251

Component Identification

1	Female flexbus connector
2	Terminal base unit
3	Male flexbus connector
4	Keyswitch - Set to the position required for the installed module
5	Mounting holes for panel mounting
6, 7, 8	Input/output terminal strips for connecting input/output wiring, -V, +V connections, chassis grounds
9	Locking tab
10	Module locking latch
11	Cover plug for male flexbus connector
12	96 pin female I/O connector

You will need to rotate the keyswitch (4) to the correct position depending on the module. Refer to the module's installation instructions for more information. **Do not change the position of the keyswitch after wiring the terminal base unit.**

Make certain that you only connect terminal base units to other intrinsically safe system modules or adapters to maintain the integrity of the intrinsically-safe backplane.



41307

Installation in Zone 1

This terminal base unit must not be exposed to the environment. Provide a suitable metal enclosure. This terminal base unit has a protection factor of IP20. Do not remove the flexbus cover on the right-most terminal base unit.

ATTENTION



This terminal base unit cannot be used in an intrinsically safe environment after it has been exposed to non-intrinsically safe signals.

Do not remove the flexbus cover (11) on the right-most terminal base unit.

Electrostatic Charge

Protect the system against electrostatic charge. Post a sign near this module: **Attention! Avoid electrostatic charge.** For your convenience, a sign which can be cut out and posted is included in this installation instruction.

European Community Directive Compliance

If this product has the CE mark it is approved for installation within the European Community or EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2

EMC - Generic Emission Standard, Part 2 - Industrial Environment

- EN 50082-2

EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Ex Directive

This product is tested to meet the Council Directive 94/9/EC (ATEX 100a) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres by applying the following standards:

- EN50014:1992, Electrical Apparatus for Potentially Explosive Atmospheres
- EN50020:1994, Electrical Apparatus for Potentially Explosive Atmospheres - Intrinsic Safety "i"

UL, C-UL Certification

If this product has the UL/C-UL mark, it has been designed, evaluated, tested, and certified to meet the following standards:

- UL 913, 1988, Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III Division 1, Hazardous (Classified) Locations
- UL 1203, Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
- UL 2279, Electrical Equipment for Use in Class I, Zone 0, 1, and 2 Hazardous (Classified) Locations
- UL 508, Industrial Control Equipment
- CSA C22.2 No. 157-92, Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
- CSA C22.2 No. 30-M1986, Explosion-Proof Enclosures for Use in Class I Hazardous Locations
- CSA-E79-0-95, Electrical Apparatus for Explosive Gas Atmospheres, Part 0: General Requirements
- CSA-E79-11-95, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety “i”
- CSA C22.2 No. 14-95, Industrial Control Equipment

FM Certification

If this product has the FM mark, it has been designed, evaluated, tested, and certified to meet the following standards:

- FM C1. No.3600:1998, Electrical Equipment for Use in Hazardous (Classified) Locations General Requirements
- FM C1. No.3610:1999, Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III Division 1 Hazardous (Classified) Locations
- FM C1. No.3615:1989, Explosionproof Electrical Equipment General Requirements
- FM C1. No.3810:1989, 1995, Electrical and Electronic Test, Measuring and Process Control Equipment
- ANSI/NEMA 250, 1991, Enclosures for Electrical Equipment

Inputs/Outputs

Do not apply any non-intrinsically safe signals to this terminal base.

When using as an intrinsically safe electrical apparatus according to EN50020, the European directives and regulations must be followed.

The terminals in this terminal base unit may be electrically connected to each other by the insertion of FLEX Ex I/O modules. See the module installation instructions to determine this.

IMPORTANT

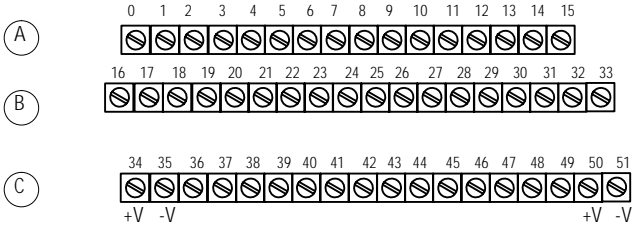
When interconnecting several lines, you must consider the total accumulated power and check for intrinsic safety requirements.

Description

The 1797-TB3 terminal base has 36 wiring connections to/from a plug-in module. The use of each terminal depends on the module mounted in this base. The 1797-TB3 terminal base has 36 wiring connections to/from a plug-in module. The use of each terminal depends on the module mounted in this base.

The 1797-TB3 terminal base also has connections for cold junction compensation and terminals designated for shield termination to chassis ground.

Wiring Connections for Terminal Base 1797-TB3



No connections allowed to terminals 36 and 49

41252

ATTENTION



- Make certain that you power this terminal base unit with an intrinsically safe power supply. Do not exceed the values listed in the specifications for this terminal base unit.
- Do not use the unused terminals on this terminal base unit. Using these terminals as supporting terminals can result in damage to modules and/or unintended operation of your system.

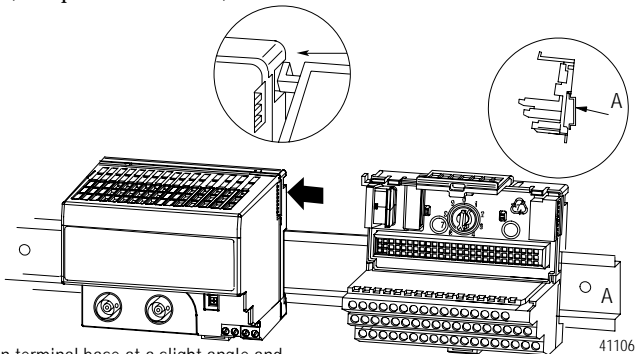
Mounting on a DIN Rail

ATTENTION

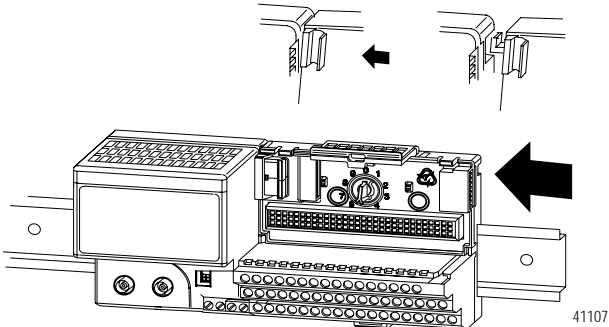


Do not remove or replace a terminal base unit when power is applied. Interruption of the flexbus can result in unintended operation or machine motion.

1. Remove the cover plug in the male connector of the unit to which you are connecting this terminal base unit.
2. Check to make sure that the 16 pins in the male connector on the adjacent device are straight and in line so that the mating female connector on this terminal base unit will mate correctly.
3. Make certain that the female flexbus connector is **fully retracted** into the base unit.
4. Position the terminal base over the 35 x 7.5mm DIN rail **A** (A-B pt. no. 199-DR1).



Position terminal base at a slight angle and hooked over the top of the DIN rail A.

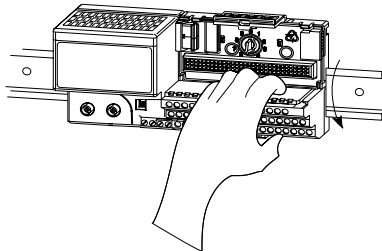


Slide the terminal base over tight against the adapter (or preceding terminal base). Make sure the hook on the terminal base slides under the edge of the adapter (or preceding terminal base) and the flexbus connector is fully retracted.

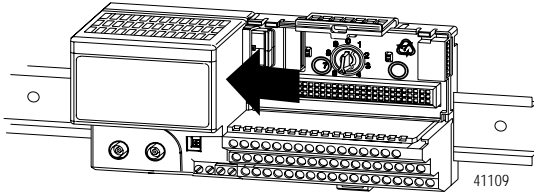
ATTENTION


Do not force the terminal base into the adjacent modules. Forcing the units together can bend or break the hook and allow the units to separate and break communication over the backplane.

5. Rotate the terminal base onto the DIN rail with the top of the rail hooked under the lip on the rear of the terminal base. **Use caution to make sure that the female flexbus connector does not strike any of the pins in the mating male connector.**



Press down on the terminal base unit to lock the terminal base on the DIN rail. If the terminal base does not lock into place, use a screwdriver or similar device to open the locking tab, press down on the terminal base until flush with the DIN rail and release the locking tab to lock the base in place.



Gently push the flexbus connector into the side of the adapter (or preceding terminal base) to complete the backplane connection.

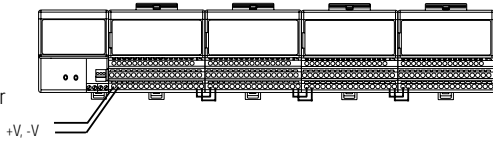
- 6.** For specific wiring information, refer to the installation instructions for the module you are installing in this terminal base unit.
- 7.** Repeat the above steps to install the next terminal base.
- 8.** Be sure the flexbus connector cover on the last terminal base is in place.

Wiring

1. Make wiring connections as described in the installation instructions included with the specific module that mounts on your terminal base unit.
2. Connect +V and -V from this terminal base unit to the next using jumpers or individual external wiring, if appropriate due to total module power consumption.

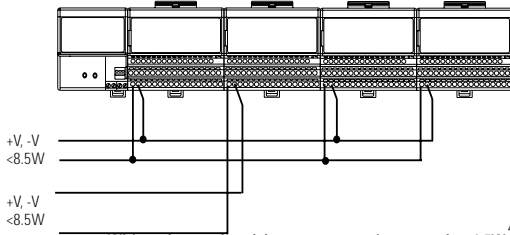
Daisy-chaining

You can use the daisy chain configuration if the total module power draw is $<8.5W$. Otherwise, power is connected to individual modules.



Wiring when total module current power is less than 8.5W 41110

Combination



Wiring when total module current power is greater than 8.5W 41111

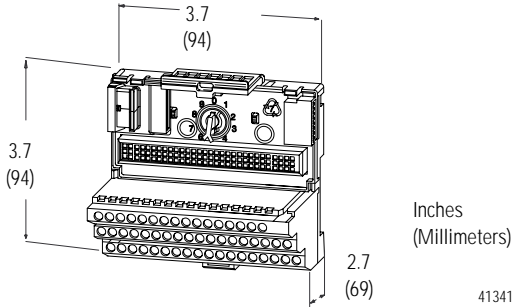
Other variations are possible depending upon individual module power.

ATTENTION



Do not use any unused terminals on this terminal base unit. Using these terminals as supporting terminals can result in damage to the module and/or unintended operation of your system.

Mounting Dimensions



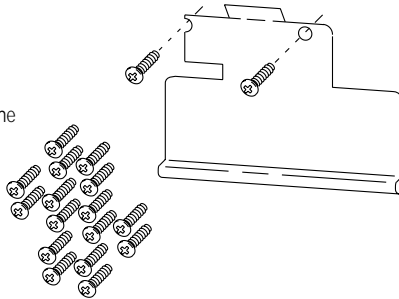
Repair

This terminal base unit is not field-repairable. Any attempt to open this terminal base unit will void the warranty and the IS certification. If repair is necessary, return this module to the manufacturer.

About the Mounting Kit

Use the optional 1794-NM1 mounting kit to mount your system on a panel or wall without a DIN rail.




1794-NM1
Mounting Kit with
18 screws (2 screws for the
adapter and 2 screws for
each module)



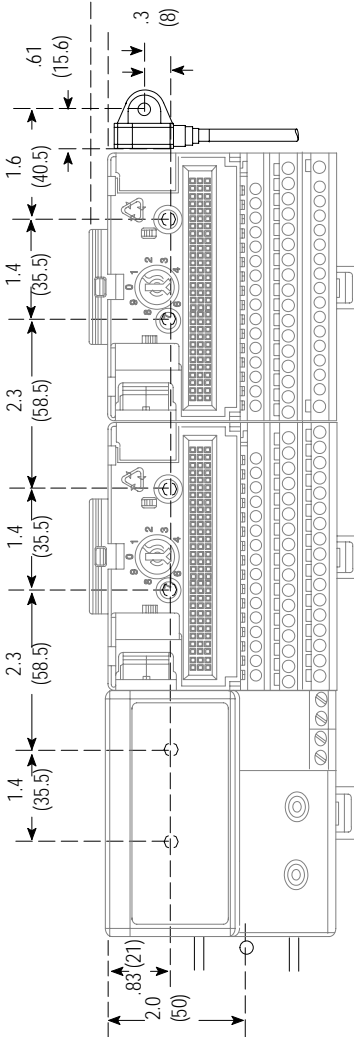
30238

1797-TB3 Specifications	
Number of Terminals	1 row of 16, 2 rows of 18
Terminal Screw Torque	7-9 inch-pounds
Terminals Assignments ¹ +34, -35, +50, -51, and 96 pin female I/O connector pins 30-32, 62-64, 94-96 36, 49 All Other Terminals	Only for intrinsically safe circuits $U_i \leq 10V$ dc $I_i \leq 2.5A$ $C_i \leq 1nF$ L_i Negligible Must not be used for any connection $U_i \leq 30V$ dc $I_i \leq 100mA$ $C_i \leq 1nF$ L_i Negligible
Flexbus Connection Intrinsically Safe	$U_i \leq 10V$ dc $I_i \leq 400mA$ $C_i \leq 1nF$ L_i Negligible
Isolation Voltage	Channel-to-channel isolation determined by inserted module
Weight	200g (approximately)
Dimensions (with module installed in base) Inches (Millimeters)	3.7H x 3.7W x 2.7D (94H x 94W x 69D)
Environmental Conditions	
Operational Temperature	-20 to 70°C (-4 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity	5 to 95% noncondensing
Shock Operating	Tested 15g peak acceleration, 11 (±1)ms pulse width
Non-Operating	Tested 15g peak acceleration, 11 (±1)ms pulse width
Vibration	Tested 2g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size	12 gauge (4mm ²) stranded maximum 1.2mm (3/64in) insulation maximum
Agency Certification	
CENELEC	II 2G EEx ia IIC T4
UL, C-UL	Class I Division 1 & 2 Groups A-D T4 Class I Zone 1 & 2 AEx ia IIC T4
FM	Class I Division 1 & 2 Groups A-D T4 Class I Zone 1 & 2 AEx ia IIC T4

1797-TB3 Specifications Continued

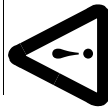
Certificates	
CENELEC	DMT 98 ATEX E012 U
	
UL, C-UL	UL Certificate Number 99.19699
	
FM	FM Certificate Number 3009806
	

- 1 Termination connections are unique with each I/O module. Refer to the appropriate I/O module's installation instructions.

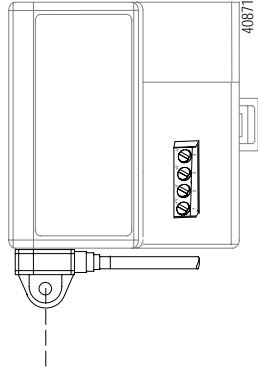


Inches
(Millimeters)

Be careful of metal chips when drilling cable mounting holes. Do not drill holes above a system that has any modules installed.



Cable length approximately 11.5 (292.1) or 35.5 (901.0) from upper connector (length depends upon cable -1ft (0.3m) or 3ft (0.091m))



IMPORTANT

For detailed certification information, refer to the FLEX Ex System Certification Reference Manual, publication 1797-6.5.6.

Attention: Avoid electrostatic charge.

Notes:

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