YASKAWA

VIPA Networking Solutions

PBT | 924-1BB10 | Manual

HB159 | PBT | 924-1BB10 | en | 18-22

PROFIBUS Terminator - BusTerm T1

www.vipa.com/en/service-support/manuals

VIPA CONTROLS

VIPA GmbH
Ohmstr. 4
91074 Herzogenaurach
Telephone: +49 9132 744-0
Fax: +49 9132 744-1864
Email: info@vipa.com
Internet: www.vipa.com

924-1BB10_000_PBT-T1,3,GB - © 2018

Table of contents

1 General

1.1 Copyright © VIPA GmbH

All Rights Reserved

Tel.: +49 9132 744 -0

Fax.: +49 9132 744-1864

EMail: info@vipa.de

http://www.vipa.com

Every effort has been made to ensure that the information contained in this document was complete and accurate at the time of publishing. Nevertheless, the authors retain the right to modify the information.

This customer document describes all the hardware units and functions known at the present time. Descriptions may be included for units which are not present at the customer site. The exact scope of delivery is described in the respective purchase contract.

CE Conformity Declaration

Hereby, VIPA GmbH declares that the products and systems are in compliance with the essential requirements and other relevant provisions. Conformity is indicated by the CE marking affixed to the product.

Conformity Information

For more information regarding CE marking and Declaration of Conformity (DoC), please contact your local VIPA customer service organization.

Trademarks

VIPA, SLIO, System 100V, System 200V, System 300V, System 300S, System 400V, System 500S and Commander Compact are registered trademarks of VIPA Gesellschaft für Visualisierung und Prozessautomatisierung mbH.

SPEED7 is a registered trademark of profichip GmbH.

SIMATIC, STEP, SINEC, TIA Portal, S7-300 and S7-400 are registered trademarks of Siemens AG.

Microsoft and Windows are registered trademarks of Microsoft Inc., USA.

Portable Document Format (PDF) and Postscript are registered trademarks of Adobe Systems, Inc.

All other trademarks, logos and service or product marks specified herein are owned by their respective companies.

Information product support

Contact your local VIPA Customer Service Organization representative if you wish to report errors or questions regarding the contents of this document. If you are unable to locate a customer service centre, contact VIPA as follows:

VIPA GmbH, Ohmstraße 4, 91074 Herzogenaurach, Germany
Telefax: +49 9132 744-1204
EMail: documentation@vipa.de

Technical support

Contact your local VIPA Customer Service Organization representative if you encounter problems with the product or have questions regarding the product. If you are unable to locate a customer service centre, contact VIPA as follows:

VIPA GmbH, Ohmstraße 4, 91074 Herzogenaurach, Germany
Tel.: +49 9132 744-1150 (Hotline)
EMail: support@vipa.de

1.2 About this manual

Objective and contents

This manual describes the PROFIBUS Terminator 924-1BB10 from VIPA. It contains a description of the construction, project implementation and usage.

Product	Order number	as of state: HW
PBT-T1	924-1BB10	01

Target audience

The manual is targeted at users who have a background in automation technology.

1.3 Safety information

Applications conforming with specifications

The system is constructed and produced for:

- communication and process control
- general control and automation tasks
- industrial applications
- operation within the environmental conditions specified in the technical data
- installation into a cubicle

DANGER!
This device is not certified for applications in
– in explosive environments (EX-zone)

Documentation

The manual must be available to all personnel in the

- project design department
- installation department
- commissioning
- operation

CAUTION!

The following conditions must be met before using or commissioning the components described in this manual:

- Hardware modifications to the process control system should only be carried out when the system has been disconnected from power!
- Installation and hardware modifications only by properly trained personnel.
- The national rules and regulations of the respective country must be satisfied (installation, safety, EMC ...)

Disposal

National rules and regulations apply to the disposal of the unit!

2 Product description

The T1 Terminator provides active and reliable termination for PROFIBUS networks which are based on RS485. By using this component it is possible to turn off, remove or replace devices without disturbing the bus communication. This applies in particular to the devices at the end of the segment.

- The T1 has a couple of special features which makes it a very useful infrastructure component; it has a redundant power supply and diagnostic LEDs to indicate the status of each power source. It is also equipped with an additional DB9 connector for maintenance/engineering tool. The DB9 connector can also be used as the primary bus connection if circumstances so dictate.
- The T1 Terminator can be installed on a standard DIN-rail.

3 Installation instruction

3.1 Location

The T1 Terminator can be installed everywhere in a non-hazardous area that complies with IP 20 (DIN 40 050) and the specified temperature range of -20 ... +60 °C.

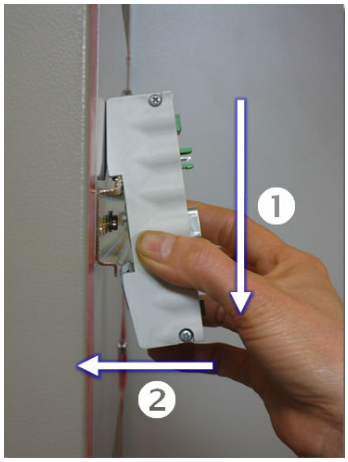
3.2 Position

The T1 Terminator can be installed in every position, but it is recommended to install it with the green PROFIBUS connector pointing down. In this position it is easier to read the status display and to perform measurements on the DB9 connector.

3.3 Mounting and dismounting

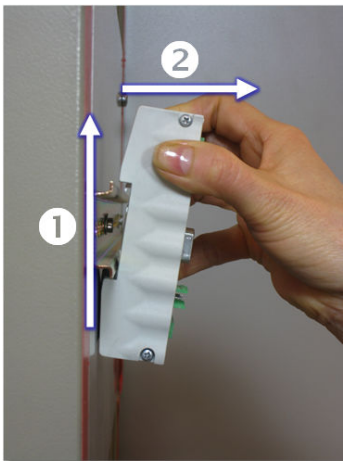
The T1 has to be mounted on a 35 mm DIN rail with a minimum width of 60 mm.

Mounting



→ Pull-down the T1 and push it on the DIN rail.

Dismounting



→ Push-up the T1 and pull it of the DIN rail.

3.4 Power supply

Parameters

The power supply has to comply with the following specifications:

Voltage: 19 to 28 V DC

Current: min. 65 mA

Wiring

The leads of both power connectors have to be wired as follows:

Pin	Wiring
+	Positive voltage
-	0V
SH	Shield

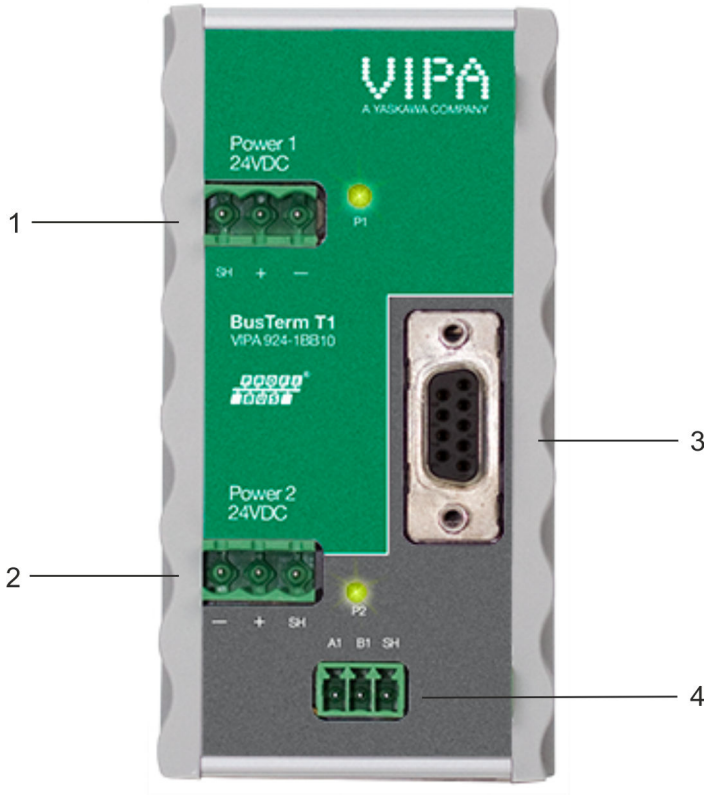
Redundancy

Both power connectors are linked 1-on-1 to the internal power supply of the T1. If 1 power supply would fail, the other takes over without delay time. When redundancy is not required, it is sufficient to use 1 power connector. When the T1 is flipped 180°, the connectors can be used without alteration.

Diagnostic LEDs

	OFF	Blinking	ON
P1	Power is OFF or an internal failure. Check if P2 is on.	Power supply not stable or an internal failure. Check if P2 is on.	Power supply OK
P2	Power is OFF or an internal failure. Check if P1 is on.	Power supply not stable or an internal failure. Check if P1 is on.	Power supply OK

3.5 PROFIBUS



1 Power 1
2 Power 2
3 Piggy back connector for maintenance
4 Bus cable IN

Screw connectors

The T1 Terminator has 1 PROFIBUS connector, this is where the DP segment ends. It is common practise to connect the PROFIBUS cable to the green screw connector. This keeps the DB9 connector available for maintenance activities.

Pin layout

Pin	Wiring
A1	Green wire
B1	Red wire
SH	Cable shielding

Piggy back connector

The piggy back DB9 connector is connected 1-on-1 with the PROFIBUS screw connector.

Ground Clip

It is recommended to use the supplied ground clip to attach the cable shield to the screw connector, for easier shield connection and better strain relief.

4 Technical data

Order no.	924-1BB10
Dimensions and weight	
Dimensions L x W x H (mm)	106 x 55 x 33 mm (without plugs) 106 x 55 x 55 mm (with plugs)
Weight	ca. 125 g
Ambient conditions	
Operating temperature	-20 ... +60 °C
Isolation class	IP 20 (DIN 40 050)
Protocol specifications	
Supported Protocols	DP-V0, DP- V1, DP-V2, FDL, MPI, FMS, PROFIsafe, PROFIdrive and any other FDL based protocol
Transmission speed	9.6 kbps to 12 Mbps (including 45.45 kbps)
PROFIBUS cable specifications	
Cable lengths	1200 m at 9.6 kbps to 93.75 kbps
	1000 m at 187.5 kbps
	400 m at 500 kbps
	200 m at 1.5 Mbps
	100 m at 3 Mbps to 12 Mbps
Wire diameter	< 2.5 mm^2
Wire type	Stranded or Solid core
Termination	Powered according to IEC 61158 (390/220/390 Ohm)
Power supply specifications	
Nominal supply voltage	19 to 28 V DC
Current consumption	65 mA at 24 V DC
Power dissipation	max. 2W
Redundancy	Yes (Power 1 OR Power 2)
Power LED	Power 1 OR Power 2
Reverse polarity protection	Yes
Wire diameter	< 2.5 mm^2