

Product Description

The AL-2605 module implements active bus termination for PROFIBUS networks with power supply diagnostic. The Product is used in PROFIBUS DP network extremities assuring network operation even if some module near net extremities is turned off or removed. The product also verifies field power supply status delivering his diagnostics in case of failure. His application is recommended for any PROFIBUS-DP net where reliability and availability are main requirements



AL-2605 main characteristics are:

- Active PROFIBUS termination according to EN 50170 standard
- PROFIBUS DB9 connectors compatibility
- Redundant power supply on 24 Vdc
- Useable with any manufacturer PROFIBUS-DP products.
- Redundant 24 Vdc power supply
- Power supply supervision
- Dry contact to failure remote diagnostic
- LEDs for diagnostic indication
- DIN TS35 rail mounting

Ordering Information

Packing List

The product packing contains the following parts:

- AL-2605 Module
- Installation guide

Part Number

The following code must be used when ordering the product

Part Number	Description
AL-2605	Terminator With Supply Diagnostic

Related Products

The following products must be ordered separately when needed:

Part Number	Description
AL-2601	Connector for PROFIBUS net
AL-2303	PROFIBUS net cable, 7,1 mm diameter
AL-2431	Optical repeater FOCUS - PROFIBUS
AL-2432	Optical repeater FOCUS- PROFIBUS with two optical ports

Notes

AL-2601: the PROFIBUS connectors a DB9 type with standard pin-out and no internal termination. It is appropriate to connect PROFIBUS devices in intermediate positions of PROFIBUS network, or physically not mounted in network extremes. This connector has input and output ports to net cable, allowing module replacement without interrupting the signal lines.

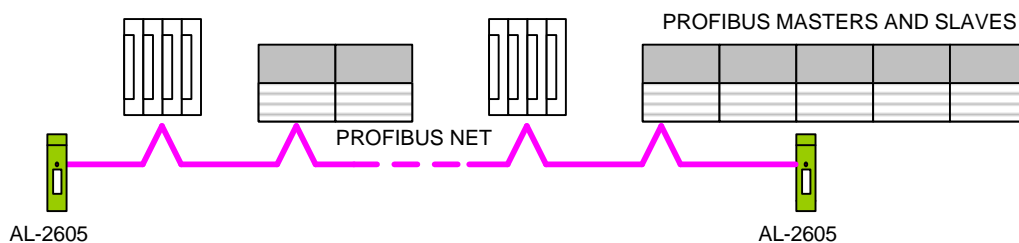
AL-2303: PROFIBUS net data communication cable.

Characteristics

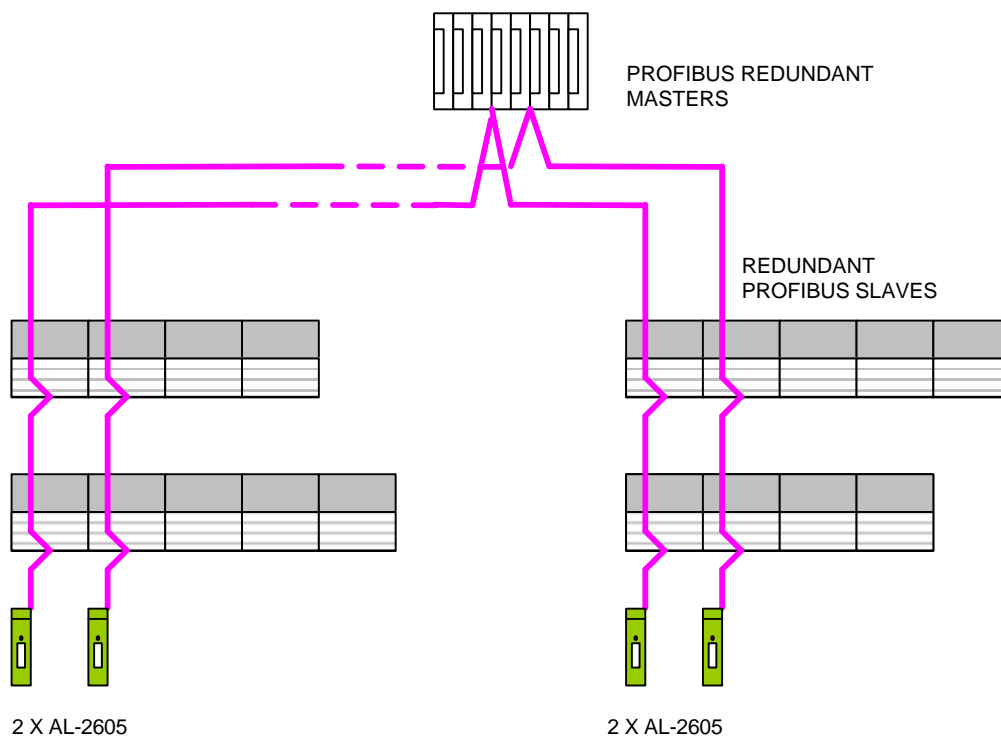
	AL-2605
Module type	Active PROFIBUS terminator with power supply diagnostic
Termination Resistors	According to PROFIBUS EN50170 standard, PROFIBUS type A cable
Configuration and connections	DB9 female connector with gold pins and grounded body
Configuration Parameters	None
External Power Supply	24 Vdc, in redundant topology with 1 and 2 supplies 19 to 30 Vdc, ripple included
Power Consumption	50 mA @ 24 Vdc
Power Supply Connection	Six connectors: L1: +24 Vdc, supply 1 L2: +24 Vdc, supply 2 M: 0 Vdc, 1 and 2 supply common GND: system ground F1, F2: failure status relay contacts
Resistive Switching Characteristics	1,5 A @ 5 a 30 Vdc 0,5 A @ 48 Vdc 0,150 A @ 125 Vdc 1,5 A @ 125 Vac 1,5 A @ 240 Vac
Switching Time	10 ms (maximum)
Protection	Against power supply polarity inversion
Ground to logic Isolation	500 Vac per 1 minute
Status Indication	LED for supply 1 OK LED for supply 2 OK LED for 5 Vdc supply OK
Grounding	Through faston type terminal or connector ⁽¹⁾
Maximum Operation Temperature	60 °C
Dimensions	25,0 x 84,3 x 88,8 mm
Standards accomplished	IEC 61131 DIN19245 EN 50170

Installation

AL-2605 module installation must be done on the two PROFIBUS-DP net extremities:

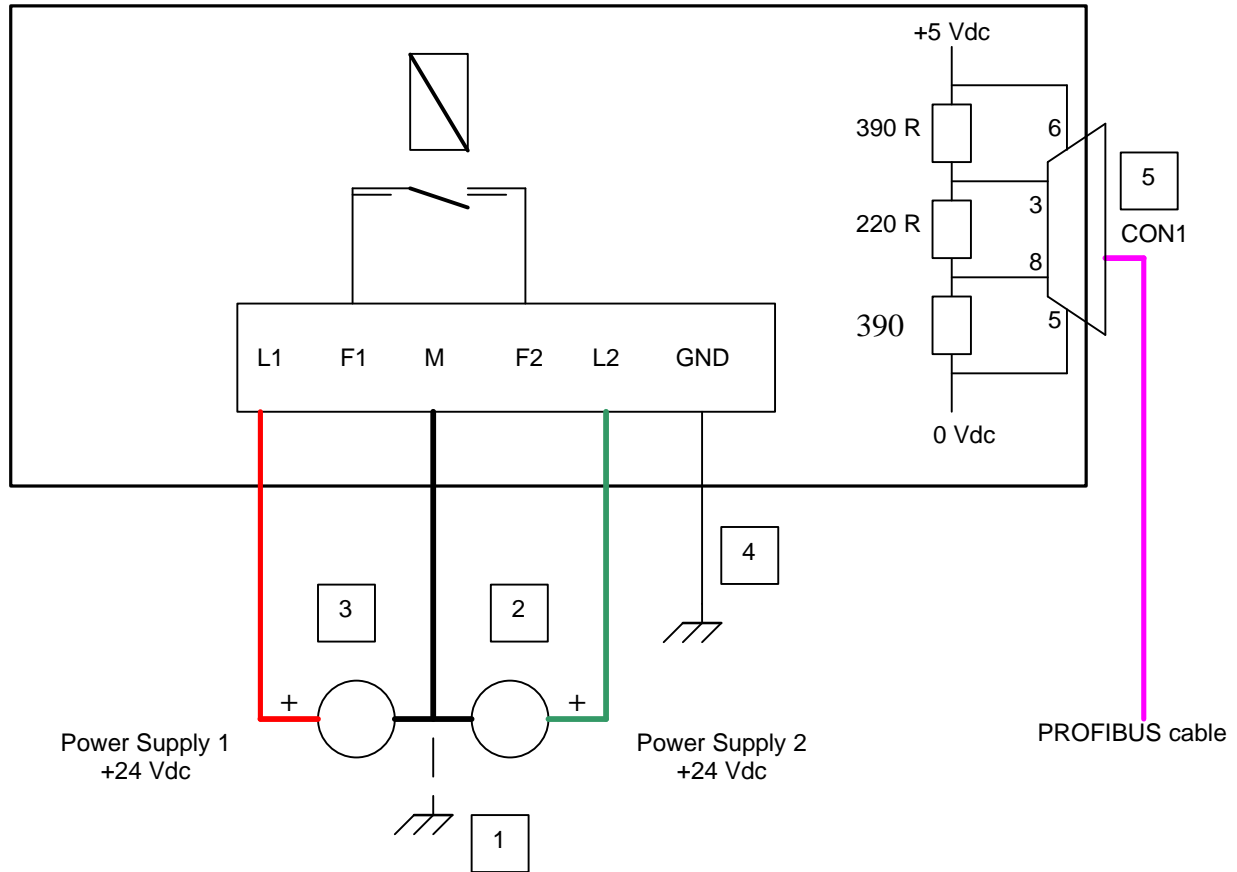


The product is also applicable in redundant PROFIBUS-DP networks as shown below. The AL-2605 modules from different nets can be connected to the same power supplies due to his galvanic insulation, as defined by EN50170 standard.



The AL-2605 terminator installation must be done through TS35 rails. The PROFIBUS connector must be fixed through screws to avoid accidental disconnection.

AL-2605 – Terminator with Power Supply Diagnostic



Notes:

1. The power supplies common point in redundant configuration (0 Vdc) may be connected to electric panel ground. This connection is not mandatory but is recommended to reduce electrical noise in automation system.
2. The module has inputs for two power supplies in redundant configuration, power supply 1 and power supply 2. In case that only one power supply is used, both L1 and L2 inputs must be connected to power supply the positive pole. If this connection is missing a supply fault indication will occurs.
3. Inputs F1 and F2 are connected to contact points of an internal relay with 1 A current capacity. These contacts will close in case the product have not any diagnostic signal as related on Diagnostics chapter of this TC. The connection of these contact points to a system digital input is suggested in order to have a remote monitoring of active termination status.
4. The GND point must be connected directly to panel ground. This connection is mandatory and must be done preferentially through the faston terminal at module bottom.
5. The PROFIBUS active termination connection is provided through CON1 according to DIN 19245. The connector used in this position must not have termination, or it must be switched off. The cable shield must be attached to connector metal body.

ATTENTION:

In case that redundant power supplies are not utilized to feed AL-2605 terminator, points L1 and L2 can be connected together in order to avoid diagnostic of one power supply failure.

Mechanical Mounting

Rail Mounting

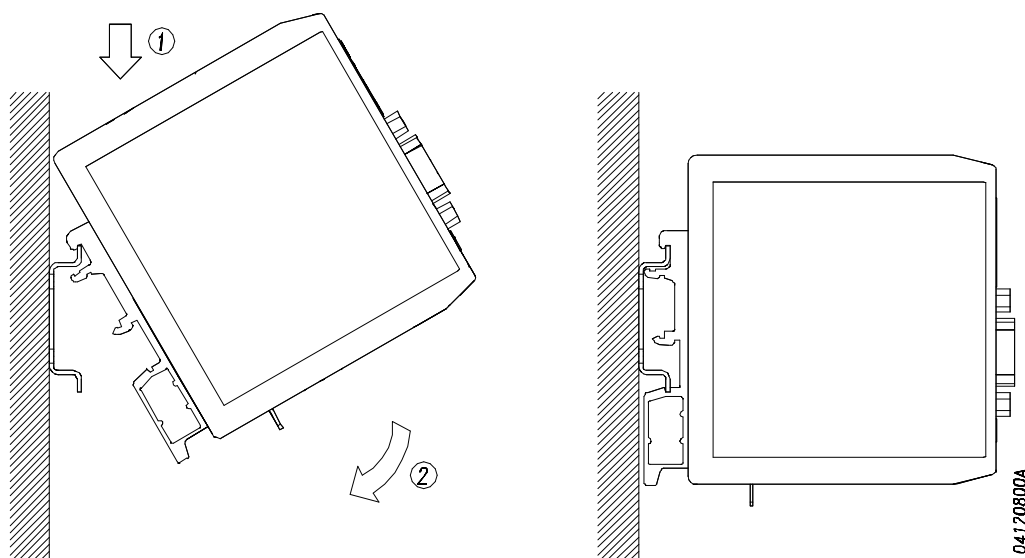
The mounting rails must be of conductive type (metallic) and corrosion resist. The rails must be grounded for EMI protection. It must be compliant to DIN EN 50032 standard most regarding to dimensions and must be of good quality. Aluminum rails are not recommended due to contact electrical connection difficulties.

The adequate screw mounting is necessary to resist to mechanical vibration. The use of screws at each 100 mm of rail is recommended.

Module Mounting

After the rail is correctly installed proceed the module installation according to following steps (see figure below):

- Put the module in contact with the mounting panel surface
- Slide the module in rail direction until touching it (1)
- Rotate the module towards the rail until the lock plugs in (2)

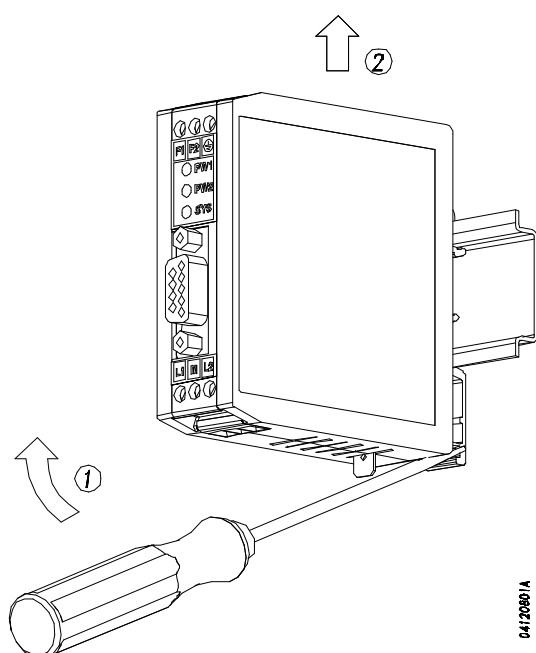


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Module Disassemble

The module disassembling process is (see figure below):

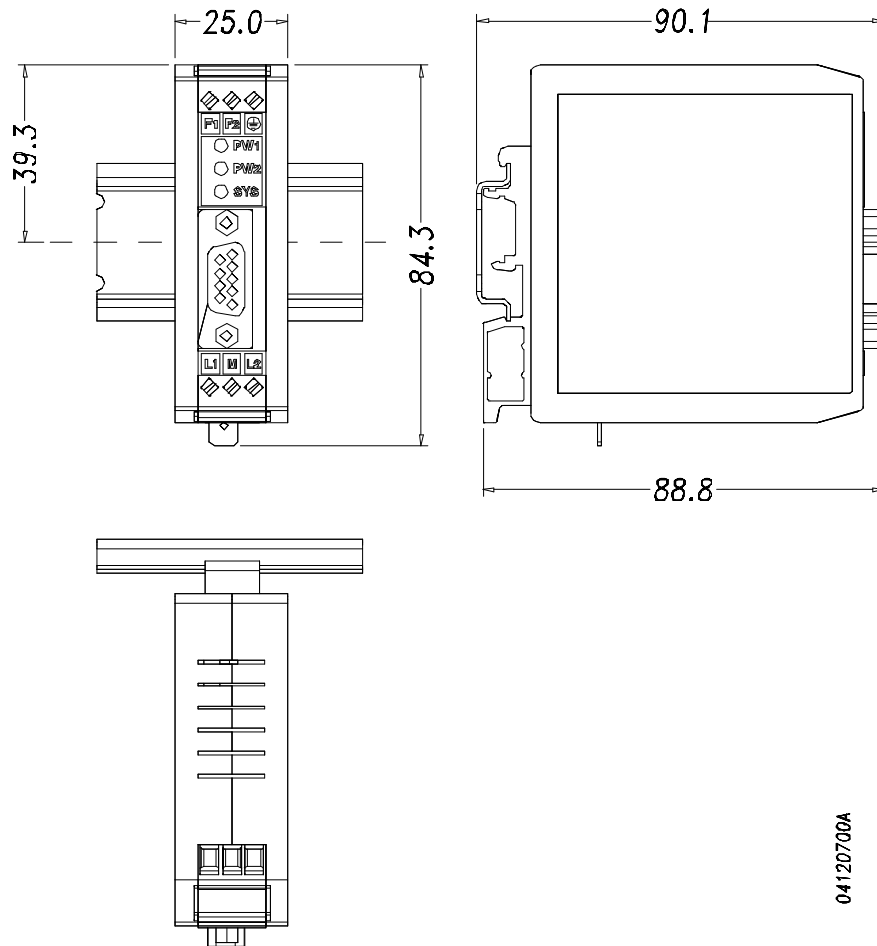
- With a screwdriver loose the lock that locks the module to the rail (1)
- Rotate and slide the module outward the rail removing it (2)



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Physical Dimensions

Dimensions in mm.



Diagnostic

The AL-2605 module has LEDs for indication of local diagnostic and also have two relay contact points which may be connected to a digital input in order to have remote access of diagnostic status.

The module diagnostic LEDs indicate the following situations:

LED PW1	LED PW2	LED Sys	Relay Contacts	Meaning	Cause
On	On	On	Closed	Normal Operation	
*	*	Off	Opened	Active termination off	Internal supply defective Supply 1 and supply 2 not energized or with voltages below the minimum value Supply 1 and supply 2 connected with reverse polarity
Off	On	On	Opened	Power supply 1 off	Supply 1 not energized or with voltages below the minimum value Supply 1 connected with reverse polarity
On	Off	On	Opened	Power supply 2 off	Supply 2 not energized or with voltages below the minimum value Supply 2 connected with reverse polarity

In case only one power supply is utilized the L1 and L2 inputs must be interconnected to avoid power supply failure diagnostics.

In case the internal power supply is defective the product must be send to Altus support sector for repair
suporte@altus.com.br.

Manuals

For better technical details in dos PONTO series products configuration, installation and programming, The following documents must be consulted:

Document number	Description
MU299026	PROFIBUS net Utilization Manual
MU202610	AL-3406 Utilization Manual
MU209010	PONTO Series PROFIBUS Remote Configuration Manual
MU209503	PROFIBUS PO5063 Head and PROFIBUS PO5063V4 Redundant Head Utilization Manual
MU209903	PO4053 PROFIBUS Net Interface Utilization Manual

All the above documents are available for download on site www.altus.com.br or can be purchased in printed form.

Revisões

Esta CT, de revisão B, é válida a partir da revisão A do module PO4053.

A revisão deste documento é mostrada na margem superior, indicando alterações no conteúdo ou melhorias no formato.

Para melhorias do Produto, a Altus reserva-se o direito de alterar esta CT sem prévio aviso.

Histórico das revisões:

Revisão: A	Data: 06/01/2005
Aprovação: Luiz Gerbase – DIR	
Autor: Sérgio Bordini	

Observações:

- Revisão inicial

Revisão: B	Data: 07/06/2005
Aprovação: Luiz Gerbase – DIR	
Autor: Sérgio Bordini	

Observações:

- Atualizada conforme revisão D da CT em português