

Product Description



The PROFIBUS bus slave interface allows connection of open networks which follows PROFIBUS-DP standard, based on IEC 61158 standard. The interface allows a slave connection of AL-2003 or Aal-2004 CPUs to any PROFIBUS-DP Master.

The AL-3416 interface also has two buses for connection of Quark Series modules, allowing connect up to 2 racks with 16 modules in each one, fed by QK2511 or QK2512 power supplies.

The AL-3416 interface allows hot swapping in Quark bus. The hot swapping is requested by a switch on QK2511 or QK2512 power supplies. The AL-3416 board read this signal and grants the hot swapping, interrupting the scan in this bus and turning off the power supply.

AL-3416 main characteristics are:

- PROFIBUS-DP field bus connection, IEC 61158 standard as a slave
- Interface is configured up to 24 modules
- Communication speed on PROFIBUS network: up to 12 Mbaud
- Automatic Baud Rate detection
- Connecting up to 32 Quark modules in two buses
- Hot swapping of Quark modules
- 8 LEDs for diagnostic indication
- AL-3411 module compatibility
- Embedded autotesting
- 244 input bytes and 244 output bytes capacity

Ordering Information

Packing List

The product packing contains the following parts:

- AL-3416 Module
- Installation guide

Part Number

The following code must be used when ordering th product

Part Number	Description
AL-3416	PROFIBUS Slave Interface

Related Products

The following products must be ordered separately when needed:

Part Number	Description
AL-2601	Connector for PROFIBUS net
AL-2602	Termination connector for PROFIBUS net
AL-2605	Termination with Supply Diagnostic
AL-2303	PROFIBUS net cable, 7,1 mm diammeter
AL-1367	CMDB25-CMDB25/0,6M cable (AL-3411/Power supply)

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-2602: the PROFIBUS connectors a DB9 type with standard pin-out and assembled internal termination components. It is appropriate to connect PROFIBUS devices in extremes positions of PROFIBUS network (beginning or ending).

AL-2605: AL-2605 terminator is assembled in PROFIBUS net extremes. Allows that master or slave units which are at net extremities can be de-energized without disturbing net communications. The AL-2605 has internal bus termination and redundant supplies. Has operation diagnostic through dry relay contacts.

AL-2303: PROFIBUS net data communication cable.

AL-1367: This cable is used to connect AL-3416 Quark buses to QK2511 or QK2512 power supplies. Has three length options: 0,6 m, 1,5 m ou 2,5 m.

Characteristics

	AL-3416
Module type	PROFIBUS-DP slave interface and Quark bus interface
Communication Protocol	PROFIBUS-DP slaver, EN50170, IEC 61158 and IEC 61784 standards
Interface	Multiprocessed: independent processors for PROFIBUS net and bus
Network architecture	Bus, without derivations
Communication Speed	Up to 12 Mbaud
Leds for diagnostic indication	7: 1 LED for for each Quark bus; 5 LEDs for network diagnostic indication.
Autotesting	Embedded
Power consumption	50 mA @ 15 Vdc 800 mA @ 5 Vdc
Module dissipation	4,75 W
Isolation	500 Vdc @ 1 minute, PROFIBUS net to logic
Maximum operation temperature	60 °C
Standards accomplished	EN 50170, IEC 61158 e IEC 61784 IEC 61131 standards See series general characteristics

Bus Expansion:

Maximum number of Quark buses	2
Maximum number of modules per bus	16
Hot Swapping	Individual per module or bus

Software Characteristics

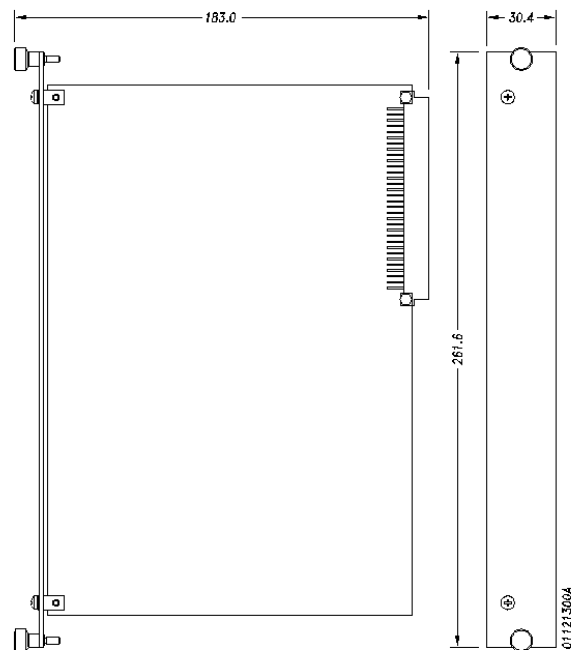
Communication	Through PROFIBUS-DP protocol
Configuration and programming	Through MasterTool software
Operand type accessed	A, E, S, M and TM
Application utilization	Through F-3416.011 function
Input capacity	244
Output capacity	244
Number of Total input and output bytes	368
GSD File	ALT_0736.GSD

Notes:

- 244 input bytes includes digital and analog inputs
- 244 output bytes includes digital and analog outputs
- The total number of input and output bytes cannot surpass 368 bytes.
- Compatibility: The AL-3416 module must be used with 1.64 AL-2003 executive version or 2.03 AL-2004 executive version.
- The GSD file is available in site : www.altus.com.br

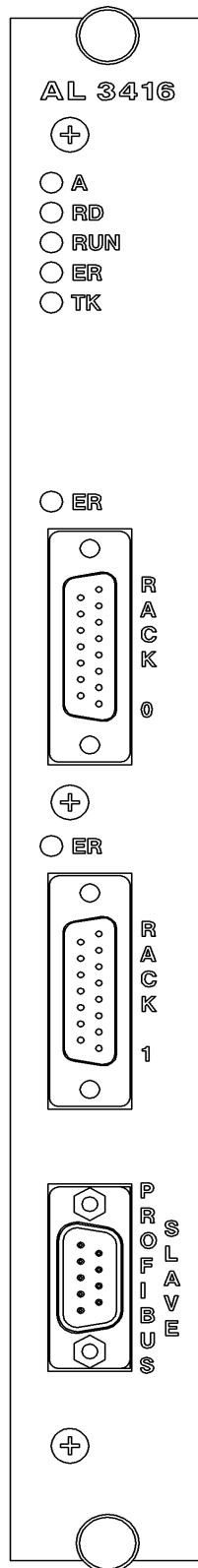
Physical Dimensions

Dimensions in mm.



AL-2003 and AL-2004 utilization Manual must be consulted for panel dimensioning.

AL-3416 Panel



Leds PROFIBUS:

- A = ACTIVE
- RD = READY
- RUN = RUN
- ER = ERROR
- TK = TOKEN

LED ERROR RACK 0

CONNECTOR RACK 0

LED ERROR RACK 1

CONNECTOR RACK 1

CONNECTOR PROFIBUS

04110500A

Manuals

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

Document number	Description
MU202001	AL-3416 Utilization Manual
MU299026	PROFIBUS net Utilization Manual
MU207011	AL-2002/AL-2003 Utilization Manual
MAN/MT4100	MT4100 - MasterTool Utilization Manual

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