



ARION-IO Module

Ref: 5001-0608-1

Arion-IO
Technical
specification

Arion Real-time Technology

The Arion-IO Module provides direct access between application and I/O boards' through the Arion100 network. With this solution every application can access to remote I/O with simples Read and Write command. All data are time-stamped and transmitted on the real-time network.

Features



Communication:

- Rating: 100 Mbps
- Transmission efficiency: Up to 85%

Usability:

- Data access with basic Read and Write command
- Data sharing between application
- Data time-stamping with 1 μ s reliability
- System configuration with simples XML files



Physical and environmental condition

- Industrial DIN Format: 218 x 133 x 180 mm
- Weight: 2.4Kg
- Temperature: Industrial Range -40°C to +85°C
- Fan cooling: Module temperature and voltage monitoring
- External Power Supply: 18 to 60 V_{DC} or 15 to 45 V_{AC}
- Complete Galvanic Isolation
- Maximum Slots power supply
 - Ø 5V : 15 A
 - Ø 3.3V : 22 A

I/O Boards products line

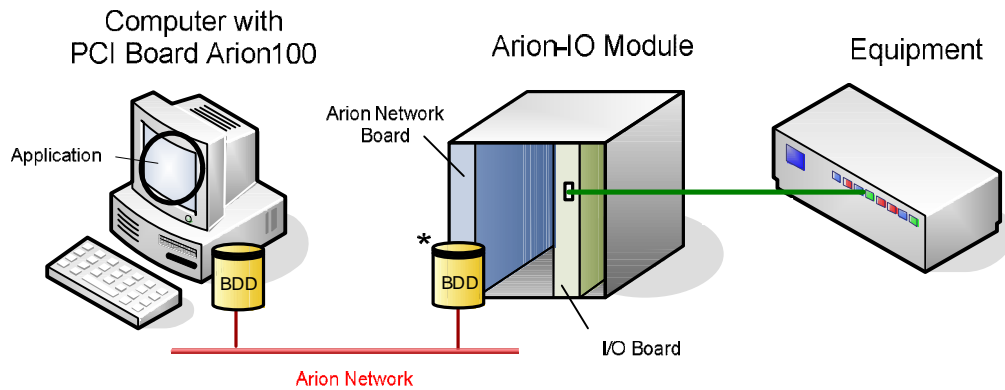
11 slots are available in the Arion-IO Module for I/O boards:

- Boolean Boards: Digital I/O, Relay Outputs
- Analog Boards: Analog I/O, Frequencies Outputs, PWM I/O, Xvdt Outputs
- Communication Boards: Arinc 429
- Processor Board: Power-PC I/O



Application example

Arion-IO Module can be use in many application-fields: Industrial Automatism, Monitoring, Simulation real-time solutions.



*Arion distributed Database

Abstract

- User-friendly:
Data access with basic Read and Write command
System configuration with simple XML files
- Real-time transmission:
With Arion network technologies
- Data time-stping:
All data are time-stamped with 1 μ s reliability
- Compatibility:
Arion technology support different OS as Windows, Linux, VxWorks

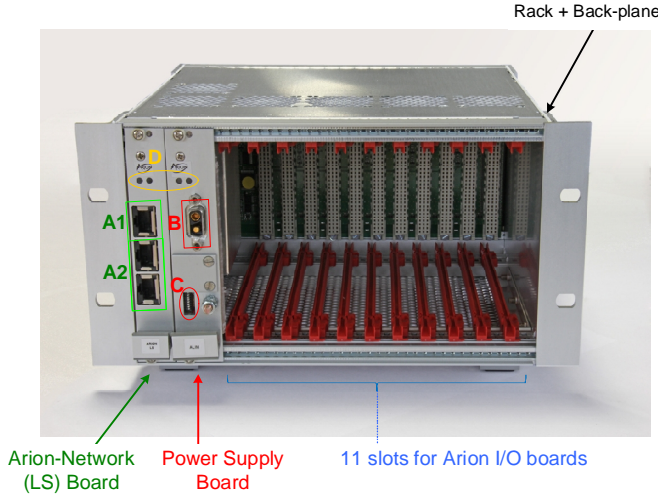


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Arion-IO Board installation

Arion-IO Module parts



The Arion-IO module parts:

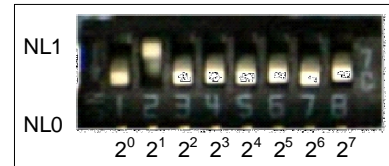
- Rack - Ref: 5010-0608-1
- Back-plane for 11 boards - Ref: 5011-0608-1
- Power supply - Ref: 5012-0608-1
- Arion-Network (LS) - Ref: 5020-0608-1

Module & Boards Installation

Network logical number & MAC address:

Set the module logical number and its MAC address on the Arion network with the switch **C**.
This number must be set when the Arion-IO Module is powered off.

For example on this picture the logical number is set to 2.



Arion100 network connection:

Connect the **A1** RJ45 connector to the Arion100 network through a HUB. The two others RJ45 connectors (**A2**) must be left unconnected.

I/O Boards installation:

Arion I/O Boards can be installed in slots 3 to 13 of the rack.

Power supply:

Connect the external power supply to the connector **B** (see power supply specification). For electromagnetic security a mechanical ground can be connected to the screw in front of the power supply board.

Boards' LED Status

Two LED (**D**) give information about the functional status of the boards (their meanings depend of the board).

	Arion-Network Board		Power Supply Board		Arion I/O Boards*	
Left LED	x	x	Green	The board is power ON	Green	The board is power ON
Right LED	Green	The board is power ON	Green	The board is configured	Green	The board is configured
			Orange	Fan or temperature failure		

*Excepted for Arinc 429 Board where the LED are inverted.



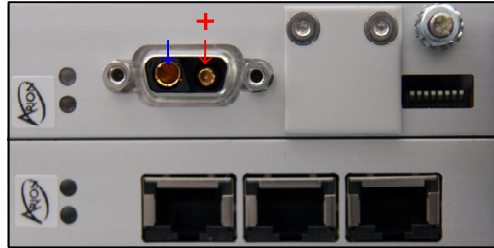
Arion-IO Module - Ref: 5001-0608-1

Power Supply Specification

The Arion power supply board can be powered by:

- DC power supply: 18 V_{DC} to 60 V_{DC} (I_{TYP} = 6 A)
- AC power supply: 15 V_{RMS} to 45 V_{RMS} (I_{TYP} = 6 A)

Connector specification



Arion recommends the use of its power supply kit (Ref: Arion-IO 5013-0608-1).

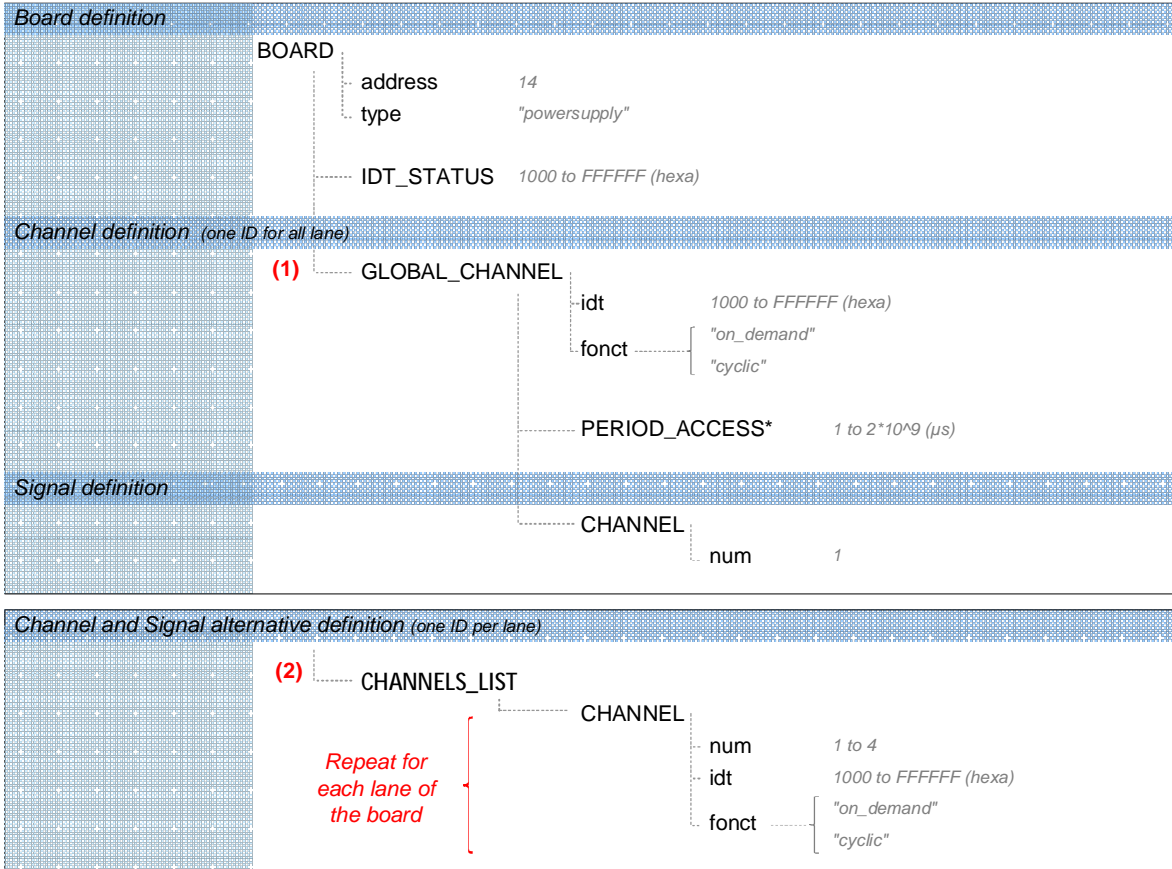
Complementary Products / Accessories

Products	Referencies
External power supply 220VCA/130VA (for Arion-IO Module)	Arion-IO 5013-0608-1
HUB 8 Ports	Arion-Interco 7101-0803-1
Power supply for HUB	Arion-Interco 7141-0803-1
Front Panel 3U (for empty slots)	Arion-IO 5014-0608-1
Assembly Kit for installing 1 Arion Rack in a 19-inch Unit	Arion-IO 5013-0608-2
Assembly Kit for installing 2 Arion Rack in a 19-inch Unit	Arion-IO 5013-0608-3
Ethernet straight cable RJ45 – 3m	Arion-Interco 7103-0803-1
Ethernet straight cable RJ45 – 5m	Arion-Interco 7103-0803-2



Configuration pattern

You must follow the tags and attributes order explained in this pattern to write your ArionIO.xml.



- Uppercase = XML tag
- Lowercase = XML attribute
- Lowercase italic = value
- (1) ... (2) = Alternative configuration
- * = Conditional configuration (see table below)



Parameters description

Name	Value	Fonction	Special condition
<i>Board definition (Tag: BOARD)</i>			
address	14	Address of the board	none
type	powersupply	Type of the board	none
IDT_STATUS	1000 to FFFFFFFF	Unique ID of the data status of the board in hexadecimal	none
<i>Channel definition (Tag: GLOBAL_CHANNEL, CHANNELS_LIST)</i>			
idt	1000 to FFFFFFFF	Unique ID of the data object in hexadecimal	none
fonct	on demand cyclic	Set the functional mode of the data object	none
PERIOD_ACCESS	integer (1 to 2*10 ⁹)	LSB=1us (multiple of arion timer_x)	none
<i>Signal definition (Tag: CHANNEL)</i>			
num	integer (1 to 4)	Sensor channel number's board	none

Remarks:

In GLOBAL_CHANNEL configuration, only one unique ID is set for the 4 sensor channels. All the data are in the same ID.

In CHANNEL_LIST configuration, each sensor channel has a unique ID for its data.

The tag "IDT_STATUS" and the attribute "idt" can be set as "auto" in the XML. In this case the IDs are created automatically.

idt format: "rack number"+"board number"+"channel number"

IDT_STATUS format: "rack number"+"board number"+100

WARNING: The slot 14 is numbered 12 for the power supply board. For example: Power supply board of rack 2 in global_channel:

-idt: 2C001
-IDT_STATUS: 2C100