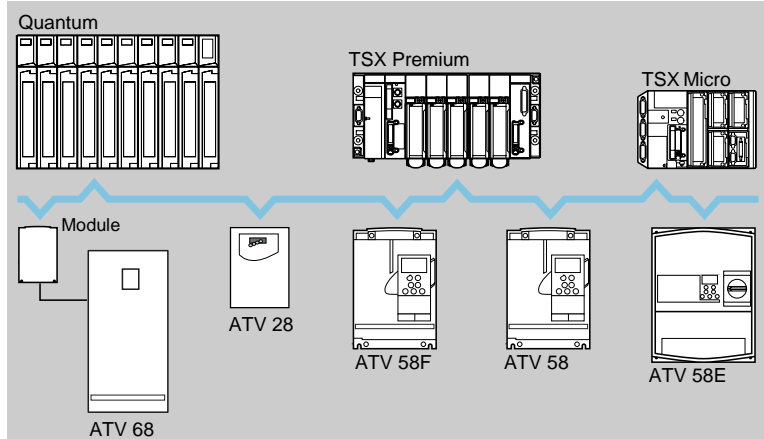




Presentation



The Modbus protocol is a master-slave protocol. Two exchange mechanisms are possible:

- **Question/answer:**
the requests from the master are addressed to a given slave. The master then waits for the response from the slave which has been interrogated.
- **Broadcast:**
the master broadcasts a message to all the slave stations on the bus, which execute the command without transmitting a response.

Altistart 48 starters and Altivar 28/38/58/58F speed drives are connected to the Modbus bus via their terminal port. On Altivar 38/58/58F drives, the terminal port can be freed up by using a communication card.

Altivar 68 speed drives are connected to the Modbus bus via a communication module.

Characteristics		Terminal port		Module	Communication card	
Type of connection		ATS 48		ATV 28/38/58/58F	ATV 68	ATV 38/58/58F
Structure	Type	Industrial bus				
	Physical interface	RS 485				
	Access method	Master/slave type				
Transmission	Mode	RTU				RTU or ASCII
	Data rate	19.2 or 9.6 Kbps	●	●	●	●
		4.8 Kbps	●	–	●	●
		2.4 and 1.2 Kbps	–	–	●	–
Medium	Double shielded twisted pair					
Configuration	Number of devices	18, 27 or 31 slaves, depending on polarisation (1)				
	Type of polarisation	Pulldown resistors of 4.7 kΩ		No pulldown		Configurable No pulldown or pulldown resistors of 4.7 kΩ
	Length of bus	1000 or 1300 m excluding tap links, depending on polarisation (1)				
	Tap link	3 or 20 m maximum, depending on polarisation (1)				

(1) See the configuration table on page 60953/3.

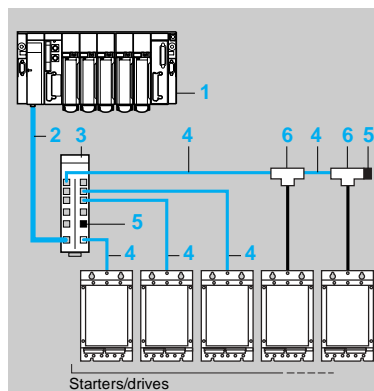
Configuration on the basis of polarisation

The specification of the physical layer provided by standard RS 485 is incomplete. Various polarisation diagrams can therefore be applied, depending on the environment in which the equipment is to be used.

		Master	
		With polarisation 4.7 kΩ	With polarisation 470 Ω
Slave	Without polarisation	Configuration not recommended	Jbus type configuration 31 slaves Length of bus: 1300 m Tap link: 3 m max. Fit a line terminator (R=150 Ω)
	With polarisation 4.7 kΩ	Uni-Telway type configuration 27 slaves Length of bus: 1000 m Tap link: 20 m max. Fit an RC line terminator	18 slaves Length of bus: 1000 m Tap link: 20 m max.

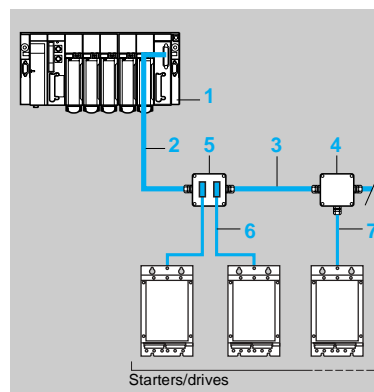
Connections

Connections via splitter blocks and RJ45 type connectors



- 1 PLC (1)
- 2 Modbus cable depending on the type of controller or PLC
- 3 Modbus splitter block **LU9 GC3**
- 4 Modbus drop cable **VW3 A8 306 R●●**
- 5 Line terminators **VW3 A8 306 RC**
- 6 Modbus T-junction boxes **VW3 A8 306 TF●●** (with cable)

Connections via junction boxes



- 1 PLC (1)
- 2 Modbus cable depending on the type of controller or PLC
- 3 Modbus cable **TSX CSA ●00**
- 4 Junction box **TSX SCA 50**
- 5 Subscriber sockets **TSX SCA 62**
- 6 Modbus drop cable **VW3 A8 306**
- 7 Modbus drop cable **VW3 A8 306 D30**

Connections via screw terminals

In this case, use a **VW3 A8 306 D30 Modbus** drop cable and **VW3 A8 306 DRC** line terminators.

(1) Please consult our "Premium automation platform" catalogue.

Starters, drives and communication

Communication via Modbus bus



VW3 A68303



TSX SCA 50



TSX SCA 52

Communication module

Description	Reference	Weight kg
Communication module for ATV 68 fitted with an RJ45 connector and a female 9-way SUB-D connector	VW3 A68303	1.400

Connection accessories

Description	Reference	Weight kg	
Junction box 3 screw terminals, RC line terminator	TSX SCA 50	0.520	
Subscriber sockets 2 female 15-way SUB-D connectors and 2 screw terminals, RC line terminator	TSX SCA 62	0.570	
Modbus splitter block 8 RJ45 type connectors and 1 screw terminal	LU9 GC3	0.500	
Line terminators (1)	For RJ45 connector R = 120 Ω, C = 1 nF	VW3 A8 306 RC	0.200
	R = 150 Ω	VW3 A8 306 R	0.200
	For screw terminals R = 120 Ω, C = 1 nF	VW3 A8 306 DRC	0.200
	R = 150 Ω	VW3 A8 306 DR	0.200
Modbus T-junction boxes	With integrated cable (0.3 m)	VW3 A8 306 TF03	–
	With integrated cable (1 m)	VW3 A8 306 TF10	–

Connecting cables (2)

Description	Length m	Connectors	Reference	Weight kg
Cables for Modbus bus	3	1 RJ45 connector and one end stripped	VW3 A8 306 D30	0.150
	3	1 RJ45 connector and 1 male 15-way SUB-D connector for TSX SCA 62 subscriber sockets	VW3 A8 306	0.150
	0.3	2 RJ45 connectors	VW3 A8 306 R03	0.050
	1	2 RJ45 connectors	VW3 A8 306 R10	0.050
	3	2 RJ45 connectors	VW3 A8 306 R30	0.150
	3	1 male 9-way SUB-D connector and 1 male 15-way SUB-D connector for TSX SCA 62 subscriber sockets	VW3 A68 306	0.150
Cable for module	3	2 RJ45 connectors	VW3 A68 313	0.150
RS 485 double shielded twisted pair cables	100	Supplied without connector	TSX CSA 100	–
	200	Supplied without connector	TSX CSA 200	–
	500	Supplied without connector	TSX CSA 500	–

(1) Sold in lots of 2.

(2) Use the table below to select the appropriate connection cables:

	ATS 48 ATV 28	ATV 38/58/58F Terminal port	ATV 38 Communication card	ATV 68
Junction box TSX SCA 50	Cable VW3 A8 306 D30	Cable TSX CSA●● + connector (3)	Cable TSX CSA●● + connector (3)	Cable TSX CSA●● + connector (3)
Subscriber sockets TSX SCA 62	Cable VW3 A8 306	Cable VW3 A58 306	Cable VW3 A58 303 (included in the kit)	Cables VW3 A68 313 VW3 A68 306
Splitter block LU9 GC3	Cable VW3 A8 306 R●●	Cable VW3 A8 306 D30	Cable VW3 A8 306 D30	Cables VW3 A68 313 VW3 A8 306 D30

(3) Male 9-way SUB-D connector (to be ordered separately)

Starters, drives and communication

Communication via Modbus bus

Modbus bus connection kits

Description	Used for	For protocol	Reference	Weight kg
RS485 connection kit between a TSX SCA 62 subscriber socket and the terminal port, comprising: <ul style="list-style-type: none"> ■ 1 cable (length 3 m) with one male 9-way SUB-D connector and one male 15-way SUB-D connector ■ 1 "RS485" user's manual ■ 1 "Communication variables" user's manual 	ATV 38/58/58F	Modbus RTU (1)	VW3 A58306	0.300
Communication kit comprising: <ul style="list-style-type: none"> ■ 1 communication card equipped with a male 9-way SUB-D connector ■ 1 x 3 m cable with: <ul style="list-style-type: none"> □ 1 male 9-way SUB-D connector for connection to the communication card and □ 1 male 15-way SUB-D connector for connection to a TSX SCA 62 subscriber socket 	ATV 58 with operator terminal	Uni-Telway, Modbus ASCII Modbus RTU/Jbus	VW3 A58303	0.300

Documentation

Description	Format	Reference	Weight kg
International technical manual (ITM) (2)	CD-ROM	DCI CD 398111	0.150

(1) Modbus RTU only, 8 drives maximum on the network, 9600 bps fixed speed for the ATV 58, 9600/19,200 bps adjustable speed for the ATV 28.

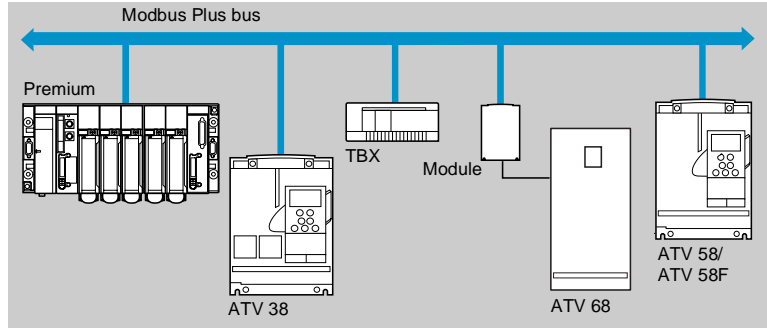
(2) Library containing:

- manuals and quick reference guides for starters and speed drives,
- user's manuals for communication gateways.

Starters, drives and communication

Communication via Modbus Plus bus

Presentation



The Modbus Plus network is a token network which enables point-to-point communication between the various subscribers. Each subscriber listens and speaks at the token rotation speed.

Altivar 38/58/58F/68 variable speed drives are connected to the Modbus Plus bus via:

- a VW3 A58302 communication card for ATV 38/58/58F,
- a communication kit for ATV 68.

Modbus Plus communication profile

Altivar 38/58/58F/68 variable speed drives on the Modbus Plus bus, controlled by a PLC, are accessed by simple configuration in the PLC using "Peer Cop" services and the Modbus Plus network "global data" database. Rapid exchange of the main drive registers is thus made possible. The PLC/drive communication speed is not affected by the number of drives on the network (20 maximum with "Peer Cop" rapid exchange). The other parameters, which are used less frequently, can be accessed via the standard PLC function block (MSTR) only for Altivar 38/58 and Altivar 58F drives.

Rapid exchange

PLC writing to drive (Peer Cop)

32 words for ATV 38/58/58F
 Frequency references
 Control register
 Low and high speed
 Preset speeds
 Acceleration/deceleration 1 and 2
 IR compensation
 Voltage/frequency profile (U/F)
 Slip compensation
 Etc

4 words for ATV 68
 Control register
 References

Drive writing to PLC (Global Data)

32 words for ATV 38/58/58F
 Reference frequency/applied frequency
 Status register
 Motor current/speed
 Supply voltage
 Drive/motor temperature
 Read discrete or analogue I/O
 Number of faults
 Current fault
 Etc

4 words for ATV 68
 Status register
 Motor frequency
 Motor speed
 Motor current

Starters, drives and communication

Communication via Modbus Plus bus

Characteristics			
Bus type		Modbus Plus bus	
Structure	Type	Industrial bus	
	Topology	Point-to-point, bus and "self-healing" ring	
	Access method	"Plug and play"	
Transmission	Mode	Baseband physical layer on shielded twisted pair	
	Data rate	1 Mbps, useful data rate 20,000 words/s	
	Medium	Shielded twisted pair 120 W BELDEN 9841. Optical fibre 50/125, 62/125, 100/140 mm with the use of electrical/fibre optic repeaters	
Configuration	No. of devices per segment	32 connection points per segment	
	Maximum	64 over all segments	
	Number of segments	Unlimited in tree or star architectures Limited to 4 cascaded routers (4 cascaded repeaters) The link between 2 devices should cross 4 electrical routers and/or 3 repeaters maximum	
	Length of bus	450 m maximum without repeater for an electrical segment 1800 m maximum between the furthest devices (3 repeaters) 3000 m between 2 fibre optic repeaters	
Services	Modbus Plus	Point-to-point requests with confirmation report: 200 bytes maximum, compatible with all Modbus/Jbus devices	
	Application-to-application	Point-to-point messages (Peer Cop): 64 bytes in read and write mode, 64 bytes in broadcast mode via the global database	
	Security	Each frame is protected by a CRC 16 and an acknowledgement of receipt conforming to layers 1, 2, 7, of the OSI model	
	Monitoring	Network diagnostics are performed by the PC software or by the standard PLC function block (MSTR)	
For drives			
Functions	"Peer Cop" control and adjustment	ATV 38/58/58F 32 predefined words	ATV 68 1 predefined word, 3 configurable references
	"Global Data" monitoring	32 predefined words	1 predefined word, 3 configurable words
	"MSTR" configuration and adjustment	Read/write access to all ATV 38/58/58F functions by the PLC application program	–

Starters, drives and communication

Communication via Modbus Plus bus



VW3 A58302



VW3 A68302

Modbus Plus bus connection elements

Cards

Description	Used with	Reference	Weight kg
Communication card The card is equipped with a female 9-way SUB-D connector which can take a Modbus Plus drop cable with connectors, reference 990 NAD 211 10 or 990 NAD 211 30. This cable should be connected to a Modbus Plus tap, reference 990 NAD 230 00 for connection to the Modbus Plus trunk cable, reference 490 NAA 271●●. To order cables and sockets, please consult our catalogue.	ATV 38 ATV 58 ATV 58F	VW3 A58302	0.300
Communication card The kit comprises: <ul style="list-style-type: none"> ■ the Modbus Plus card, equipped with a female 9-way SUB-D connector, which can take a Modbus Plus drop cable with connectors, reference 990 NAD 211 10 or 990 NAD 211 30, to be connected to a Modbus Plus tap, reference 990 NAD 230 00 for connection to the Modbus Plus trunk cable, reference 490 NAA 271 ●● (1), ■ the communication interface, reference VW3 A68300, ■ the connecting cable, reference VW3 A68332 Fit an external power supply $\bar{\sim}$ 24 V, 200 mA minimum, type TBX SUP10 (to be ordered separately).	ATV 68	VW3 A68302	1.400

Modbus Plus connection accessories

Description	Used	Reference	Weight kg
Modbus Plus tee	Trunk cable tap link	990NAD21910 (1)	0.050
Modbus Plus tool	For easier insertion of cables into the tee	043509383 (1)	0.050

Modbus Plus bus connecting cables

Description	Used		Length	Position of connector	Reference	Weight kg
	From	To				
Cables for Modbus Plus	Communication card	Modbus Plus tee	2.4 m	Right	990NAD21910 (1)	0.100
			6 m	Right	990NAD21930 (1)	0.300
			2.4 m	Left	990NAD21810 (1)	0.100
			6 m	Left	990NAD21830 (1)	0.300

Documentation

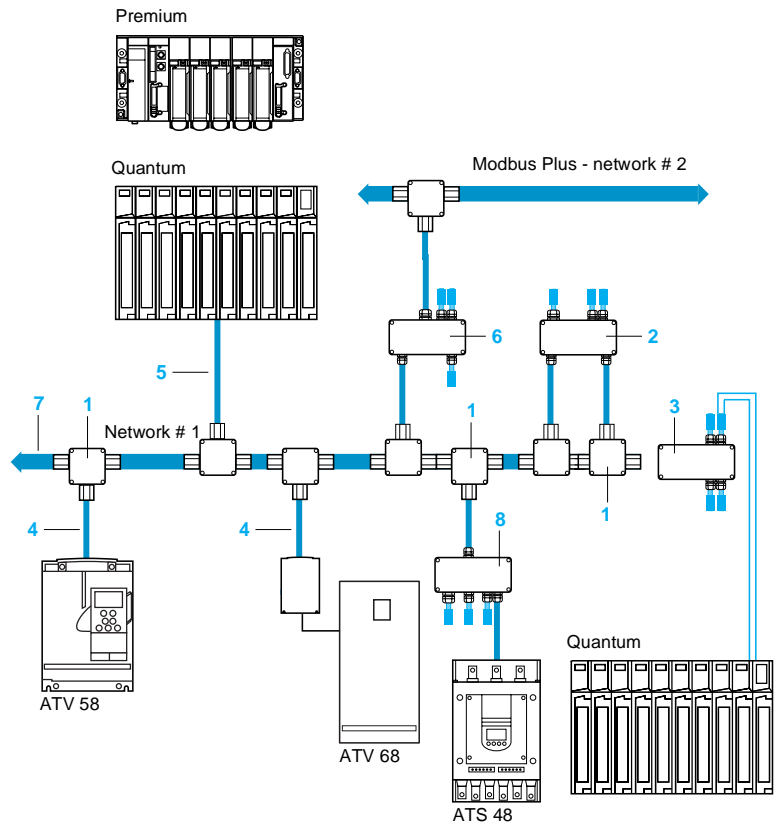
Description	Language	Supplied	Reference	Weight kg
Altivar 38/58/58F Modbus Plus user's manual	French English	With the communication card	VVDED397044	0.180
Altivar 68 user's manual	French English	With the communication kit	VVDED300022	0.180

(1) Products sold under the Modicon brand.

Starters, drives and communication

Communication via Modbus Plus bus

Modbus Plus wiring system



- 1 990NAD23000** Tee for Modbus Plus
- 2 NWRR85001** Repeater for Modbus Plus network (extension to 64 subscribers or extension to 450 m)
- 3 490NRP25400** Fibre optic repeater for Modbus Plus network
- 4 990NAD21810** Modbus Plus cable (length 2.4 m) with connector exiting on left
990NAD21830 Modbus Plus cable (length 6 m) with connector exiting on left
990NAD21910 Modbus Plus cable (length 2.4 m) with connector exiting on right
990NAD21930 Modbus Plus cable (length 6 m) with connector exiting on right
- 5 990NAD21110** Modbus Plus cable dedicated to the Quantum PLC (length 2.4 m) with connector exiting on left
990NAD21130 Modbus Plus cable dedicated to the Quantum PLC (length 6 m) with connector exiting on right
- 6 NWBP85002** Modbus Plus bridge
- 7 490NAA27101** Modbus Plus cable on a 30 m reel
490NAA27102 Modbus Plus cable on a 150 m reel
490NAA27103 Modbus Plus cable on a 305 m reel
490NAA27104 Modbus Plus cable on a 455 m reel
490NAA27105 Modbus Plus cable on a 1525 m reel
- 8 NWBM85000** Modbus Plus communication gateway to 4 Modbus master or slave ports

Presentation

Nowadays, applications for distributed control systems can use a single communication network. The network should meet not only the demands for realtime performance on the factory floor, but also the need for open access to control/monitoring software. It should be based on products using standard communication protocols or applications using Internet technology. Ethernet responds to these different needs in terms of data rate, capacity for open access on TCP/IP and flexibility in terms of topology. All these criteria are reinforced by the capacity of Schneider Electric to provide high-level services which enable the user to reduce his development and operating costs.

Ethernet communication is mainly aimed at applications for:

- coordination between PLCs,
- local or centralised supervision,
- communication with production management software,
- communication with remote I/O,
- communication with industrial control products.

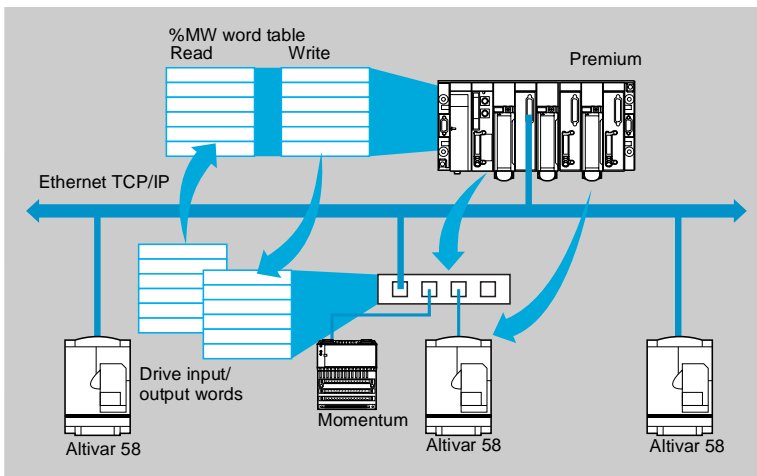
The Altivar 58 drive connects to the Ethernet TCP/IP network via the VW3 A58310 communication card.

This communication card supports:

- a TCP/IP communication profile on Ethernet 10/100 Mbps,
- the I/O Scanning function,
- the integrated Web server function.

I/O Scanning service

Schematic diagram



The Altivar 58 drive accepts the I/O scanning service generated by:

- automation platforms:
 - Premium equipped with a TSX ETY 410/5101 module,
 - Quantum,
 - Momentum M1E,
- a PC equipped with Modbus communication software with I/O scanner function.

This service is used to manage the exchange of remote I/O on the Ethernet network after simple configuration and without the need for special programming.

The drive I/O are scanned transparently by means of read/write requests according to the Modbus Master/Slave protocol on the TCP/IP profile.

The Altivar 58 I/O scanning service can be disabled. Please consult our "Premium automation platform" catalogue.

Control configuration

The Web server "Control configuration" screen is used to:

- enable the I/O scanning service,
- configure the I/O scanner (assignment of 10 drive input words and 10 drive output words to configurations, adjustments and signalling according to the requirements of the client application),
- configure the communication functions.



Starters, drives and communication

Ethernet TCP/IP network

Integrated Web server

The Altivar 58 drive incorporates an integrated Web server, in English. The functions provided by the Web server require no special configuration or programming of the PC which supports the Internet browser. The Web server screens are predefined, with secure access (password).

The integrated Web server provides access to the following functions:

- Altivar Viewer,
- Data Editor,
- Statistics,
- Security,
- Web server for Pocket PC.

1 “Altivar Viewer” function

The “Altivar Viewer” screen is used to display:

- the drive status,
- the motor speed,
- the drive I/O.



2 “Data Editor” function

The “Data Editor” screen is used to access the drive configuration, adjustment and signalling functions. For safety reasons, the drive control function is not accessible.



3 “Statistics” function

The “Statistics” screen gives the Ethernet network communication statistics. It also shows the product connected to the network (reference, software version, etc).



4 "Security" function



The "Security" screen is used to modify the user name and passwords:

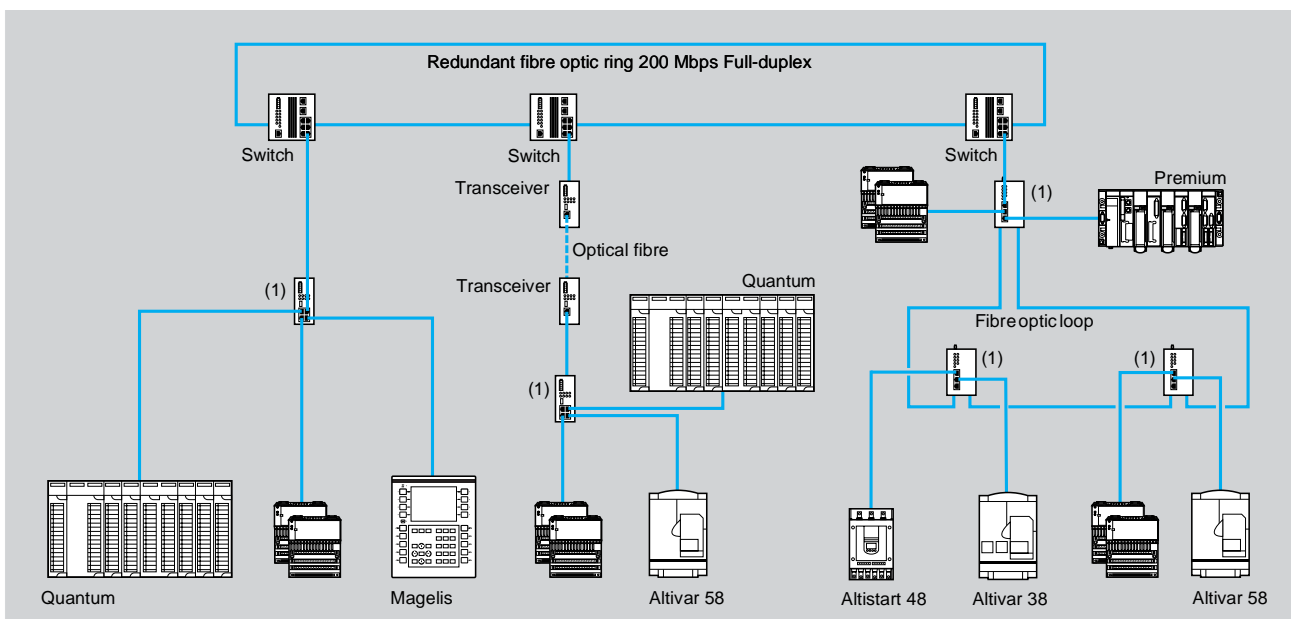
- the HTTP password authorises access to the drive function display,
- the Data Editor Write password authorises access to modification of the drive functions.

5 "Altivar Viewer for Pocket PC" function



The "Altivar Viewer for Pocket PC" screen is used to display a table of the main drive data.
The Web browsers for Pocket PC do not provide access to the screens shown opposite.

Connections



(1) Splitter block

The communication card is incorporated in the Altivar 58 drive and is connected to the Ethernet TCP/IP network via a 10/100baseT interface (RJ45).
See page 60958/5 for accessories and connecting cables.

Type of link		Ethernet
Characteristics		
Structure	Type	Industrial local area network conforming to ANSI/IEEE Std 802.3 (4th edition 1993-07-08)
	Topology	Star network
Transmission	Mode	Manchester baseband. Half-duplex or full-duplex
	Data rate	10/100 Mbps with automatic recognition
	Medium	STP double shielded twisted pair impedance 100 Ω ± 15 Ω for 10 baseT or category 5 Ethernet cable conforming to standard TIA/EIA-568A
Configuration	Number of device stations	Point-to-point connection (via RJ45 standard connector) enabling formation of a star network (the stations are connected to concentrators or switches) 64 stations max. per network
	Length	100 m max. between concentrator and terminal device
Ethernet functions	Access security	HTTP password. Password for modifications
	I/O scanning	Performed from a master Ethernet module 10 control words (outputs), 9 of which can be configured 10 signalling words (inputs), 9 of which can be configured
	I/P addressing	IP configuration via the drive operator terminal or via BOOTP. DHCP not supported.
	TCP/Modbus	Client/server mode. 8 simultaneous connections.
	HTTP server	Simultaneous connection of 8 Internet browsers possible
	File transfer	FTP not supported
	Network management	SNMP not supported
Conforming to standards	The communication card conforms to the following standards: ISO/IEC 8802.3, ANSI/IEEE Std 802.3 (4th edition 1993-07-08), UL 508C, CSA C22.2 N14 M95, C€ marking, Drive standards NF-EN50178, IEC 61800-3 class A	

Ethernet network connection elements



VW3 A58310



499 NEH00410



499 NES07100

Communication interfaces

Description	For drives	Reference	Weight kg
Communication card Ethernet Modbus TCP/IP 10/100 Mbps	ATV 38 ATV 58 (1) ATV 58F All ratings	VW3 A58310 (2)	0.300
Factory-installed Web server cannot be modified			
Ethernet/Modbus bridge with 1 x Ethernet 10baseT port (RJ45 type)		174 CEV 300 10 (3)	0.500

Connecting cables

Description	Connectors	Length m	Reference	Weight kg
Shielded twisted pair cables Create the link between the communication card and the Ethernet network	RJ45/RJ45	2	490 NTW00002	–
		5	490 NTW00005	–
		12	490 NTW00012	–
		40	490 NTW00040	–
		80	490 NTW00080	–

Wiring systems

Description	Type of Ethernet network	Available ports	Reference	Weight kg
TF splitter blocks	10 Mbps	4 10baseT ports	499 NEH00410	0.525
		3 10baseT ports 2 10baseFL ports	499 NOH00510	0.900
		4 100baseTX ports	499 NEH04100	1.450
TF switches (4)	10/100 Mbps	5 10baseT/100baseTX ports 2 100baseTX ports	499 NES07100	1.450
		5 100baseTX ports 2 100baseFX ports	499 NOS07100	1.450

(1) Compatible from version V2.3 ie08 of the ATV 58 drive.

(2) FTP/SNMP functions will be supported by the communication card which will be available from December 2002.

(3) Please consult our "Premium automation platform" catalogue.

(4) At 100 Mbps, connection of the **VW3 A58310** communication card on the Ethernet network via a switch only authorises data exchange in Half Duplex.

Starters, drives and communication

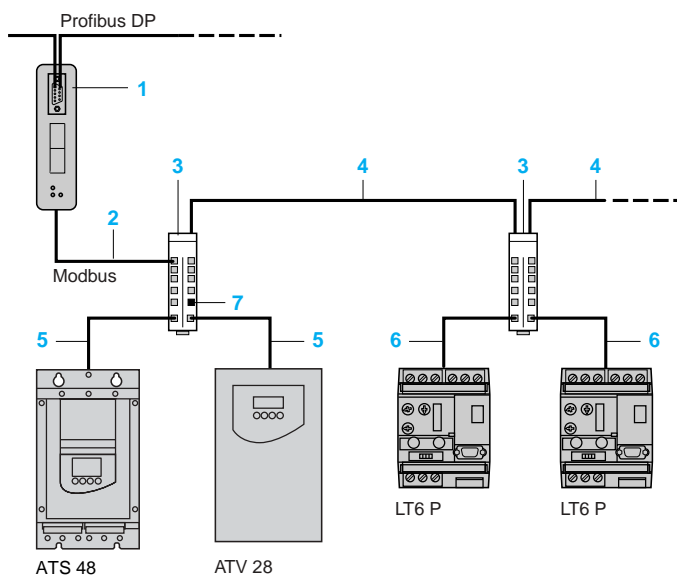
Communication gateway LA9 P307

Presentation

Communication gateway LA9 P307 provides connection between the Profibus-DP and Modbus buses. It is a Slave on the Profibus-DP bus and Master on the Modbus bus. It manages information present on the Modbus bus to make it available for read/write functions in the Master PLC on the Profibus-DP bus.

Gateway LA9 P307 consists of a box which can be clipped onto a 35 mm omega rail. It manages up to 15 Slaves on the Modbus bus.

Example of architecture



- 1 Gateway LA9 P307,
- 2 Tap-off cable VW3 P07 306 R10,
- 3 Modbus splitter box LU9 GC3,
- 4 Cable TSX CSA ●00,
- 5 Tap-link cable VW3 A8 306 R●●,
- 6 Tap-link cable VW3 A8 306 D30,
- 7 Line end adapter VW3 A8 306 RC.

Description

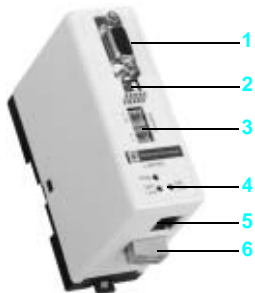
Gateway LA9 P307 comprises :

- 1 A SUB-D 9-way female connector for connection to the Profibus-DP bus,
- 2 A line end adapter on the Profibus-DP bus,
- 3 Gateway address coding on the Profibus-DP bus,
- 4 Status signalling LED,
- 5 RJ 45 female connector for connection on the Modbus bus,
- 6 --- 24 V power supply.

Software set-up

The gateway is configured using the standard software tools for the Profibus bus. For the Premium automation platform, use SYCON configurator software. The user's manual (.PDF) and the gateway description file (.GSD) are supplied on diskette with the gateway.

562289



Characteristics

Environment	Conforming to IEC 664		Degree of pollution: 2
Ambient air temperature	Around the device	°C	0...+ 50
Degree of protection			IP 20
Number of Modbus slaves which can be connected			15
Connection on	Modbus		RJ 45 connector
	Profibus		SUB-D 9-way female connector
Supply			External supply, $\pm 24\text{ V} \pm 20\%$
Consumption		mA	150 on $\pm 24\text{ V}$
Indication/diagnostics			By LED
Services	Command		16 words
	Monitoring		16 words
	Configuration and adjustment		By gateway mini messaging facility (PKW)

References



LA9 P307

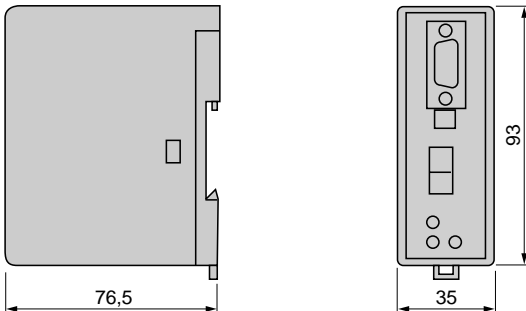


490 NAD 911 03

Description	For use with	Reference	Weight kg	
Profibus DP/Modbus communication gateway	LT6 P ATS 48 ATV 28/38/58/58F	LA9 P307	0.260	
Description	For use with	Length m	Reference	Weight kg
RJ 45 cable with stripped wires	Screw terminal block - T-junction box TSX SCA 50 - Y-junction subscriber socket TSX SCA 62	3	VW3 A8 306 D30	0.150
	SUB-D connector (to be ordered separately) - LT6 P (SUB-D 9 female) - ATV 58 (SUB-D 9 male)			
RJ 45-RJ 45 cable	ATS 48 ATV 28 Modbus splitter box LU9 GC3	1	VW3 P07 306 R10	0.050
Connectors	Profibus mid line	-	490 NAD 911 04	-
	Profibus line end	-	490 NAD 911 03	-

Dimensions

LA9 P307



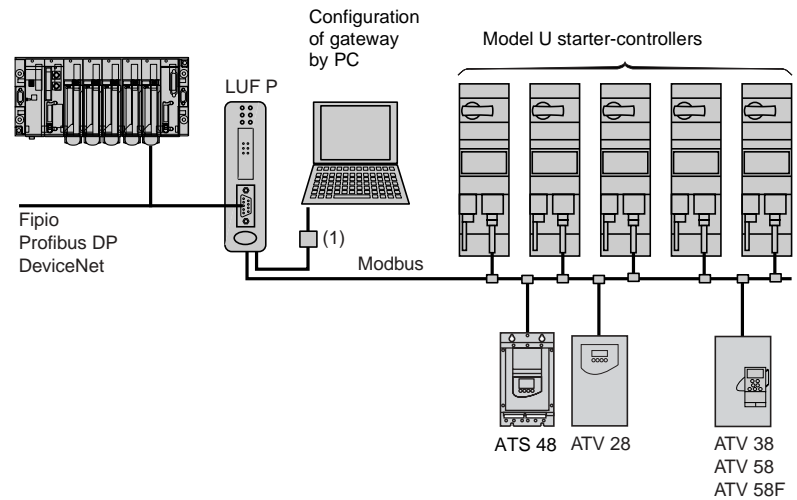
Presentation

Communication gateways LUF P allow connection between Modbus and field buses such as Fipio, Profibus DP or DeviceNet.

After configuration, these gateways manage information which can be accessed by the Modbus bus and make this information available for read/write functions (command, monitoring, configuration and adjustment) on the field buses.

An LUF P communication gateway consists of a box which can be clipped onto a 35 mm omega rail, allowing connection of up to 8 Slaves connected on the Modbus bus.

Example of architecture



(1) Connection kit for PowerSuite software workshop.

Description

Front panel of the product

- 1 LED indicating :
 - communication status of the Modbus buses,
 - gateway status,
 - communication status of the Fipio, Profibus DP or DeviceNet bus.
- 2 Connectors for connection to Fipio, Profibus DP or DeviceNet buses.

Underside of product

- 3 RJ45 connector for connection on the Modbus bus
- 4 RJ45 connector for link to a PC
- 5 \equiv 24 V power supply

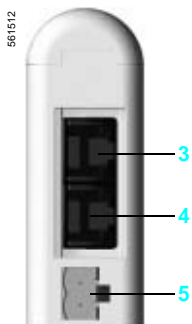
Software set-up

For the Fipio bus, software set-up of the gateway is performed using either PL7 Micro/Junior/Pro software or ABC Configurator software.

For the Profibus DP and DeviceNet buses, software set-up is performed using ABC Configurator.

This software is included:

- in the PowerSuite software workshop for PC (see page 60200/3),
- in the TeSys model U user's manual.



Characteristics

Bus type		Fipio	Profibus DP	DeviceNet
Environment	Conforming to IEC 664	Degree of pollution : 2		
Ambient air temperature	Around the device	°C	+ 5...+ 50	
Degree of protection		IP 20		
Electromagnetic compatibility	Emission	Conforming to IEC 50081-2 : 1993		
	Immunity	Conforming to IEC 61000-6-2 : 1999		
Number of Modbus slaves which can be connected		≤ 8		
Connection	Modbus	By RJ45 connector conforming to Schneider Electric RS485 standard		
	To a PC	By RJ45 connector, with PowerSuite connection kit		
	Field bus	By SUB D9 female connector	By SUB D9 female connector	By 5-way removable screw connector
Supply		V	External supply, --- 24 ± 10 %	
Consumption	Max.	mA	280	
	Typical	mA	100	
Indication/diagnostics		By LED on front panel		
Services	Profile	FED C32 or FED C32P	–	–
	Command	26 configurable words (1)	122 configurable words	256 configurable words
	Monitoring	26 configurable words (1)	122 configurable words	256 configurable words
	Configuration and adjustment	By gateway mini messaging facility (PKW)		

(1) If the gateway is configured using PL7 and not ABC Configurator, the I/O capacity is limited to a total of 26 words.

References

Description	For use with	With bus type	Reference	Weight kg
Communication gateways	TeSys Model U starter-controllers, Altistart 48, Altivar 28, 38, 58 and 58F	Fipio/Modbus	LUF P1	0.245
		Profibus DP/Modbus	LUF P7	0.245
		DeviceNet/Modbus	LUF P9	0.245

Connection accessories

822631



TSX FP ACC 12

822713



490 NAD 911 03

Description	For use with	Length m	Connectors	Reference	Weight kg
Connection cables	Modbus (2)	3	1 RJ45 type connector and one end with stripped wires	VW3 A8 306 D30	0.150
		0.3	2 RJ45 type connectors	VW3 A8 306 R03	0.050
		1	2 RJ45 type connectors	VW3 A8 306 R10	0.050
		3	2 RJ45 type connectors	VW3 A8 306 R30	0.150
Connectors	Fipio	–	1 SUB-D 9 male connector	TSX FP ACC12	0.040
	Profibus mid line	–	1 SUB-D 9 male connector	490 NAD 911 04	–
	Profibus line end	–	1 SUB-D 9 male connector	490 NAD 911 03	–

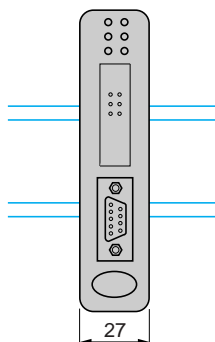
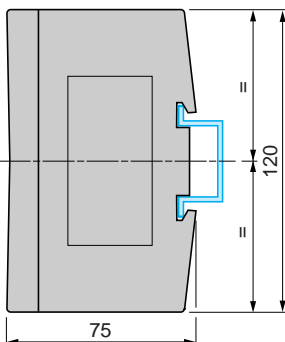
Documentation

Description	Medium	Language	Reference	Weight kg
User's manual for TeSys model U range (3)	CD-Rom	Multilingual : English, French, German, Italian, Spanish	LU9 CD1	0.022

(2) See pages 60953/2 and 60953/3.

(3) This CD-Rom contains user's manuals for AS-Interface and Modbus communication modules, multifunction control units and gateways, as well as for the gateway programming software, ABC Configurator.

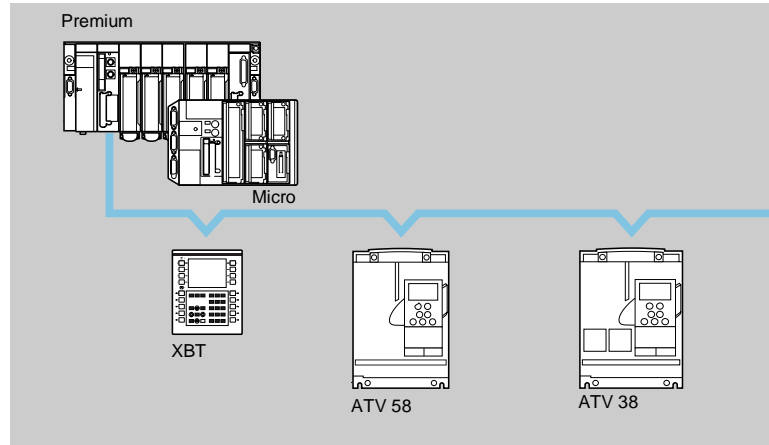
Dimensions



Starters, drives and communication

Communication via Uni-Telway bus

Presentation



The Uni-Telway bus is a standard means of communication between control system components (PLCs, HMI terminals, supervisors, variable speed drives, numerical controllers, etc.).

It is suitable for architectures designed to pilot control and monitoring equipment via a PLC, or architectures used for HMI (supervision, etc).

The Uni-Telway bus requires a master station (Premium, Micro) which manages the allocation of bus access rights to the various connected stations (known as slave stations) that can communicate with one another.

Characteristics

Bus type		Uni-Telway
For drives		ATV 38/58/58F
Structure	Type	Industrial bus
	Physical interface	RS 485 isolated
	Link	Multidrop
	Access method	Master/Slave type
Transmission	Mode	Asynchronous transmission in baseband
	Data rate	4.8...19.2 Kbps
	Medium	Double shielded twisted pair
Configuration	Number of devices	28 devices maximum
	Length of bus	1000 m max. excluding tap links
	Tap links	20 m maximum
Service	UNI-TE	Point-to-point requests with confirmation (question/response), of up to 240 bytes (1) initiated by any connected device
		Unsolicited point-to-point data without confirmation of up to 240 bytes (1) initiated by any connected device
		Broadcast messages of up to 240 bytes (1) initiated by the master device
	Other functions	Transparent communication, via the master, with any device in an X-WAY architecture Diagnostics, debugging, adjustment, programming of PLCs
	Security	Check character on each frame, acknowledgement and, if required, repetition of messages ensure security of transmission
Monitoring	Bus status table, transmission error counters and device status can be accessed by program in each device	

(1) Limited to 128 bytes with Micro/Premium PLC terminal port.

