Headquarters

France
applicom international s.a.
43, rue Mazagran
76320 Caudebec-lès-Elbeuf

International contact
tel: + 33 (0)2 32 96 26 36
fax: + 33 (0)2 32 96 26 37
infointl@applicom-int.com

National contact
tel: + 33 (0)2 32 96 04 20
fax: + 33 (0)2 32 96 04 21
infofr@applicom-int.com

Subsidiaries

Germany
applicom international GmbH
Im Gässle 9
70771 Leinfelden-Echterdingen
tel: + 49 711/78 23 74-0
fax: + 49 711/78 23 74-11
infode@applicom-int.com

United States
applicom international, Inc
4340 Redwood Hwy,
Suite D-309
San Rafael, CA 94903
tel: + 1 (415) 472-1595
fax: + 1 (415) 472-1596
infousa@applicom-int.com

Benelux
Euro View Services s.a.
273, Chaussée de Lodelinsart
6060 Gilly / Belgique
tel: + 32 (0) 71 42 03 43
fax: + 32 (0) 71 42 06 29
infobe@applicom-int.com

Italy
I.M.A. S.r.l.
(Italia Manutenzione Automatismi
Piazza della Vittoria, 10 int.6
I-16121 Genova
tel: + 39 010 59 30 77
fax: + 39 010 595 69 25
infoit@applicom-int.com

Web
www.applicom-int.com

Uni-Telway

open industrial communication concept

applicom international
opening up the industrial communication univers

Uni-Telway Protocol
Master & Slave modes

Uni-Telway is a protocol from **SCHNEIDER Electric** (Merlin Gerin, Modicon, Square D, Telemecanique). The physical access is based on a Serial Link transmission (half-duplex type). The electrical interface allows multi-point mode connection.

Supported services by applicom® Uni-Telway protocol

Uni-Te v2.0 messaging			
Client	**Server**	**Unsolicited Data**	
		Send[1]	Receive[2]
Yes	Yes	Yes	Yes

Compatible Groupe Schneider product range

	TSX 07 (Nano range)	**TSX 17**	**TSX 37 (Micro range)**	**TSX 57 (Premium range)**	**TSX/MPX PL7-3 47/67/87/107**	**April**
Uni-Telway[3] native connection	Yes	TSX 17 ACC5 TSX SCG 116	CPUs TSX SCY 2100 TSX SCY 2101 TSX SCP 11 x **[5]**	CPUs TSX SCY 2100 TSX SCY 2101 TSX SCP 11 x **[5]**	TSX/PMX Px7-425 TSX SCM 21 x 6	No
X-Way[4] inter-network connection	Yes	Yes	Yes	Yes	Yes	Yes

Please contact us for other supported CPU/couplers..

[1] :"TXTUTE" fuction, only available with applicom® library/DLL.
[2] : Data are stored automatically into a configured area of applicom® Data-Base.

[3] : Uni-Telway physical network connection.
[4] : X-way defines the Schneider PLCs addressing architecture for Uni-Telway, Fipway and Ethway networks (Network, Station, Gate, Unit Way). X-way addressing enables data exchange between these networks.
[5] : 256 bytes frame size capacity only with PCMCIA card couplers.

applicom® **Uni-Telway** as Master or Slave is able to :

- client and server mode simultaneously on the same channel.
- management of "unsolicited data".
- monitoring of client accesses.
- access devices on the network as well as device on the sub-networks using **X-WAY** addressing
- carry out Uni-Telway requests in **multi-flow** (several requests can be managed simultaneously).
- manage **multi-frames**. If the number of accessed variables is higher than supported by the addressee device, applicom® Uni-Telway Master will make as many frames as necessary to complete the user request.

Uni-Telway master

applicom® Uni-Telway as Master provides the bus manager function. Its main role is to manage the polling of up to 98 slaves placed on its bus. It also routes messages from slave to slave and allows general distribution of requests on the bus.

Client mode

applicom® can read and/or write major types of data in the following PLC's thanks to applicom® library/DLL, DDE server, OPC server or ActiveX control:

TSX 17

Device Data-Type ►	Internal	Timer	Counter
▼ applicom® Data-Type			
Bit	B		
Word (16-bit)	W	Ti,P Ti,V Ti,D Ti,R	Ci,P Ci,V Ci,E Ci,D Ci,F

Micro range/TSX 37, Premium range/TSX 57

Device Data Type ►	Internal	System	Constant	Input	Output	Monos-table	PL7 Timer	IEC Timer	Counter
▼ applicom® Data									
Bit	%MX	%S		%IX	%QX				
Byte	%MB								
Word (16-bit)	%MW	%SW	%KW			%MNi.P %MNi.V %MNi.R	%Ti.P %Ti.V %Ti.D %Ti.R	%TMi.P %TMi.V %TMi.Q	%Ci.P %Ci.V %Ci.E %Ci.D %Ci.F
Double word (32-bit)	%MD								
Floating point (32-bit) IEEE format	%MF								

TSX/PMX 47/67/87/107

Device Data-Type ►	Internal	Inpout	Output	Timer	Counter
▼ applicom® Data-Type					
Bit	B	I	O		
Word (16-bit)	W, CW	IW	OW	Ti,P Ti,V Ti,D Ti,R	Ci,P Ci,V Ci,E Ci,D Ci,F
Double word (32-bit)	DW				
Floating point (32-bit) IEEE format	FW				

April

Device Data-Type ►	Internal	Input	Output
▼ applicom® Data-Type			
Bit	%MX, %RX	%IX	%QX
Word (16-bit)	%MW		
Double word (32-bit)	%MD		
Floating point (32-bit) IEEE format	%FD		

Uni-Te functions supported by all ranges[1]

	Run		Device identification
	Stop		Connect
	Read error counters		Unconnect
	RAZ error counters		

[1] : only available via applicom® library/DLL.

All the other Uni-Te requests can only be generated with "TXTUTE" function of applicom® library/DLL. This function is identical to:

- Text function block used with TSX 17/47/67/87/107 PLCs.
- SEND_REQ() programming language function used with TSX 37/57 PLCs.

This allows the user to setup his or her own request.

Maximum number of variables per frame with OPC server

Type of variable ►	Read				Write[2]			
	TSX/ PMX	TSX3 7/ TSX 57[4]	TSX 17	April[4]	TSX/ PMX	TSX 37 TSX 57[4]	TSX 17	April[4]
▼ applicom® Data-Type								
Bit	496	960	1[5]	1920	496[3]	960	1	1920
Input/Output bit	16	64		1920	1	64		1920
Byte								
Word	60	120	15	120	60	120	12	120
Input/Output word	8				1			
Double word (32-bit)	30	60		60	30	60		60
Floating point (32-bit)	30	60		60	30	60		60
Timer	1	30	1		1	1	1	
Counter	1	30	1		1	1	1	
Monostable		30				1		

[2] : Maximum quantity in write is always 1 if you are using PCDDE application.

[3] : Several bits can be written in a single frame if the number is modulo 8.

[4] : frame length of 256 bytes.

[5] : Extension at 8 bits if start address modulo 8.

Server mode

applicom® shares a database for Uni-Telway Clients (such as PLCs or remote applicom® boards) called applicom® **Data-Base** (size of 32Kbits and 32Kwords) which works like virtual PLC memory to provide Telemecanique type variables (%M, %MW, etc.). applicom® Data-Base is accessible in both read and write modes.

This functionality can be used to optimize data feedback. Rather than permanently polling devices to monitor variables changing status occasionally, the devices can put the data to feed back only on change of status (alarm feedback) in the applicom® Data-Base. Consequently, in this operating mode :

- The PLC processors are used less.
- The network architecture is less heavily loaded.
- Data Feedback time is minimized.

applicom® server features reliability mechanisms with client connections :

- a maximum interval time between PLC client accesses to applicom® Data-Base (timeout) can be defined. To check the reliability of each connection with a client device your application can read (only) a status word which is located in applicom® Data-Base words area **"ACCESS STATUS WORD"**.
- Your application can read (or write to reset) a counter word which is located in applicom® Data-Base words area **"ACCESS INDICATOR WORD"** to determine the current number of writes made by the client device in the applicom® Data-Base.

There is one status word and one counter word reserved per client. You should specify these word´s addresses in the applicom® Data-Base using our configuration utility.

applicom® Data-Base memory management for Uni-Telway clients

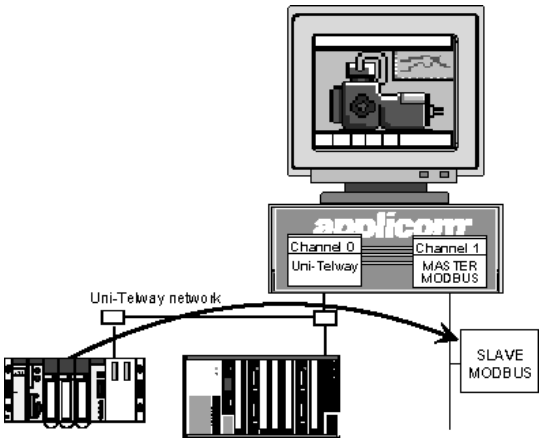
	Max. number variables/request	TSX 17	TSX 37/57	TSX 47/67/87/107	April
▼ **Description**					
Bit without forcing	1920	Bi	%MX	B	%MX
Bit with forcing	960	Bi	%MX	B	%MX
Octet	240		%MB		
Word (16-bit)	120	Wi	%MW	W	%MW
Double word (32-bit)	60		%MD	DW	%MD
Floating point (32-bit) IEEE format	60		%MF	FW	%FD

Other Uni-Te server functions supported

- Device identification.
- Mirror.
- Date and time

Router mode

The Uni-Telway master on applicom® interface offers the possibility to UNI-TE clients on its bus of accessing directly the equipment connected on another of the board by using the X-WAY addressing capabilities in the Télémécanique network layer.



By using this addressing possibility **UNI-TE** clients can access directly the equipment connected on another channel of the board used and benefit from automatic protocol conversion on the requests :

- Read/Write bits.
- Read/Write words.
- Read/Write double words.

Protocol conversion possibilities offered by the Uni-Telway master on applicom® interface :

- Fipway
- Ethway
- Uni-Telway
- JBUS/MODBUS
- 6964/3964R, RK512 messaging
- SucomA (Moeller Group)
- SYSMAC-WAY (Omron)
- Kit4000 (user protocol)

Uni-Telway slave

applicom® **Uni-Telway** as slave manages client and/or server features and has the same client/server features as in Master mode.

See the applicom® **Uni-Telway** Master page for details about client/server features.

Diagnostics tools

The applicom® solution package includes a set of tools to test your communication without developing any kind of application. Usually you are able to run these test programs along with your application, HMI, or MMI software allowing you to check your data acquisition.

Each test program returns a status word and a text comment giving feedback on the communication. It can be used to diagnose an exact cause of failure.

applicom® Uni-Telway as a server (Master or Slave) has the possibility to "route" Uni-Telway client requests to a second applicom® communication port. The read/write request are automatically converted from the Uni-Telway protocol to the appropriate protocol running on it, to access to the device's data.

Compatible applicom® boards

ISA Bus	PCI Bus	PC/104 Bus
PC1000	PCI1000	
PC2000	PCI2000ETH	
PC2000ETH	PCI2000FIP	
PC2000FIP	PCI2000MBP	
PC4000	PCI2000PFB	
	PCI4000	