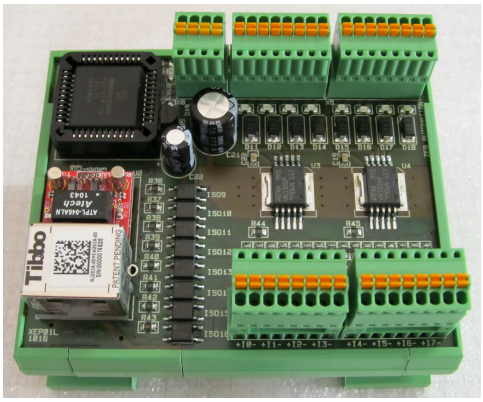
RS232-Interface and MultiFunctionRelay Module XEP01L



The interface module offers a simple method to connect and control up to eight digital inputs and outputs through an Ethernet-Port. Since inputs and outputs are separated from the remaining circuitry by optical couplers, signals of industrial controls can be easily connected to a PC or a terminal or other devices with Ethernet-Ports. The digital inputs and outputs are designed for 24VDC. Logic and decoupled outputs may be separately powered. The component is easy-to-mount on common used mounting rails. The electrical connection of digital inputs and outputs is made by pluggable cage clamp terminals.

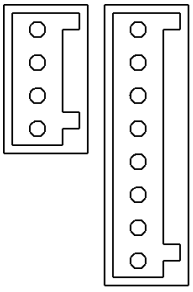
Technical Data	
Digital Inputs (8) I0 .. I7 Voltage Current Trigger Level	Optical couplers 0 .. 30VDC per input channel 4mA @ 24VDC approx. 4VDC
Digital Outputs (8) O0 .. O7 Voltage Current	Solid-State-Switch, high side switching 12 .. 30VDC (see Supply Voltage - 'Load') per output channel max. 600mA (Resistive Load)
Supply - Logic (Ub) Voltage Current Power Consumption	Rated Voltage 24VDC 8 .. 30VDC 12mA @ 24VDC 280mW @ 24VDC
Supply - Load (Us) Voltage Current	Rated Voltage 24VDC 12 .. 30VDC Sum (I_{O0} .. I_{O7}) + 4mA @ 24VDC
Status Indicators Inputs (8) Outputs (8) Supply (1) Heart-Beat (1) Command (1)	 LED indicates an input voltage >2V LED, connected to the load terminals, indicates the 'ON' state LED indicates presence of supply voltage (Logic) LED flashes (Normal: 1Hz, Programming: 2.5Hz, Remote: 0.5Hz) LED flashes at receipt of a known command
Module Identification	Besides the possibility, to assign an individual name, each module contains a unique, unalterable, 12-digit serial number in hexadecimal notation.
Dimensions	90mm(L) x 77mm(B) x 40mm(H) Outer packaging: 115mm(L) x 85mm(B) x 50mm(H)
Fixing	Click-on mounting rails TS15 / TS35 / G32
Mounting Position	Any desired
Weight	0,175kg
Protecting Type	IP00
Ambient Conditions	-5 ° C. .. +65 ° C under normal installation conditions (cabinet). In constricted spaces a sufficient ventilation (forced air flow) or any other cooling method is necessary. In outdoor activities the module should be protected with a suitable housing, furthermore with protection against direct sunlight, frost and condensation.
RoHS - Conformity	The relevant directives will be observed. However, no own analysis will carried out. We trust the related statements of suppliers.

Technical Data

Certifications	CE in preparation
Ethernet-Converter Protocols	Tibbo EM203+RJ203 **HTTP** (Port 80), **TCP** (Port 65200), **UDP** (Port 65100)
Communikation Parameters (Factory default settings) DHCP IP-Address Netmask Gateway TargetI-IP (only for RTU-Mode)	Ipv4, values may be changed by programming software. Active (thus, the following values are not effective!) 192.168.0.1 255.255.255.0 192.168.0.1 192.168.0.2
Technology	Microcontroller and discrete components placed on double-layer PCB. By means of an integrated bootloader, the existing firmware can be updated at any time via the communication interface.
Connectors Supply Inputs/Outputs Ethernet	Pluggable Connectors Pin Header 4pol MCV 0,5/ 4-G-2,5 Pin Header 8pol MCV 0,5/ 8-G-2,5 RJ45, 10/100 BaseT, CAT5
Delivery Contents	MFR-Module (configured as I/O-Interface for 8 Channels) 4 Connector 8pol (FK-MC 0,5/8-ST-2,5) 1 Connector 4pol (FK-MC 0,5/4-ST-2,5) CD 'MFR Tools' Operating Instructions
Customs Tariff Number (TARIC)	85364110
Country of Origin	Germany

Safety Notes
This product is not fail-safe and should not be used in life-supporting systems and other applications which are critical for safety, without a new risk assessment and evaluation of the conformity!
If the module is intended to be installed into a machine or a system, for which the EC machinery directive 98/37 or its amendment is valid, it is necessary to make sure that the product, after its application , complies with all relevant regulations.

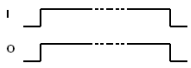
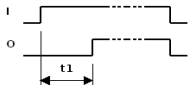
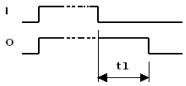
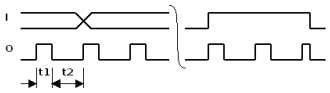
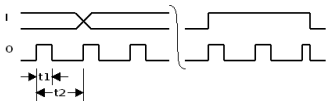
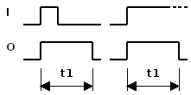
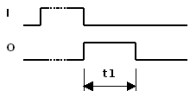
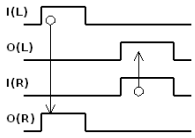
Pin Assignment

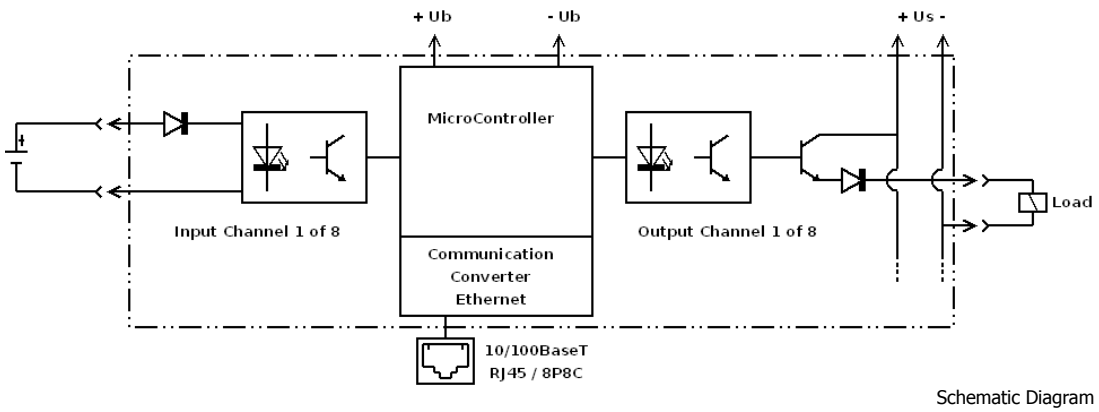
MCV .. 4 / 8	X6		X4		X5		X2		X3	
	+	Logic Ub	+	Output O0	+	Output O4	-	Input I3	-	Input I7
	-		-		-		+		+	
	+	Load Us	+	Output O1	+	Output O5	-	Input I2	-	Input I6
	-		-		-		+		+	
			+	Output O2	+	Output O6	-	Input I1	-	Input I5
			-		-		+		+	
			+	Output O3	+	Output O7	-	Input I0	-	Input I4
			-		-		+		+	

RJ45 / 8P8C	U2			
	1	TX+	5	No Connection
	2	TX-	6	RX-
	3	RX+	7	No Connection
	4	No Connection	8	No Connection
	Shield	Ground		

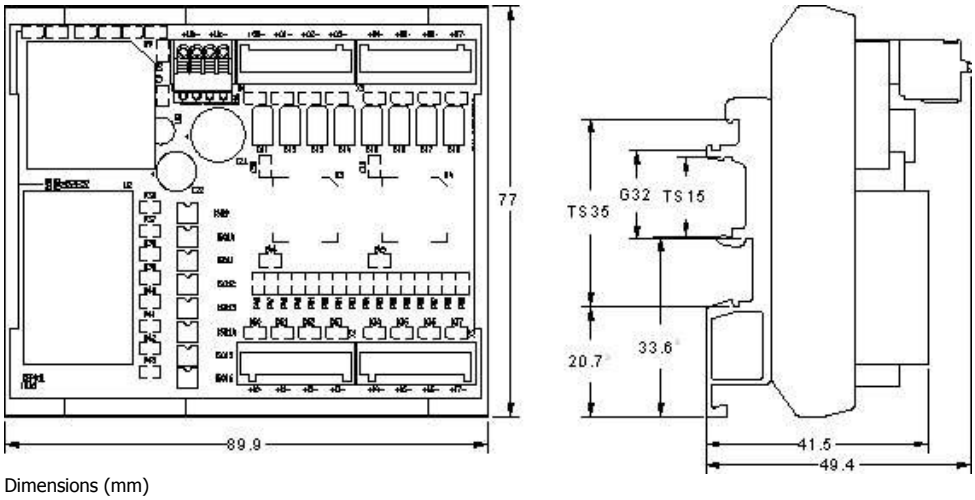
Functions

The following functions pertain to each one channel, ie each of the existing eight channels can perform a different function. The functions can be combined. In any case, all input and output signals will transferred to the master control unit via the communication interface, regardless if they will received and evaluated. The module can be used as a pure interface for processing of inputs and outputs, or operated as stand-alone multi-functional and multi-channel relay or in combination..
The times are derived by a divider from a 8-MHz crystal. The accuracy should be sufficient for most technical processes

Functions	
I/O – Interface (Factory default settings)	Inputs I0 .. I7 are read and Outputs O0 .. O7 are controlled by an external unit via the existing communication port. All timing functions are suspended.
Direct	 The output directly follows the input. All timing functions are suspended.
On-Delay	 Applying a voltage to the input, the output will be active after the configured delay **t1.** With removing the input voltage the output will be immediately inactive.
Off-Delay	 Applying a voltage to the input, the output will be active immediately. With removing the input voltage, the output will be inactive after the configured delay **t1**. The delay is only guaranteed if during this time, the supply voltage of the module is maintained.
Clock Pulse / Pause	 The output acts as clock generator. Either free-running or controlled via a corresponding input. The duration of pulse **t1** and pause **t2** is configurable.
Clock Pulse / Cycle	 The output acts as clock generator. Either free-running or controlled via a corresponding input. The duration of pulse **t1** and cycle **t2** is configurable.
Switching-On Wipe Pulse	 On applying a voltage to the input, the output generates a single pulse of configurable duration **t1**, independent from the duration of the input signal.
Switching-Off Wipe Pulse	 On removing the voltage from an input, the output generates a single pulse of configurable duration **t1**. The pulse duration is only guaranteed if during this time, the supply voltage of the module is maintained.
Remote Terminal Unit (RTU)	 The output follows the appropriate input of the remote device. The input of this channel is transferred to the appropriate output of the remote device. For this mode, two modules have to be prepared with matching IP-addresses. So the modules can find the counterpart within the network.
Selection of Functions and Timing Values	By means of the supplied setup program (Windows), the functions and timing values can be changed.
Timer / Time Ranges Milliseconds Seconds Minutes Hours	Derived from 8-MHz-Quartz, I/O-Cycle 100ms 100 .. 2000 milliseconds in steps of 100 milliseconds 1 .. 120 seconds in steps of 1 second 1 .. 120 minutes in steps of 1 minute 1 .. 100 hours in steps of 1 hour



Schematic Diagram



Dimensions (mm)

ZEB Automation Limited
Wakefield, West Yorkshire, GB
Branch Office Germany
Obentrautstr. 35, D-10963 Berlin
Fon +49 30 6212667 * Fax +49 30 25294347 * eMail info@zeb-automation.com

Issue 11/2011 (xep01l_td_en)