

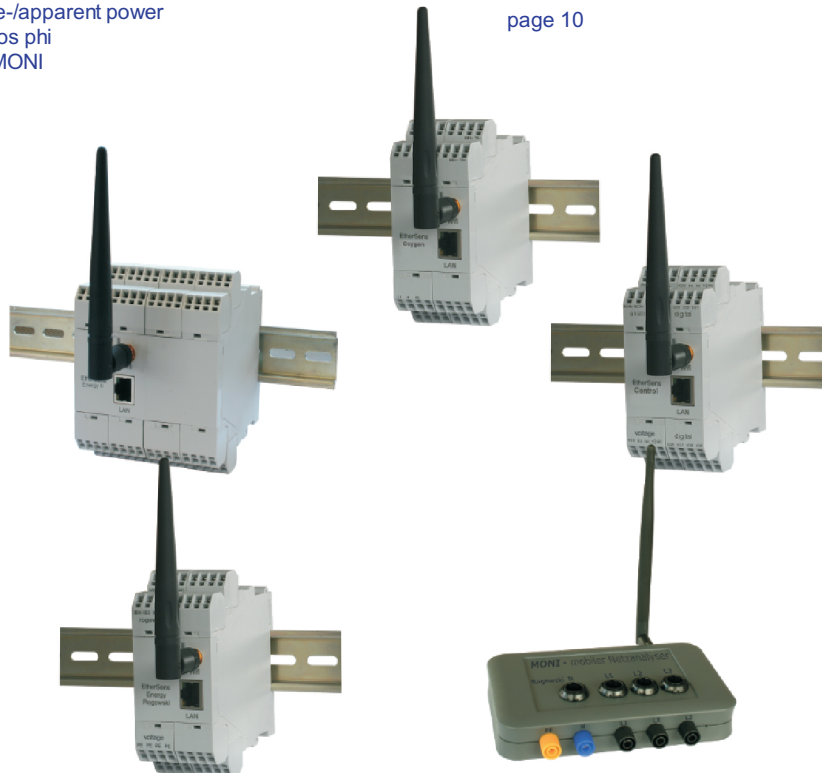
EtherSens

Networked via LAN - WIFI - LTE
Worldwide access from any device possible
Internal and external data-storage
Simple rail-mounting

Energy-analysis

- Power consumption
- Current up to 1000A
- Voltage up to 500VAC
- Active-/reactive-/apparent power
- Power factor $\cos \phi$
- Otherwise as MONI

page 5



page 10

Fault-transmitter

- I/O, PLC, web-server controlled
- Email & SMS messages
- Optical / acoustic messenger external connectable (horn, luminaire etc.)
- Acknowledgment possible

page 15

Mobile netanalyser

- Load-studies
- energy-audits
- power- and energy-logging
- simplified load-studies
- Power consumption
- Current up to 1000A
- Voltage up to 500VAC
- Active-/reactive-/apparent power
- Power factor $\cos \phi$
- Supply:
 - 100-240V 50-60Hz (from L1) / 24VDC (over detachable connector) / USB (from PC/power-pack)
- Operation/Configuration WEB-browser over LAN / WLAN
- WLAN operating modes: access point (makes its own network) and client (connects to existing networks)
- Data storage microSD / FTP-server

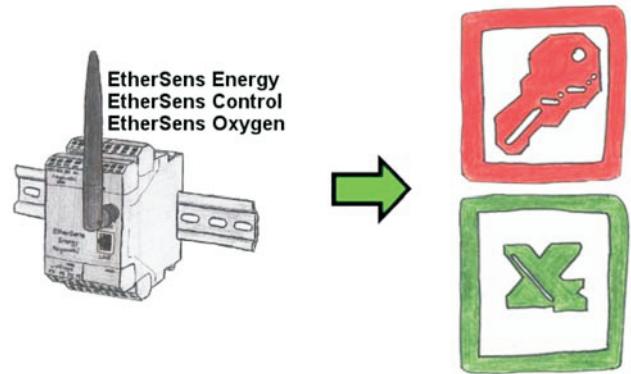
page 19

Operation via web-browser



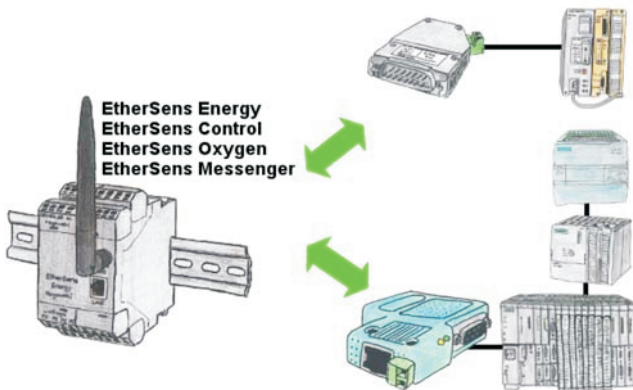
To parameterize the EtherSens-device you don't need a special PC or laptop with special software. Just open with your internet-browser the web-page of the device.

Logged data to Excel



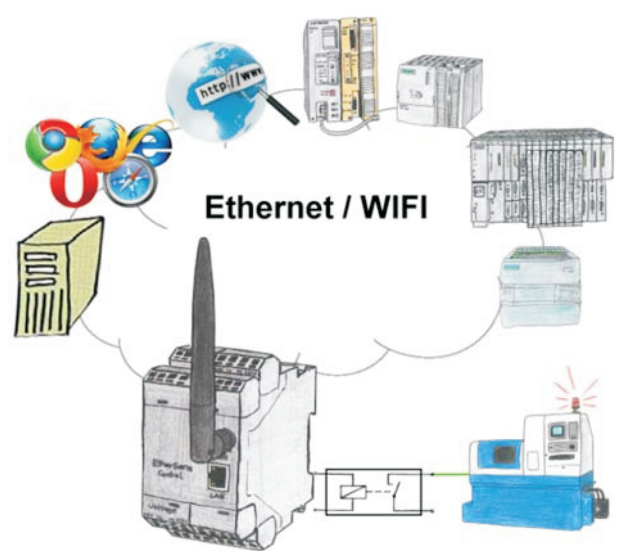
Capture the required values, whether if energy-data, states of inputs or outputs, process values such as oxygen-content in the environment,... and write this with a timestamp in a CSV-file. This file can then be read and processed with Excel.

PLC coupling S5 and S7



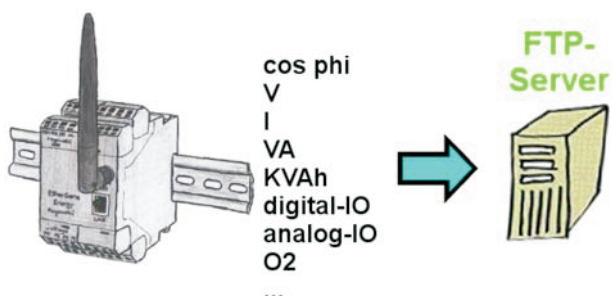
Do you need the recorded data in a PLC for further processing? With the RFC1006-option of EtherSens-devices you can write the logged data in a DB of a specified PLC and also read. Even flag-words can be read. Has your PLC no ethernet-port, then you can communicate via the S7-LAN-module over MPI/Profibus. Even the S5-PLC is via S5-LAN++-module accessible.

Relaycontacts 230VAC/16A directly over WIFI/LAN



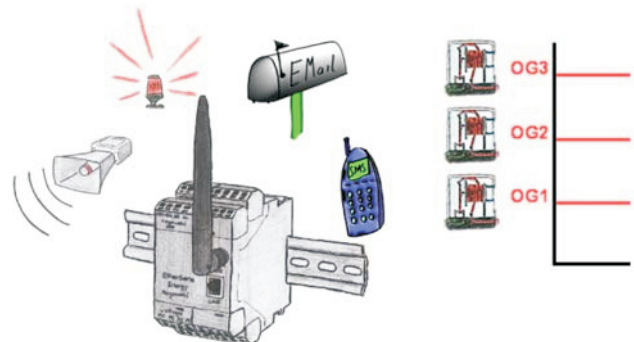
Switch with the EtherSens Control with relay-output easily and directly over LAN or WIFI up to 230VAC/16A, switchable over web-browser, TCP/IP-protocol or PLC-controlled. At the same time you monitor the switching-states on the optional SD-card or on the FTP server.

Logged data to FTP-server



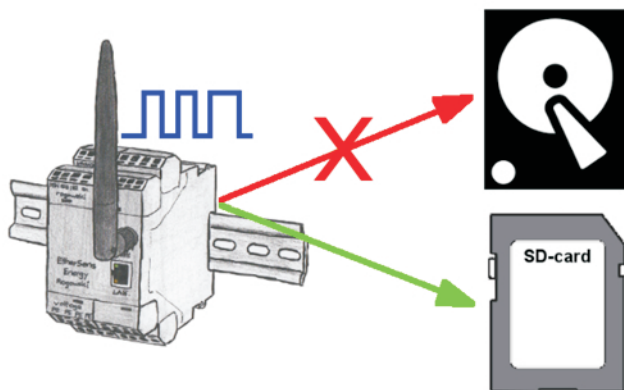
Do you need the logged data not locally but on your site? Then just turn on recording on an FTP-server and the data is stored. You can then immediately read and process this data.

Alarming



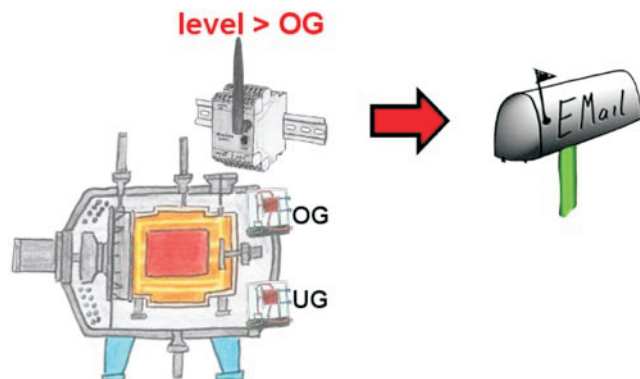
Don't log with EtherSens-device only the process-values, also monitor them simultaneously. Once a predetermined threshold is exceeded/not reached, the EtherSens-device indicates this.

Standalone recording



With the integrated SD-card-slot you back-up the recorded data in the device and don't need an external memory. Nevertheless you can send additional the data via FTP to a FTP-server.

E-Mail notification



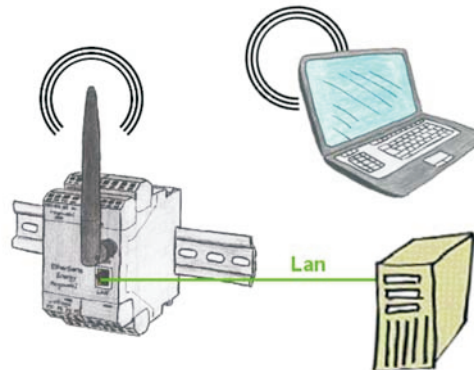
Do you monitor processes and upon reaching a predetermined upper/lower limit, you need a message? Then activate in the device the limit-value-monitoring and you get this message. Furthermore, the device also sends its state and you are always up to date.

Worldwide access



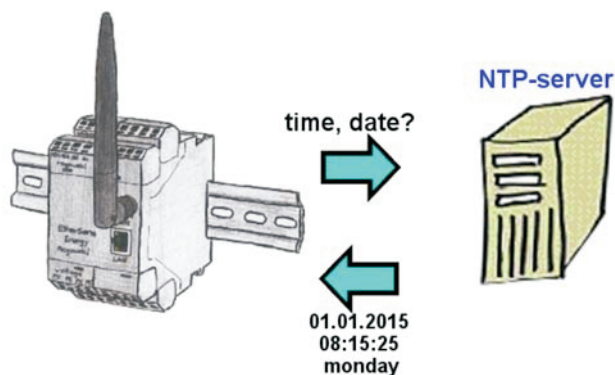
No matter where you are, access to the EtherSens-device and its web-interface is available from everywhere.

Parallel access LAN/WiFi



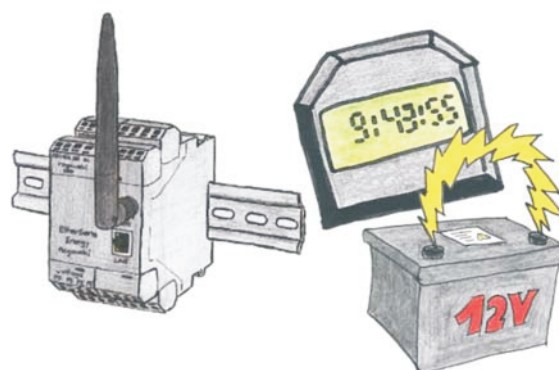
Access parallel via LAN and Wifi to the EtherSens-device. Therefore create via the web-server for each way an ip-address, regardless whether its the same subnet or not.

Standardised time



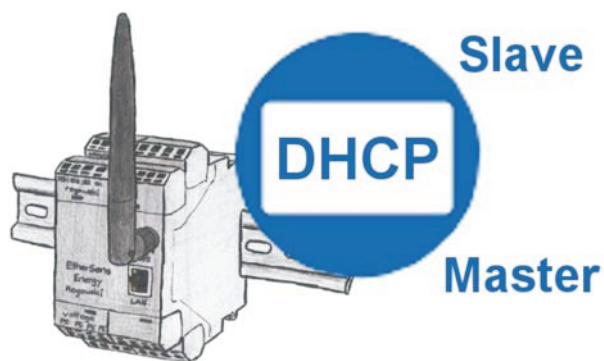
Should all EtherSens devices record time-synchronized in your equipment? By coupling with an NTP-time-server, all devices pick up the current time and adjust this.

Battery buffered time



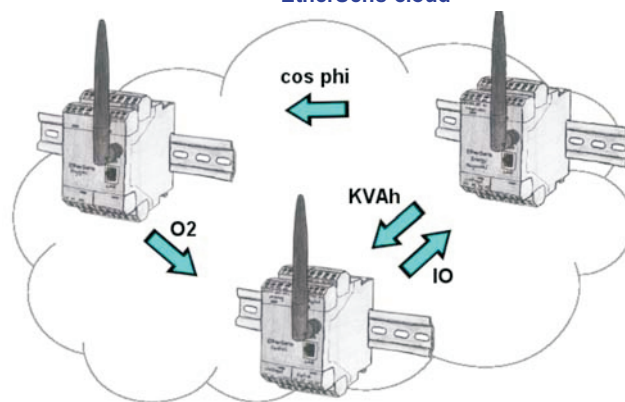
You always need a current time, but do not always have a time-server on site. With the integrated battery-backed RTC you always have the current time in the unit. Even if the power fails, the time in the unit continues to operate, so that when the voltage returns, the time continues to run correctly.

DHCP-server/client



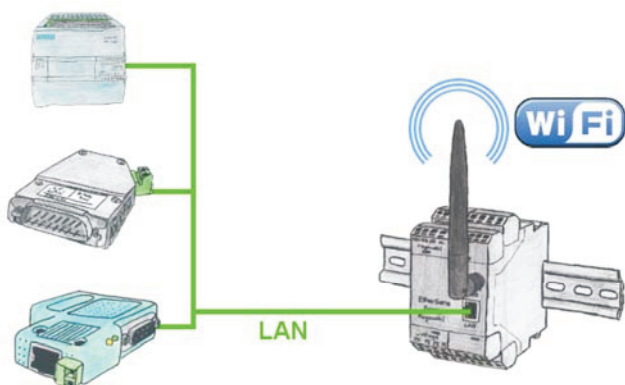
You need a DHCP server on your network. Activate this functionality in your EtherSens-device and you have immediately a server in the network. Consistently, the EtherSens-device also can act as DHCP-slave.

EtherSens-cloud



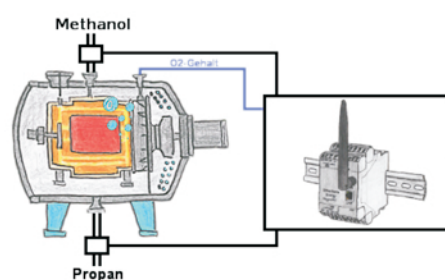
By the EtherSens-cloud each EtherSens-device can exchange data, transfer data and forward to other devices. As if you use one device that records all necessary parameters centrally.

LAN-subscriber to the WiFi



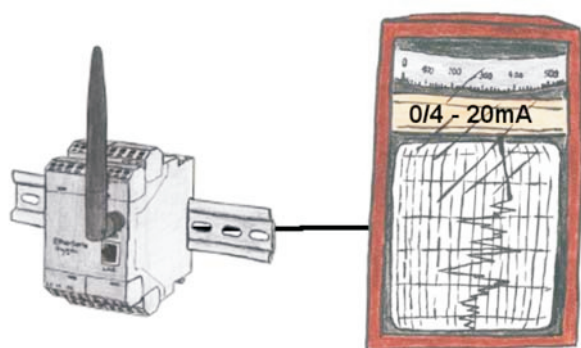
You also need to network devices but don't have locally no ethernet-cable. Wifi is available? With the EtherSens-Bridge you bring immediately all connected wired participants in the WLAN network.

Take over control-tasks



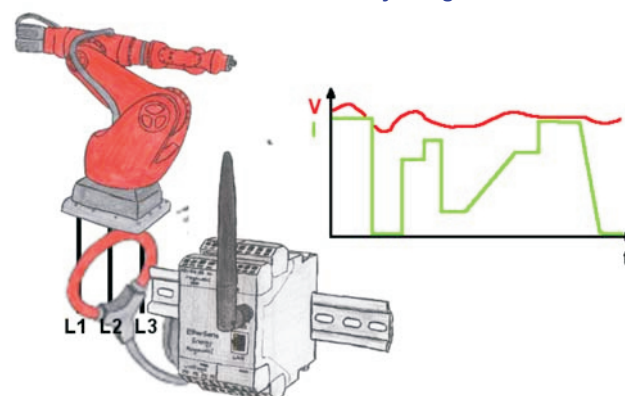
Capture with the Ethersens-device not only your process-values, you would be able to do control-tasks with the device.

Data acquisition/logging



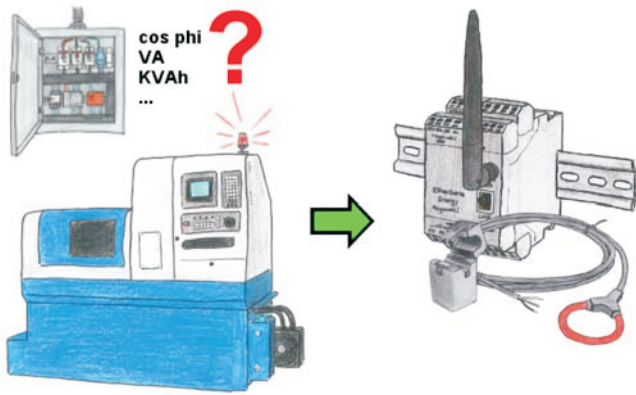
By connecting a line-recorder to the EtherSens-device anyone without network-knowledge can visually capture and further process the log.

Detect unnecessary idling



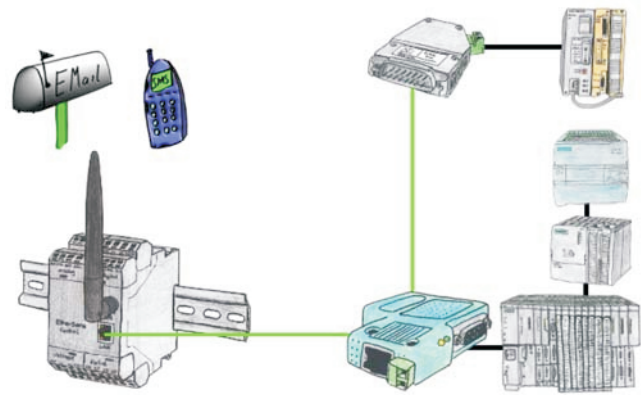
Detect the efficiency of your plant by EtherSens devices. Log the preset parameters and evaluate them then later. Find so unnecessary idle-times.

Energy-data acquisition



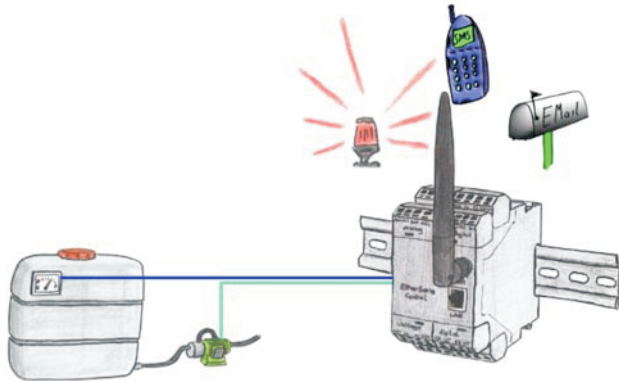
Do you also need the energy-consumption of your plant or need to determine the cos phi? With the EtherSens Energy you can capture and record by using a Rogowski-coil or folding-core the required values.

Message dispatch from the PLC



Send directly from your PLC news, statuses, alarms as SMS or email.

Detecting and controlling



Control with the EtherSens-devices your systems and determine the switching-points at which the device must react. Either it performs an action or inform you via email or SMS.

products

EtherSens Energy

Capture and monitor energy-data

- Determining energy-efficiency
- Energy-analysis (EN 50470-1 EN 50470-3)
- L1, L2, L3 and N realtime analysis
- up to 8000 measurements / second
- frequency Hz / cos phi / power-factor
- energy-measurement kW/h
- Data-transfer via TCP/IP in a DB in S7-PLC
- For Rogowski-spool
- For folding cores

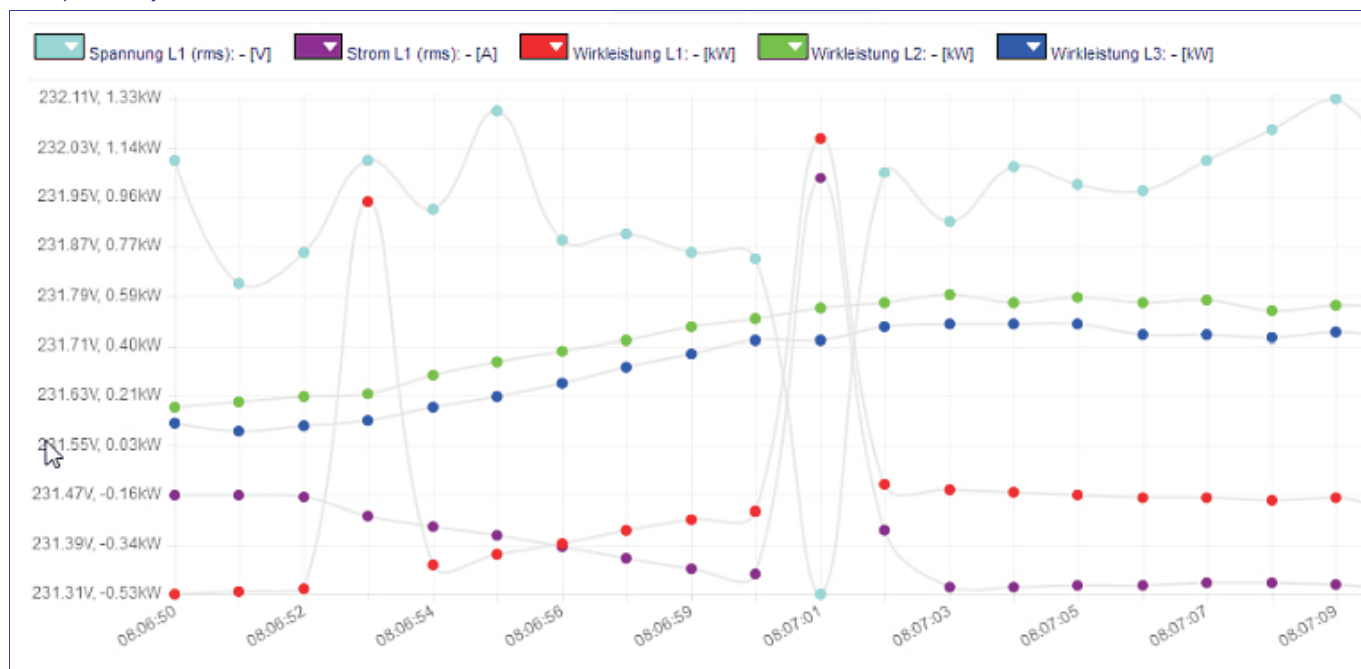
Example instruments-mask:

Topologie: Verteilerrahmen	L1	L2	L3	N
U	231.91 V	232.29 V	233.28 V	
I	7.47 A	14.25 A	6.91 A	3.41 A
f	50.00 Hz			



Topologie: Verteilerrahmen	L1	L2	L3	
P	1.68 kW	1.09 kW	-0.08 kW	2.69 kW
Q	1.51 kVAR	2.52 kVAR	1.50 kVAR	5.53 kVAR
S	2.30 kVA	3.21 kVA	1.67 kVA	7.18 kVA
PF	0.76 cos	0.48 cos	0.37 cos	

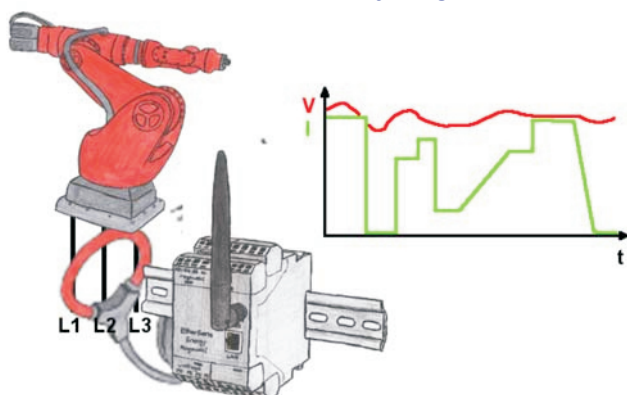
Example History:



Supply voltage:	100 - 240V 50-60Hz
Power consumption:	6 watt
Display:	WEB-Browser 1 status LED bicolor
Handling/Configuration:	WEB-Browser
Interfaces:	4 x voltage-input (L1, L2, L3, N) EtherSens Energy-II : 8x 4 x distributor-terminal EtherSens Energy-II : 8x 4 x sensor-input (L+K- / B+W-terminal ever phase + N) EtherSens Energy-II : 8x Slot for microSD Antenna-connector GSM/FME(m) (2.4 GHz IEEE 802.11b/g) 10/100BaseTX RJ45-ethernet-plug Button for factory settings
Operating temperature:	5 - 55°C
Case:	ABS-plastic case V0
Dimensions:	100 x 112 x 45 mm EtherSens Energy-II : 100 x 112 x 90 mm
Scope of delivery:	EtherSens Energy WIFI-stub-antenna
Commercial data:	
EAN number:	4260363244299
Weight:	0.3000 kg

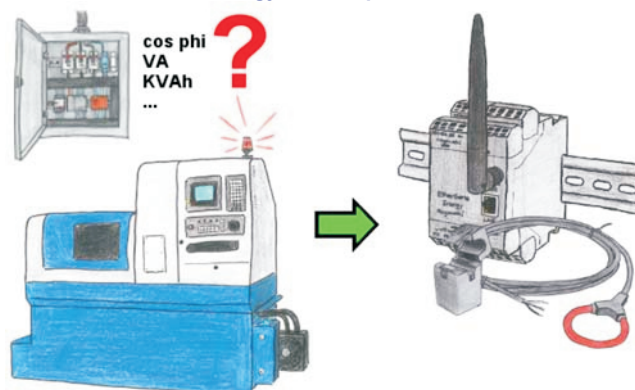
Applications

Detect unnecessary idling



Detect the efficiency of your plant by EtherSens devices. Log the preset parameters and evaluate them then later. Find so unnecessary idle-times.

Energy-data acquisition



Do you also need the energy-consumption of your plant or need to determine the cos phi? With the EtherSens Energy you can capture and record by using a Rogowski-coil or folding-core the required values.

devices:		
Art. ID.	name	price
9202	EtherSens Energy for folding-cores Energy-analysis (EN 50470-1 EN 50470-3) L1, L2, L3, N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Parallel LAN and WIFI-interface For folding-cores with 1A secondary-current	689,- €
9202-OW	EtherSens Energy for folding-cores only with LAN Energy-analysis (EN 50470-1 EN 50470-3) L1, L2, L3, N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Only LAN-interface For folding-cores with 1A secondary-current	639,- €
9203	EtherSens Energy for Rogowski-coils Energy-analysis (EN 50470-1 EN 50470-3) L1, L2, L3, N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Parallel LAN and WIFI-interface For Rogowski-coils up to 0,5V	689,- €
9203-II	EtherSens Energy-II for Rogowski-coils Energy-analysis (EN 50470-1 EN 50470-3) 2x L1, 2x L2, 2x L3, 2x N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Parallel LAN and WIFI-interface For Rogowski-coils up to 0,5V	899,- €
9203-II-OW	EtherSens Energy-II for Rogowski-coils only with LAN Energy-analysis (EN 50470-1 EN 50470-3) 2x L1, 2x L2, 2x L3, 2x N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Only LAN-interface For Rogowski-coils up to 0,5V	849,- €
9203-OW	EtherSens Energy for Rogowski-coils only with LAN Energy-analysis (EN 50470-1 EN 50470-3) L1, L2, L3, N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh Only LAN-interface For Rogowski-coils up to 0,5V	639,- €

sensors:		
Art. ID.	name	price
9220-10	Folding-core current-sensor 100/1A Cable hole: 17x17mm Opening / closing with a handle Output Terminals Output overvoltage protection	47,- €
9220-11	Folding-core current-sensor 60/1A Cable hole: 17x17mm Opening / closing with a handle Output Terminals Output overvoltage protection	47,- €
9220-20	Rogowski-coil 500A, 55mm Cable hole: 55mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	91,- €
9220-21	Rogowski-coil 500A, 35mm Cable hole: 35mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	91,- €

sensors:		
Art. ID.	name	price
9220-23	Rogowski-coil 500A, 470mm Cable hole: 470mm Cable length: 2,5m Shutter: screw cap Easy and fast installation with no interruptible power-lines	79,- €
9220-24	Rogowski-coil 500A, 80mm Cable hole: 80mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	122,- €
9220-25-D	Rogowski-coil 500A, 35mm, twist-lock Cable hole: 35mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	54,- €
9220-26-D	Rogowski-coil 500A, 80mm, twist-lock Cable hole: 80mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	59,- €
9220-27-D	Rogowski-coil 500A, 160mm, twist-lock Cable hole: 160mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	64,- €
9220-SONNE	Sun-light-sensor for EtherSens max. 220k Lux (switchable ranges) 5V DC supply (from I2C-interfaceport) I2C-connection 1m	99,- €
9220-U-I-BOX	U-I-box for EtherSens max. 1000V DC / 40A 24V DC supply 20cm power-cable 4mm2 with Amphenol-plug I2C-connection 1m	149,- €

extensions:		
Art. ID.	name	price
9230-AIO	Extension Analog-IO V1.0 Extension-board for EtherSens-devices 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V)	120,- €
9230-AIO-V1.1	Extension Analog-IO V1.1 Extension-board for EtherSens-devices 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V)	140,- €
9230-DIO	Extension Digital-IO Extension-board for EtherSens-devices 12 x digital IN or OUT 24VDC 400mA free config with software	180,- €
9230-EI2C-3.3V	Extension with ext. galv. separated I2C 3.3V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 3.3V	110,- €
9230-EI2C-5V	Extension with ext. galv. separated I2C 5V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 5V	110,- €
9230-GG	Bigger Case Width 90mm instead of 45mm	100,- €
9230-LTE	Extension LTE-modem LTE-modem-board for EtherSens-devices Send/receive of SMS-messages Communication from/into internet	249,- €
9230-MIO-232	Extension RS232-IO Extensionboard for EtherSens-devices V1.0 for RS232 (RxD, TxD)	149,- €

extensions:		
Art. ID.	name	price
9230-MIO-422	Extension RS422-IO Extensionboard for EtherSens-devices V1.0 for RS422 (4-wire)	149,- €
9230-MIO-485	Extension RS485-IO Extensionboard for EtherSens-devices V1.0 for RS485	149,- €
9230-MIO-TTY	Extension TTY-IO Extensionboard for EtherSens-devices V1.0 for TTY (incl. 2x current-sources)	149,- €
9230-RIO-230V	Extension 230V Relay-IO Extension-board for EtherSens-devices Supply voltage: 230V AC 4 x relay-OUT 230VAC/16A	214,- €

accessories:		
Art. ID.	name	price
9230-ANT-WAND	Stationary Wifi-antenna for wall fastening for EtherSens-devices, cable length: 5m incl. bracket	49,- €
9230-LTE-ANTW	Stationary LTE-antenna for fixed mounting for EtherSens-devices LTE-modem cable length: 2m	153,- €
9230-SD-32	Micro-SD-card 32GB for EtherSens-devices SDHC class 10	24,- €
9240-SDÜ	Option Safe S7-PLC-data-transmission Function extension for recognition of save data-transmission by toggle bit or counters in the S7-PLC. In case of a failure, a default configuration is mapped to the outputs.	99,- €
9352-WLAN-ANT	Magnetic base antenna for S7-WLAN-Bridge, WLAN-Klemme, EtherSens cable length: 3m	78,- €
9636-CROSS	Cross-cable 3m Cat5+, shielded RJ45 plug <=> RJ45 plug, twisted pinning	10,- €
9636-TCPIP	Patch-cable 3m, Cat5+, shielded RJ45 plug <=> RJ45 plug, 1:1	10,- €
9636-TCPIP02M	Patch-cable 0.25m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €
9636-TCPIP1M	Patch-cable 1m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €

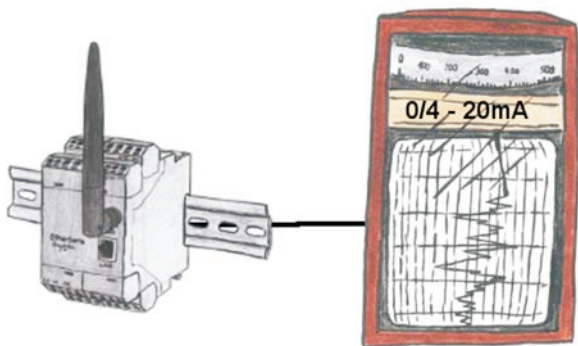


Monitor and protocol of digital and analog Input/Outputs

- Logical evaluation (small control tasks) in the device
- Data-transfer via TCP/IP in a DB in S7-PLC

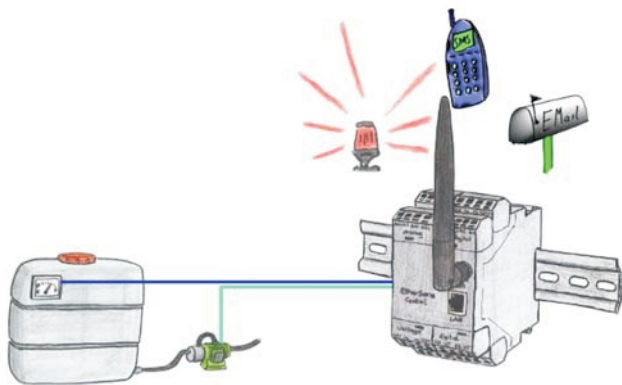
Supply voltage:	24V +/- 20%
Power consumption:	3 watt (without possibly switched outputs)
Display:	WEB-Browser 1 status LED bicolor
Handling/Configuration:	WEB-Browser
Interfaces:	12 x digital-IO switchable as - Input (24VDC max. 8k2 (PullUp external) / min. 1.6mA) or - Output (24VDC 400mA) 4 x Analogue Input V1.0 (0-5V) - opt. with ext.Shunt 0/4-20mA - opt. with ext. resistance 0-10/24/50V 4 x Analogue Input V1.1 (switchable between U, I, differential) - Free configurable voltage-inputs with full 15-bit resolution: 0-50V, 0-40V, 0-20V, 0-10V, 0-5V, 0-4V, 0-2V, 0-1V, 0-0,5V, 0-0,25V - Free configurable differential voltage-inputs with full 15-bit resolution AI1 <-> AI2 and AI3 <-> AI4: +/-50V, +/-40V, +/-10V, +/-5V, +/-4V, +/-2V, +/-1V, +/-0,5V, +/-0,25V - Free configurable current-inputs with full 15-bit resolution: 0-20mA, 4-20mA - sample-rate of AD-converter can be selected: - fast = fast conversion / short precision - balanced = middle conversion / middle precision - exact = slow conversion / high precision - Measuring ranges after changing are calibrated to: - offset for 0V / 0mA - slope of voltage / current (ideal for end of measuring-range / full-scale) - Relative values can be configured to the original voltage- / current-values. For e.g.: On the voltage-input 10V were measured 5V, relative minimum = 0 kg, relative maximum = 100 kg, so the displayed-value is 50 kg Is minimum and maximum configured as 0 the measured voltage- / current-value will be displayed. 4 x analogue Output 0/4-20mA (source-power 24V) Slot for microSD Antenna-connector GSM/FME(m) (2.4 GHz IEEE 802.11b/g) 10/100BaseTX RJ45-ethernet-plug Button for factory settings
Operating temperature:	5 - 55°C
Case:	ABS-plastic case V0
Dimensions:	100 x 112 x 45 mm
Scope of delivery:	EtherSens Control WIFI-stub-antenna
Commercial data:	
EAN number:	4260363244336
HS-code:	85423190
Weight:	0.2000 kg

Data acquisition/logging



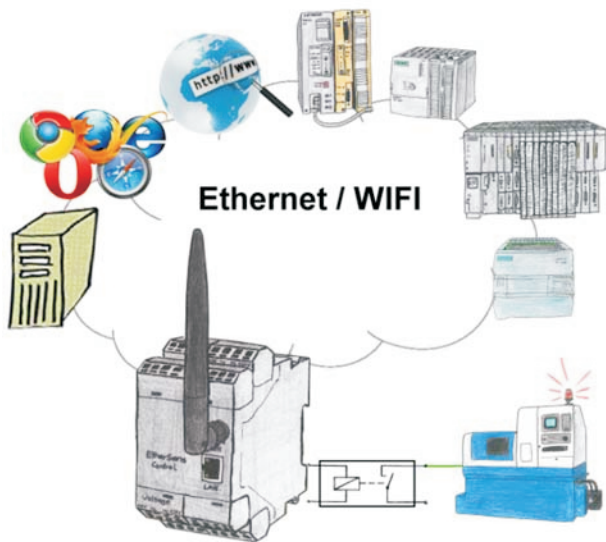
By connecting a line-recorder to the EtherSens-device anyone without network-knowledge can visually capture and further process the log.

Detecting and controlling



Control with the EtherSens-devices your systems and determine the switching-points at which the device must react. Either it performs an action or inform you via email or SMS.

Relaycontacts 230VAC/16A directly over WIFI/LAN



Switch with the EtherSens Control with relay-output easily and directly over LAN or WIFI up to 230VAC/16A, switchable over web-browser, TCP/IP-protocol or PLC-controlled. At the same time you monitor the switching-states on the optional SD-card or on the FTP server.

devices:		
Art. ID.	name	price
9200-A-24V	EtherSens Control 24V Analog-IO V1.0 Supply voltage: 24V DC 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	310,- €
9200-A-24V-V1.1	EtherSens Control 24V Analog-IO V1.1 Supply voltage: 24V DC 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	330,- €

devices:		
Art. ID.	name	price
9200-AA-24V	EtherSens Control 24V 2x Analog-IO V1.0 Supply voltage: 24V DC 8 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 8 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	380,- €
9200-AA-24V-V1.1	EtherSens Control 24V 2xAnalog-IO V1.1 Supply voltage: 24V DC 8 x Analogue Input (switchable between U, I, differential) 8 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	420,- €
9200-AD-24V	EtherSens Control 24V Analog-/Digital-IO V1.0 Supply voltage: 24V DC 12 x digital IN or OUT 24VDC 400mA free config with software 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	410,- €
9200-AD-24V-OW	EtherSens Control 24V Analog-/Digital-IO V1.0 o. LAN Supply voltage: 24V DC 12 x digital IN or OUT 24VDC 400mA free config with software 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V) Only LAN-interface	360,- €
9200-AD-24V-V1.1	EtherSens Control 24V Analog-/Digital-IO V1.1 Supply voltage: 24V DC 12 x digital IN or OUT 24VDC 400mA free config with software 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V) LAN and WIFI-interface integrated function to the same time	430,- €
9200-AR-24V	EtherSens Control 24V Analog-/Relay-IO Supply voltage: 24V DC 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V) 4 x Relay-OUT 230VAC/16A LAN and WIFI-interface integrated function to the same time	430,- €
9200-AR-24V-V1.1	EtherSens Control 24V Analog-/Relay-IO V1.1 Supply voltage: 24V DC 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V) 4 x Relay-OUT 230VAC/16A LAN and WIFI-interface integrated function to the same time	450,- €
9200-D-24V	EtherSens Control 24V Digital-IO Supply voltage: 24V DC 12 x digital IN or OUT 24VDC 400mA free config with software LAN and WIFI-interface integrated function to the same time	336,- €

devices:		
Art. ID.	name	price
9200-DD-24V	EtherSens Control 24V 2x Digital-IO Supply voltage: 24V DC 24 x digital IN or OUT 24VDC 400mA free config with software LAN and WIFI-interface integrated function to the same time	432,- €
9200-DR-24V	EtherSens Control 24V Digital-/Relay-IO Supply voltage: 24V DC 12 x digital IN or OUT 24VDC 400mA free config with software 4 x Relay-OUT 230VAC/16A LAN and WIFI-interface integrated function to the same time	456,- €
9200-R-230V	EtherSens Control 230V Relay-IO Supply voltage: 230V AC 4 x Relay-OUT 230VAC/16A LAN and WIFI-interface integrated function to the same time	399,- €
9200-R-24V	EtherSens Control 24V Relay-IO Supply voltage: 24V DC 4 x Relay-OUT 230VAC/16A LAN and WIFI-interface integrated function to the same time	359,- €

extensions:		
Art. ID.	name	price
9230-AIO	Extension Analog-IO V1.0 Extension-board for EtherSens-devices 4 x analog IN 0-5V opt. with ext. Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V)	120,- €
9230-AIO-V1.1	Extension Analog-IO V1.1 Extension-board for EtherSens-devices 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V)	140,- €
9230-DIO	Extension Digital-IO Extension-board for EtherSens-devices 12 x digital IN or OUT 24VDC 400mA free config with software	180,- €
9230-EI2C-3.3V	Extension with ext. galv. separated I2C 3.3V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 3.3V	110,- €
9230-EI2C-5V	Extension with ext. galv. separated I2C 5V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 5V	110,- €
9230-ENERGY	Extension Energy-IO Extension-board for EtherSens-devices Energy-analysis (EN 50470-1 EN 50470-3) L1, L2, L3, N realtime analysis Up to 8000 measurements / second Hz / cos phi / power-factor Energy consumption kWh For Rogowski-coils up to 0,5V	332,- €
9230-GG	Bigger Case Width 90mm instead of 45mm	100,- €
9230-LTE	Extension LTE-modem LTE-modem-board for EtherSens-devices Send/receive of SMS-messages Communication from/into internet	249,- €
9230-MIO-232	Extension RS232-IO Extensionboard for EtherSens-devices V1.0 for RS232 (Rx/D, Tx/D)	149,- €
9230-MIO-422	Extension RS422-IO Extensionboard for EtherSens-devices V1.0 for RS422 (4-wire)	149,- €

extensions:		
Art. ID.	name	price
9230-MIO-485	Extension RS485-IO Extensionboard for EtherSens-devices V1.0 for RS485	149,- €
9230-MIO-TTY	Extension TTY-IO Extensionboard for EtherSens-devices V1.0 for TTY (incl. 2x current-sources)	149,- €
9230-NT-230V	Power-supply-rack-unit 230V Input voltage: 100 - 240VAC 50-60Hz Output voltage: 24V DC Power: 4W	64,- €
9230-RIO-230V	Extension 230V Relay-IO Extension-board for EtherSens-devices Supply voltage: 230V AC 4 x relay-OUT 230VAC/16A	214,- €
9230-RIO-24V	Extension 24V Relay-IO Extension-board for EtherSens-devices Supply voltage: 24V DC 4 x relay-OUT 230VAC/16A	160,- €

accessories:		
Art. ID.	name	price
9230-ANT-WAND	Stationary Wifi-antenna for wall fastening for EtherSens-devices, cable length: 5m incl. bracket	49,- €
9230-LTE-ANTW	Stationary LTE-antenna for fixed mounting for EtherSens-devices LTE-modem cable length: 2m	153,- €
9230-SD-32	Micro-SD-card 32GB for EtherSens-devices SDHC class 10	24,- €
9240-SDÜ	Option Safe S7-PLC-data-transmission Function extension for recognition of save data-transmission by toggle bit or counters in the S7-PLC. In case of a failure, a default configuration is mapped to the outputs.	99,- €
9250-1	Widerstandsanpassung EtS	5,- €
9352-WLAN-ANT	Magnetic base antenna for S7-WLAN-Bridge, WLAN-Klemme, EtherSens cable length: 3m	78,- €
9391.1	24V DC power-supply unit 625mA Primary 110V - 240 VAC Euro+USA-plug	39,- €
9636-CROSS	Cross-cable 3m Cat5+, shielded RJ45 plug <=> RJ45 plug, twisted pinning	10,- €
9636-TCPIP	Patch-cable 3m, Cat5+, shielded RJ45 plug <=> RJ45 plug, 1:1	10,- €
9636-TCPIP.02M	Patch-cable 0.25m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €
9636-TCPIP.1M	Patch-cable 1m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €

sensors:		
Art. ID.	name	price
9220-SONNE	Sun-light-sensor for EtherSens max. 220k Lux (switchable ranges) 5V DC supply (from I2C-interfaceport) I2C-connection 1m	99,- €
9220-U-I-BOX	U-I-box for EtherSens max. 1000V DC / 40A 24V DC supply 20cm power-cable 4mm2 with Amphenol-plug I2C-connection 1m	149,- €

EtherSens Messenger



PLC controlled alarm-message dispatch

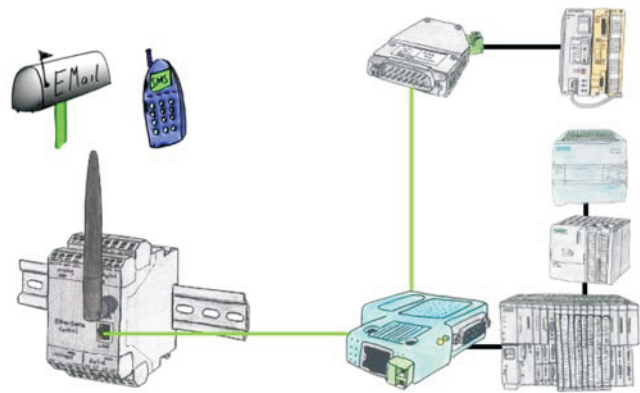
- Sends alarm-messages controlled by the PLC
- Receiver in the PLC deposited, so ONLINE replaceable
- Messages in the PLC deposited, so ONLINE replaceable

Supply voltage:	24V +/- 20%
Power consumption:	2 watt
Display:	WEB-Browser 1 status LED bicolor
Handling/Configuration:	WEB-Browser
Interfaces:	Slot for microSD Antenna-connector GSM/FME(m) (2.4 GHz IEEE 802.11b/g) 10/100BaseTX RJ45-ethernet-plug Button for factory settings
Operating temperature:	5 - 55°C
Case:	ABS-plastic case V0
Dimensions:	100 x 112 x 45 mm
Scope of delivery:	EtherSens Basic WIFI-stub-antenna

Commercial data:	
EAN number:	4260363244282
HS-code:	85371091
Weight:	0.3000 kg

Applications

Message dispatch from the PLC



Send directly from your PLC news, statuses, alarms as SMS or email.

devices:		
Art. ID.	name	price
9201	EtherSens Basic Operating as a client or access-point Configuration via web-server Supply: 24V DC	249,- €

extensions:		
Art. ID.	name	price
9230-AIO	Extension Analog-IO V1.0 Extension-board for EtherSens-devices 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V)	120,- €
9230-AIO-V1.1	Extension Analog-IO V1.1 Extension-board for EtherSens-devices 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V)	140,- €
9230-DIO	Extension Digital-IO Extension-board for EtherSens-devices 12 x digital IN or OUT 24VDC 400mA free config with software	180,- €
9230-EI2C-3.3V	Extension with ext. galv. separated I2C 3.3V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 3.3V	110,- €
9230-EI2C-5V	Extension with ext. galv. separated I2C 5V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 5V	110,- €
9230-GG	Bigger Case Width 90mm instead of 45mm	100,- €
9230-LTE	Extension LTE-modem LTE-modem-board for EtherSens-devices Send/receive of SMS-messages Communication from/into internet	249,- €
9230-MIO-232	Extension RS232-IO Extensionboard for EtherSens-devices V1.0 for RS232 (Rx/D, Tx/D)	149,- €
9230-MIO-422	Extension RS422-IO Extensionboard for EtherSens-devices V1.0 for RS422 (4-wire)	149,- €
9230-MIO-485	Extension RS485-IO Extensionboard for EtherSens-devices V1.0 for RS485	149,- €
9230-MIO-TTY	Extension TTY-IO Extensionboard for EtherSens-devices V1.0 for TTY (incl. 2x current-sources)	149,- €
9230-NT-230V	Power-supply-rack-unit 230V Input voltage: 100 - 240VAC 50-60Hz Output voltage: 24V DC Power: 4W	64,- €
9230-RIO-230V	Extension 230V Relay-IO Extension-board for EtherSens-devices Supply voltage: 230V AC 4 x relay-OUT 230VAC/16A	214,- €
9230-RIO-24V	Extension 24V Relay-IO Extension-board for EtherSens-devices Supply voltage: 24V DC 4 x relay-OUT 230VAC/16A	160,- €

accessories:		
Art. ID.	name	price
9230-SD-32	Micro-SD-card 32GB for EtherSens-devices SDHC class 10	24,- €
9352-WLAN-ANT	Magnetic base antenna for S7-WLAN-Bridge, WLAN-Klemme, EtherSens cable length: 3m	78,- €
9391.1	24V DC power-supply unit 625mA Primary 110V - 240 VAC Euro+USA-plug	39,- €
9636-CROSS	Cross-cable 3m Cat5+, shielded RJ45 plug <=> RJ45 plug, twisted pinning	10,- €
9636-TCPIP	Patch-cable 3m, Cat5+, shielded RJ45 plug <=> RJ45 plug, 1:1	10,- €
9636-TCPIP.02M	Patch-cable 0.25m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €
9636-TCPIP.1M	Patch-cable 1m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €

EtherSens Oxygen

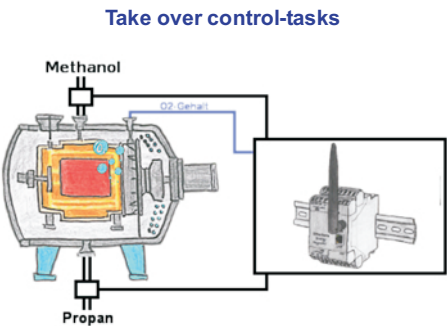


Gas-values capture and protocol

- Measuring range of O2 from % to E-24
- Data-transfer via TCP/IP in a DB in S7-PLC

Supply voltage:	100 - 240V 50-60Hz
Display:	WEB-Browser 1 status LED bicolor
Handling/Configuration:	WEB-Browser
Interfaces:	Slot for microSD Antenna-connector GSM/FME(m) (2.4 GHz IEEE 802.11b/g) 10/100BaseTX RJ45-ethernet-plug Button for factory settings
Operating temperature:	5 - 55°C
Case:	ABS-plastic case V0
Dimensions:	100 x 112 x 45 mm
Scope of delivery:	EtherSens Oxygen WIFI-stub-antenna
Commercial data:	
EAN number:	4260363244411
Weight:	0.3000 kg

Applications



Capture with the Ethersens-device not only your process-values, you would be able to do control-tasks with the device.

devices:		
Art. ID.	name	price
9205	EtherSens Oxygen zirconium-probe OxygenServiceController 100% - 10E-24%	2649,- €
9206	EtherSens Oxygen Plum-O2-cell with Plum-O2-cell	449,- €

accessories:		
Art. ID.	name	price
9230-AIO	Extension Analog-IO V1.0 Extension-board for EtherSens-devices 4 x analog IN 0-5V opt. with ext.Shunt 0/4-20mA opt. with ext. resistance 0-10/24/50V 4 x analog OUT 0/4-20mA (24V)	120,- €
9230-AIO-V1.1	Extension Analog-IO V1.1 Extension-board for EtherSens-devices 4 x Analogue Input (switchable between U, I, differential) 4 x analog OUT 0/4-20mA (24V)	140,- €
9230-DIO	Extension Digital-IO Extension-board for EtherSens-devices 12 x digital IN or OUT 24VDC 400mA free config with software	180,- €
9230-EI2C-3.3V	Extension with ext. galv. separated I2C 3.3V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 3.3V	110,- €
9230-EI2C-5V	Extension with ext. galv. separated I2C 5V Extension-board for EtherSens-devices with galvanic separated external I2C-connector for 5V	110,- €
9230-GG	Bigger Case Width 90mm instead of 45mm	100,- €
9230-LTE	Extension LTE-modem LTE-modem-board for EtherSens-devices Send/receive of SMS-messages Communication from/into internet	249,- €
9230-MIO-232	Extension RS232-IO Extensionboard for EtherSens-devices V1.0 for RS232 (Rx/D, Tx/D)	149,- €
9230-MIO-422	Extension RS422-IO Extensionboard for EtherSens-devices V1.0 for RS422 (4-wire)	149,- €
9230-MIO-485	Extension RS485-IO Extensionboard for EtherSens-devices V1.0 for RS485	149,- €
9230-MIO-TTY	Extension TTY-IO Extensionboard for EtherSens-devices V1.0 for TTY (incl. 2x current-sources)	149,- €
9230-RIO-230V	Extension 230V Relay-IO Extension-board for EtherSens-devices Supply voltage: 230V AC 4 x relay-OUT 230VAC/16A	214,- €
9230-RIO-24V	Extension 24V Relay-IO Extension-board for EtherSens-devices Supply voltage: 24V DC 4 x relay-OUT 230VAC/16A	160,- €
9230-SD-32	Micro-SD-card 32GB for EtherSens-devices SDHC class 10	24,- €
9352-WLAN-ANT	Magnetic base antenna for S7-WLAN-Bridge, WLAN-Klemme, EtherSens cable length: 3m	78,- €
9391.1	24V DC power-supply unit 625mA Primary 110V - 240 VAC Euro+USA-plug	39,- €
9636-CROSS	Cross-cable 3m Cat5+, shielded RJ45 plug <=> RJ45 plug, twisted pinning	10,- €
9636-TCPIP	Patch-cable 3m, Cat5+, shielded RJ45 plug <=> RJ45 plug, 1:1	10,- €
9636-TCPIP.02M	Patch-cable 0.25m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €
9636-TCPIP.1M	Patch-cable 1m, Cat5e, shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €

sensors:		
Art. ID.	name	price
9220-SONNE	Sun-light-sensor for EtherSens max. 220k Lux (switchable ranges) 5V DC supply (from I2C-interfaceport) I2C-connection 1m	99,- €
9220-U-I-BOX	U-I-box for EtherSens max. 1000V DC / 40A 24V DC supply 20cm power-cable 4mm2 with Amphenol-plug I2C-connection 1m	149,- €

MONI mobile netanalyser




Load-studies / energy-audits /
power- and energy-logging /
simplified load-studies



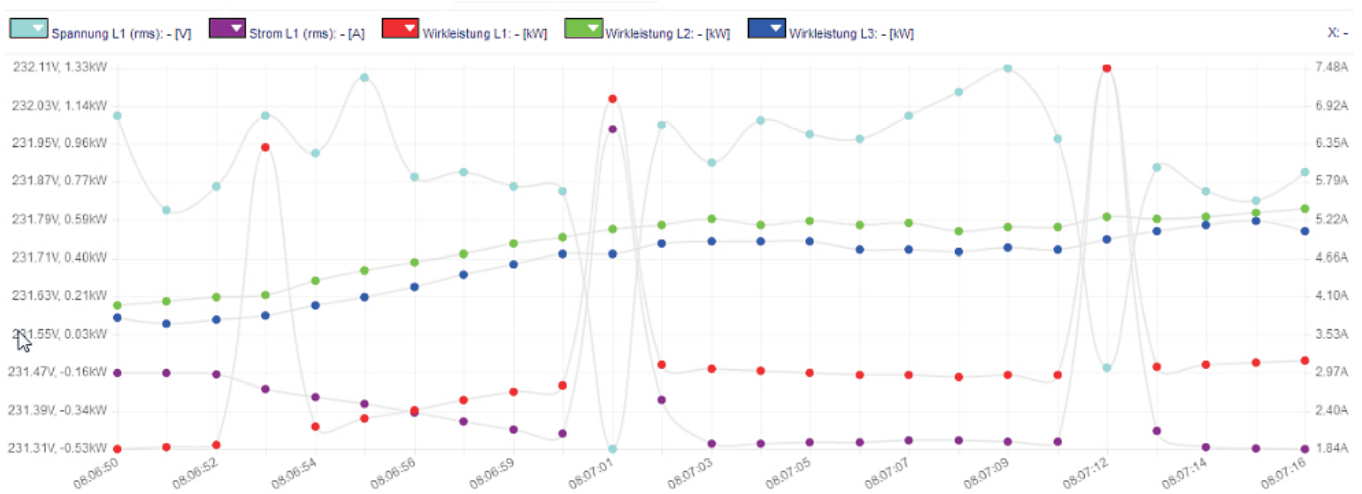
- Determining energy-efficiency
- L1, L2, L3, N realtime analyses
- 8000 measurements / second
- Voltage 100-500V AC
- Current 0,1-5000A (Push-Pull-connector)
- Hz / cos phi / power-factor
- Active, reactive and apparent energy-consumption in kWh
- Supply:
100-240V 50-60Hz (from L1) / 24VDC (over detachable connector) / USB (from PC/power-pack)
- Operation / configuration web-browser over LAN / Wifi
- WIFI-modes: Access-Point (open an own net) and Client (connects to an existing net)
- Data-storage microSD/FTP-Server
- For Rogowski-spool

Example instruments-mask:

Topologie: Verleideraum	L1	L2	L3	N
U	231.91 V	232.29 V	233.28 V	
I	7.47 A	14.25 A	6.91 A	3.41 A
f	50.00 Hz			

Topologie: Verleideraum	L1	L2	L3	
P	1.68 kW	1.09 kW	-0.08 kW	 2.69 kW
Q	1.51 kVAR	2.52 kVAR	1.50 kVAR	 5.53 kVAR
S	2.30 kVA	3.21 kVA	1.67 kVA	 7.18 kVA
PF	0.76 cos	0.48 cos	0.37 cos	

Example History:



Supply voltage:

100-240V 50-60Hz (from L1)
24VDC (over detachable connector)
USB (from PC/power-pack)

Power consumption:

6 watt

Display:

WEB-Browser
1 status LED bicolor

Handling/Configuration:

WEB-Browser

Interfaces:

4 x voltage-input (L1, L2, L3, N)
4 x sensor-input (B+W-terminal ever phase + N)
Slot for microSD
Antenna-connector GSM/FME(m) (2.4 GHz IEEE 802.11b/g)
10/100BaseTX RJ45-ethernet-plug
Button for factory settings

Operating temperature:

5 - 55°C

Case:

ABS-plastic case V0

Dimensions:

115 x 95 x 30 mm

Scope of delivery:

MONI
WIFI-stub-antenna

Commercial data:

EAN number:

4260363244497

Weight:

0.3000 kg

Applications



Observe the collected information on the integrated web-server of **MONI** with your mobile-phone or tablet. Change the parameterization of **MONI**, operate and control the **MONI** easily via the web interface. Of course you can also operate wired, where you put the **MONI** in your network. Parallel operation of LAN and Wifi is also possible.

devices:		
Art. ID.	name	price
9210	MONI portable netanalyser EN 50470-1 / EN 50470-3 L1, L2, L3, N realtime analyses 8000 measurements / second Voltage 100-500VAC Current 0,1-5000A Push-Pull Hz / cos phi / power-factor Active, reactive and apparent energy-consumption in kWh Supply 100-240V 50-60Hz/24VDC/USB Operation / configuration web-browser over LAN / Wifi Data-storage microSD/FTP-Server For Rogowski-coils up to 0,5V	490,- €

sensors:		
Art. ID.	name	price
9220-20	Rogowski-coil 500A, 55mm Cable hole: 55mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	91,- €
9220-20-PP	Rogowski-coil 500A, 55mm with push-pull-connector Cable hole: 55mm Cable length: 1,5m Shutter: click cap With push-pull-connector Easy and fast installation with no interruptible power-lines	106,- €
9220-21	Rogowski-coil 500A, 35mm Cable hole: 35mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	91,- €
9220-21-PP	Rogowski-coil 500A, 35mm with push-pull-connector Cable hole: 35mm Cable length: 1,5m Shutter: click cap With push-pull-connector Easy and fast installation with no interruptible power-lines	106,- €
9220-23	Rogowski-coil 500A, 470mm Cable hole: 470mm Cable length: 2,5m Shutter: screw cap Easy and fast installation with no interruptible power-lines	79,- €
9220-23-PP	Rogowski-coil 500A, 470mm with push-pull-connector Cable hole: 470mm Cable length: 2,5m Shutter: screw cap With push-pull-connector Easy and fast installation with no interruptible power-lines	94,- €
9220-24	Rogowski-coil 500A, 80mm Cable hole: 80mm Cable length: 1,5m Shutter: click cap Easy and fast installation with no interruptible power-lines	122,- €
9220-24-PP	Rogowski-coil 500A, 80mm with push-pull-connector Cable hole: 80mm Cable length: 1,5m Shutter: screw cap With push-pull-connector Easy and fast installation with no interruptible power-lines	137,- €
9220-25-D	Rogowski-coil 500A, 35mm, twist-lock Cable hole: 35mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	54,- €

sensors:		
Art. ID.	name	price
9220-25-D-PP	Rogowski-coil 500A, 35mm, twist-lock with PP Cable hole: 35mm Cable length: 2,5m Shutter: twist-lock With push-pull-connector Easy and fast installation with no interruptible power-lines	69,- €
9220-26-D	Rogowski-coil 500A, 80mm , twist-lock Cable hole: 80mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	59,- €
9220-26-D-PP	Rogowski-coil 500A, 80mm, twist-lock with PP Cable hole: 80mm Cable length: 2,5m Shutter: twist-lock With push-pull-connector Easy and fast installation with no interruptible power-lines	74,- €
9220-27-D	Rogowski-coil 500A, 160mm , twist-lock Cable hole: 160mm Cable length: 2,5m Shutter: twist-lock Easy and fast installation with no interruptible power-lines	64,- €
9220-27-D-PP	Rogowski-coil 500A, 160mm, twist-lock with PP Cable hole: 160mm Cable length: 2,5m Shutter: twist-lock With push-pull-connector Easy and fast installation with no interruptible power-lines	79,- €

accessories:		
Art. ID.	name	price
9230-SD-32	Micro-SD-card 32GB for EtherSens-devices SDHC class 10	24,- €
9231	Net-connection-set Cable-set consisting of: 3x black 1x blue 1x green Safety test lead 1000 V / CAT II Stackable connectors Ø 4 mm Length 2 m	129,- €
9250-PP	Push-pull-connector	10,- €
9352-24	Power connector 2pins small cable coupling by screw-connector (small)	3,- €
9352-WLAN-ANT	Magnetic base antenna for S7-WLAN-Bridge, WLAN-Klemme, EtherSens cable length: 3m	78,- €
9636-CROSS	Cross-cable 3m Cat5+, shielded RJ45 plug <=> RJ45 plug, twisted pinning	10,- €
9636-TCPIP	Patch-cable 3m, Cat5+, shielded RJ45 plug <=> RJ45 plug, 1:1	10,- €
9636-TCPIP.02M	Patch-cable 0.25m, Cat5e , shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €
9636-TCPIP.1M	Patch-cable 1m, Cat5e , shielded RJ45 plug <=> RJ45 plug, 1:1	14,- €

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NETWORK PROBLEMS?

TINA-helps! Portable Intelligent Network-Analyzer



Features

- Easy analysis of network traffic without the need for an additional PC and hub / switch
- Record network traffic as with Wireshark, open and save from *.pcap / *.pcapng files
- Recording in FTP server
- Display on the network occurring IP addresses
- Display of the IP connections (which IP accesses which IP)
- Easy replacement of the IP addresses to use with device in communicate with other subnet to be able to (for example S7-LAN)
- VoIP and Profinet protocol analysis
- Monitoring subnets
- Monitoring complete network
- Automatic whitelist
- E-Mail alerting in the event of surveillance violations
- Complete operation (display and parameterization) via web server? via WLAN
- Clear presentation of Website on PC and Smartphone
- No further hardware required: TINA is simply plugged in between two LAN participants and can be operated via WLAN

TINA (portable Network-Analyzer)

- Power supply via 24V DC and optional USB power bank

TINA Version 0.80

Schnittstelle: A - Anzeigefilter: ✓

Nr.	Zeit	Quelle	Ziel	Protokoll	Länge	Beschreibung
215	31.767	192.168.1.102	192.168.1.254	HTTP	117	GET / HTTP/1.1
216	32.212	00.0E:8C:87:B...	01:80:C2:00:00:00	PROFI...	60	Len=40 Type=PROFINET(0x8802)
217	32.278	192.168.1.72	224.0.0.251	UDP	83	5353 > 5353 Len=49
218	32.301	F802:0573:F8...	F802:0573:F8...	UDP	208	54275 > 1900 Len=154
219	32.625	192.168.1.110	192.168.1.255	UDP	305	54915 > 54915 Len=271
220	32.964	192.168.1.203	239.255.255.250	UDP	378	52006 > 1900 Len=344
221	33.074	192.168.1.203	239.255.255.250	UDP	378	52006 > 1900 Len=344
222	33.184	192.168.1.203	239.255.255.250	UDP	387	52006 > 1900 Len=353
223	33.294	192.168.1.203	239.255.255.250	UDP	387	52006 > 1900 Len=353
224	33.404	192.168.1.203	239.255.255.250	UDP	442	52006 > 1900 Len=408
225	33.412	00.0E:8C:87:B...	01:80:C2:00:00:00	PROFI...	60	Len=40 Type=PROFINET(0x8802)
226	33.514	192.168.1.203	239.255.255.250	UDP	442	52006 > 1900 Len=408
227	33.624	192.168.1.203	239.255.255.250	UDP	452	55449 > 1900 Len=418
228	33.638	192.168.1.110	192.168.1.255	UDP	305	54915 > 54915 Len=271
229	33.734	192.168.1.203	239.255.255.250	UDP	452	55449 > 1900 Len=418
230	34.454	192.168.1.203	239.255.255.250	UDP	452	55449 > 1900 Len=418

Detailansicht #221

Headerlänge: 20
Priorisierung (TOS): DSCP 0x0, Not-ECT
Gesamtlänge: 364
Identifikation: 0
Flags: DF
Fragmentierungs-Offset: 0

TINA Version 0.80

IP-Changer:

Quelle	Ziel	Typ	Richtung	Quelle	Ziel	Typ
192.168.1.110	192.168.1.203	ARP	→	192.168.1.110	192.168.1.203	ARP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.110	192.168.1.255	UDP	→	192.168.1.110	192.168.1.255	UDP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.72	192.168.1.95	ARP	→	192.168.1.72	192.168.1.95	ARP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.110	192.168.1.255	UDP	→	192.168.1.110	192.168.1.255	UDP
192.168.1.70	192.168.1.255	UDP	→	192.168.1.70	192.168.1.255	UDP
192.168.1.72	192.168.1.95	ARP	→	192.168.1.72	192.168.1.95	ARP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.203	239.255.255.250	UDP	→	192.168.1.203	239.255.255.250	UDP
192.168.1.110	192.168.1.255	UDP	→	192.168.1.110	192.168.1.255	UDP
192.168.1.70	192.168.1.255	UDP	→	192.168.1.70	192.168.1.255	UDP
192.168.1.110	192.168.1.255	UDP	→	192.168.1.110	192.168.1.255	UDP
192.168.1.11	192.168.1.106	ARP	→	192.168.1.11	192.168.1.106	ARP
192.168.1.70	192.168.1.255	UDP	→	192.168.1.70	192.168.1.255	UDP



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