ENERDIS®
CHAUVIN ARNOUX GROUP

MEMO & ULYS
Submeters

- Single-phase, three-phase, connected directly or via CT
- Integrated communication: Ethernet, M-Bus, Modbus
- Metering, submetering, energy monitoring, rebilling

Complete solution for implementing a metering plan

Measure up

Measuring to assess, allocate and monitor

*Energy efficiency is not just a project for society, it is also a crucial economic challenge in the context of an **action plan to control and reduce energy consumption**. The incentives developed by politicians worldwide cover all sectors of the economy and all types of activities.*

*The new **regulations and certifications** for installations, implemented at national level to encourage savings and reduce impact on the environment, combine to fulfil the current requirements for optimization of installations' energy consumption.*

ENERGY PERFORMANCE PROJECT

- Assess consumption per usage
- Fulfil the requirement for energy auditing established by 2012/27/UE
- Optimize consumption per square metre in a shop
- Reduce the electricity consumption of the production lines
- Link a usage to its cost
- Set up an Energy Performance Contract (EPC)
- Certify an office building as HQE
- Obtain ISO 50001 certification

Implementing a metering plan

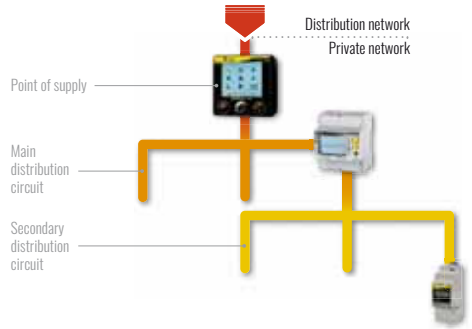
While taking into account the constraints

To measure and meter at the level of the subfeeders, you need to take a number of major structural elements into account:

- Integration in an existing architecture or not
- The available communication protocols
- The types of loads connected to the electrical network
- The way the data are made available (locally or remotely)

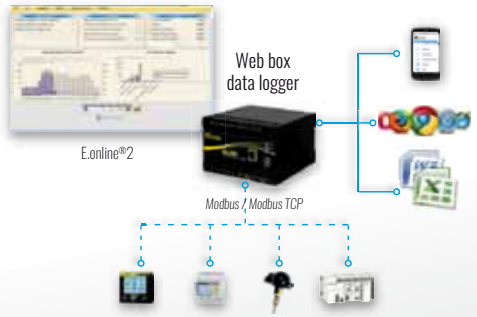
At all levels of the installation

Because of the complexity of the installations and equipment connected, increasingly demanding measurements are necessary, including both downstream and upstream of the electrical distribution circuit.



By means of an energy management system

The energy, climate and process data are collected via an automatic remote data-retrieval unit from the meters, sensors, power monitors, etc., connected to a communication network or equipped with pulses.
The E.online®2 software completes the system to monitor, control and manage all the types of consumption.



MID meters

Mandatory for active energy rebilling on the basis of consumption calculations by index differences.

Enerdis's active energy meters are **MID-certified**. Their references end in "-M", e.g. MEMO4-M.

Energy intelligence expert

The French manufacturer Enerdis has been active on the metering and measurement market for more than 20 years. A precursor in terms of energy management, its offering of industrial-grade products and systems covers the entire range of measurement requirements, whatever your sector of activity.
Nuclear, petrochemicals, rail transport, industry: for sectors with very severe environmental constraints, the Enerdis® offering includes solutions for all the most critical standard requirements. At the heart of the measurement professions, Enerdis plays a major role in implementing energy management and control systems.

Quite simply, the most compre hensive range...

Functions

- From **active energy metering to recording of all the electrical activity** on a feeder (4 quadrants, alarms)
- Measurement of **single-phase and three-phase loads**
- **Direct** connection up to 80 A **or CT connection**
- **Dual tariff, energy index** via the pulse output
- **Energy rebilling**. All the Enerdis® meters are available in MID versions

Multi-protocol communication

Guaranteed interoperability via a wide variety of communication protocols, including **Modbus RS485, M-bus and Ethernet.**

The meters from Enerdis® offer full communication features:

- in an **integrated way** (Ulys TT, TD80, Memo4)
- associated with communication modules (Ulys MD80, TDA80, TTA) for product replacement

Installation

- **Compact size**
  - 1 module: single-phase with integrated communication
  - 4 modules: three-phase with integrated communication
- **Wiring simplified** by separation of the power terminals and the ancillary connections
- **Implementation facilitated** by a clear, functional startup guide
- **Error-free startup** thanks to display of the instantaneous current/voltages on the screen; detection of the phase sequence and verification loop for programming of the CT ratios

CERTIFIED MID CERTIFIED

Active energy monitoring

Complete or simplified recording of the activity on an electrical feeder of an installation

For a supervised submetering project

Linking a network of **ULYS TT/TD80 or MEMO4 Modbus meters** with an ELOG web-box data logger or a PLC

Essential tools for metering

MEM03, MD65, ULYS TDA80 and ULYS TTA: 4 meters to view on site all the energy data on each electrical feeder

For advanced processing

The **ULYS TD80/TT Ethernet** meters store details of all the activity on an electrical feeder independently:

- Integrated web pages
- Alarms
- Recording of the electrical quantities
- Transmission of the data to an ftp server
- Time synchronization

Choose the right meter...

			SINGLE-PHASE NETWORK					THREE-PHASE NETWORK			
			Without communication			With communication		Without integrated communication		With integrated communication	
	Upstream circuit-breaker rating		≤ 32 A	> 32 A		≤ 45 A	> 45 A	80 A	On TC	80 A	On TC
	Model		MEM03 MEM03-M	MEM04-M	ULYS MD65 ULYS MD65-M	MEM04 Modbus MEM04-M Modbus	ULYS MD80 ULYS MD80-M	ULYS TDA80 ULYS TDA80-M	ULYS TTA ULYS TTA-M	ULYS TD80 ULYS TD80-M	ULYS TT ULYS TT-M
											
	Rating		32 A	45 A	65 A	45 A	80 A	80 A	On CT (1-5 A)	80 A	On CT (1 - 5 A)
	MID certification		MEM03-M	MEM04-M	ULYS MD65-M	MEM04-M Modbus	ULYS MD80-M	ULYS TDA80-M	ULYS TTA-M	ULYS TD80-M	ULYS TT-M
	Accuracy class		IEC class 1 / MID class B			IEC class 1 / MID class B		IEC class 1 / MID class B		IEC class 1 / MID class B	
Installation	Format	DIN modules	1	1	2	1	2	4	4	4	4
	Input voltage		230 Vac			230 Vac		230 Vac / 400 Vac		230 Vac / 400 Vac	
	Inputs	Direct	32 A	45 A	65 A	45 A	80 A	80 A		80 A	
		on CT	-	-	-	-	-	-	Isolated	-	Isolated
Metering and energy management	Total energy	Display	total kWh	kWh, kVArh, total & partial kVAh	kWh total	kWh, kVArh, total & partial kVAh	kWh, kVArh, total & partial kVAh	kWh, kVArh, total & partial kVAh	kWh, kVArh, total & partial kVAh	kWh, kVArh, total & partial kVAh	kWh, kVArh, total & partial kVAh
		Via communication	-	-	-	Oui	Via ULYSCOM	Via ULYSCOM	Via ULYSCOM	Yes	Yes
	Tariff		1	1	1	2	2	2	2	2	2
Multiple measurements	Electrical parameters	Display	-	inst, V, I, P, Q, S, F, FP	-	inst, V, I, P, Q, S, F, FP	inst, V, I, P, Q, S, F, FP	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S
		Via communication	-	-	-	inst, V, I, P, Q, S, F, FP	inst, V, I, P, Q, S, F, FP	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S	inst, V, U, I, P, Q, S, F, FP, ∑P, ∑Q, ∑S
	Load and trend curves		-	-	-	-	Via ULYSCOM ETHERNET	Via ULYSCOM ETHERNET	Via ULYSCOM ETHERNET	ULYS TD80 Ethernet / -M	ULYS TT Ethernet / -M
Inputs / outputs	Pulse output(s)		1	1	1	1	2	2	2	1	1
	Tariff change input		-	-	-	-	1	1	1	1 (except Ethernet model)	1 (except Ethernet model)
Communication	RS485 Modbus		-	-	-	Yes	Via ULYSCOM	Via ULYSCOM	Via ULYSCOM	ULYS TD80 Modbus / -M	ULYS TT Modbus / -M
	Ethernet Modbus		-	-	-	-	Via ULYSCOM	Via ULYSCOM	Via ULYSCOM	ULYS TD80 Ethernet / -M	ULYS TT Ethernet / -M
	M-bus		-	-	-	-	Via ULYSCOM	Via ULYSCOM	Via ULYSCOM	ULYS TD80 M-bus / -M	ULYS TT M-bus / -M
Metrology	V/U/I		-	-	-	-	0.5 %	0.5 %			
	P/Q/S		-	-	-	-	1 %	1 %			
	Eact		IEC class 1 / MID class B			IEC class 1 / MID class B		IEC class 1 / MID class B			
	Ereact		-	-	-	-	IEC class 2	IEC class 2			

To order

MEM03: MEMN 003 NA	**MEM04-M**: P01330751	**ULYS MD65**: P01330920	**MEM04 Modbus**: P01330752	**ULYS MD80**: P01331010
MEM03-M: P01330700	-	**ULYS MD65-M**: P01330921	**MEM04-M Modbus**: P01330753	**ULYS MD80-M**: P01331011

ULYS TDA80: P01331012	**ULYS TTA**: P01331015	**ULYS TD80 Modbus**: P01331034	**ULYS TT Modbus**: P01331035
ULYS TDA80-M: P01331018	**ULYS TTA-M**: P01331019	**ULYS TD80-M Modbus**: P01331036	**ULYS TT-M Modbus**: P01331037
		ULYS TD80 M-bus: P01331042	**ULYS TT M-bus**: P01331043
		ULYS TD80-M M-bus: P01331044	**ULYS TT-M M-bus**: P01331045
		ULYS TD80 Ethernet: P01331038	**ULYS TT Ethernet**: P01331039
		ULYS TD80-M Ethernet: P01331040	**ULYS TT-M Ethernet**: P01331041

Don't forget

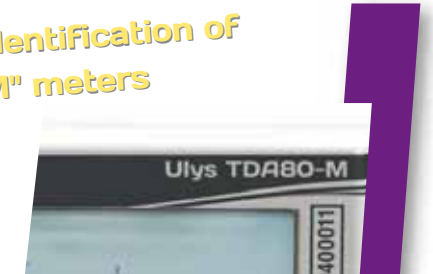
Current transformers offering

TC CLIP 100 A /1 A	TCR 100 A/ 1 or 5 A
TC CLIP 250 A/1 A	TCR 150 A/ 1 or 5 A
TC CLIP 400 A/1 A	TCR 200 A/ 1 or 5 A
...	...

Communication modules (for ULYS MD80 / TDA80 / TTA)

Model	Reference
ULYSCOM MODBUS RS485	P01331030
ULYSCOM M-BUS	P01331031
ULYSCOM ETHERNET MODBUS TCP	P01331032

Quick identification of MID "-M" meters



From electrical measurement to energy performance management

*Drawing on long experience in energy monitoring of applications, **Enerdis®** develops **products and services** for easy **control** of all types of **energy consumption**, particularly in the context of an **ISO 50001** approach.*

Current transformers

Compact, economical, rugged range for non-intrusive measurement installations.

1

Remote data retrieval and recording of energy data

Web-box data logger ELOG

Automatic remote data retrieval, recording and storage of the energy, climate and process data.

Processing may be performed locally or by means of an energy information system, whatever the manufacturer of the equipment.

2

3

Comprehensive monitoring of LV/HV power quality

ENERIUM® power monitors

Measurement, recording and analysis of all the electrical quantities.

4

Energy monitoring system

E.online® 2 software

Control, monitoring, management and supervision of multi-energy, multi-site and multi-user energy data.

Generation of financial and energy reports in accordance with the ISO 50001 standard.

THE ENERDIS APPLICATIONS TEAM

To assist you:

- in choosing the solutions to implement
- by commissioning installations
- by training the users on site or at our premises

Please do not hesitate to contact us

FRANCE
Enerdis
16, rue Georges Besse - Silic 44
92182 ANTONY Cedex
Tel: +33 1 75 60 10 30
Fax: +33 1 46 66 62 49
export@enerdis.fr
www.enerdis.com

UNITED KINGDOM
Chauvin Arnoux Ltd
Nelson Ct, Flagship Sq, Shaw Cross Business Pk
Dewsbury, West Yorkshire - WF12 7TH
Tel: +44 1924 460 494
Fax: +44 1924 455 328
info@chauvin-arnoux.co.uk
www.chauvin-arnoux.com

MIDDLE EAST
Chauvin Arnoux Middle East
P.O. BOX 60-154
1241 2020 JAL EL DIB - LEBANON
Tel: +961 1 890 425
Fax: +961 1 890 424
camie@chauvin-arnoux.com
www.chauvin-arnoux.com

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