Retrofit Line

Energy measurement
for your existing installations

MADE TO MEASURE

ENERGY EFFICIENCY

socomec
Innovative Power Solutions SCP

We owe you more than just a solution:

SOCOMEC is an independent industrial group, specialising in the availability, control and safety of low voltage electrical energy for industry and the service sector. 2,700 staff in 22 subsidiaries worldwide have complete control over the design, manufacture and sale of its products.

SOCOMEC solutions are recognised as being the most innovative and comprehensive on the market, meeting the most demanding requirements and applications.

SYDV 070 A

Your energy efficiency concerns are clear…

Because today the environment is a **universal concern:**

- Kyoto protocol
- Sustainable development
- World energy council
- European Directives

an eco-conscious business must **contribute to the global objective to reduce energy consumption.**

In this context of eco responsibility, checking energy consumption is of utmost importance: **controlling energy can bring many gains**, in all respects: budgetary, environmental, societal…

SITE 468 A - SITE 467 A -SITE 463 A

… whatever your activity…

All fields are affected by the reduction in energy consumption:

- Industry,
- Infrastructure,
- IT sector,
- Health care buildings
- High-rise buildings…

All types of building need an appropriate solution: new and existing installations.

Existing sites, having been built before optimised energy consumption was a consideration, are especially in need of a dedicated energy efficient solution.

To meet this requirement, the ***Retrofit Line*** allows you to easily add metering and measuring points in electrical enclosures which are very restricted in terms of integration.

… we have an adapted solution

GAMME 115 A GB

The range of ***COUNTIS, DIRIS*** solutions meets each of your requirements and expectations in terms of energy metering, monitoring and analysis of the quality of the electrical networks.

Retrofit Line

MADE TO MEASURE

A combination of optimised devices and measurement sensors for easy commissioning

➲ Proven products

The ***COUNTIS*** and ***DIRIS Retrofit*** come from standard SOCOMEC ranges.

They therefore benefit from the **experience** gained from electrical network metering, monitoring and analysis applications.

➲ Guaranteed connection

All ***COUNTIS*** and ***DIRIS Retrofit*** units are protected against phase / neutral inversion and detect wiring errors.

Commissioning has been **simplified** to ensure the device operates correctly: in this way the installation **cost** is **reduced.**

➲ Easy installation

With **existing installations** where the measurement points have not been provided, ***TCO*** split-core transformers mean the power cables do not need to be disconnected. Operations are **quicker** and minimise the electrical disconnection time.

➲ High overall accuracy

The combination of ***COUNTIS*** and ***DIRIS Retrofit*** units with ***TCO*** split-core current transformers is optimised. They ensure overall accuracy of the measuring system down to less than 1 %, ideal for **energy efficiency applications.**

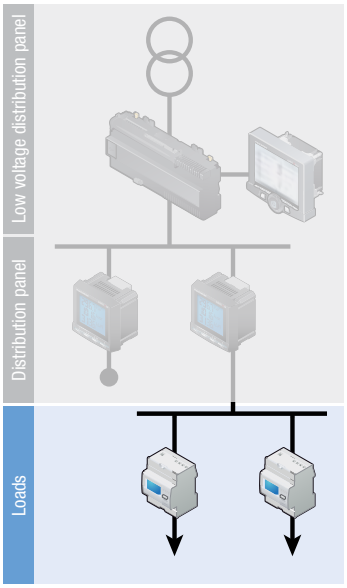
➲ Communication to Monitoring

The data from Retrofit products can be transferred to a central monitoring system.

This is the first step to a complete solution leading to **reduced energy bills.**

The *COUNTIS Retrofit* meter range

Selection guide for energy meters that must be combined with *TCOs*



REFT 016 A

	COUNTIS E42R	*COUNTIS E44R*	*COUNTIS E50R*	*COUNTIS E53R*
	Three-phase network via *TCO* up to 600 A			
MAIN SPECIFICATIONS				
MID certified B+D module	●	●		
Number of tariffs	2	4 ●	1	4 ●
RS485 JBUS / MODBUS communication		●		●
Protection against Phase / Neutral inversions	●	●	●	●
ENERGY METERING				
Active energy accuracy class (*COUNTIS* + *TCO*)	B	B	1	1
Total / partial active energy (kWh)	●/-	●/-	●/●	●/●
Total / partial reactive energy (kvarh)	●/-	●/-	●/●	●/●
Bidirectional metering*			●	●
Metrological LED	●	●		
Pulse output**	●		●	optional
MEASUREMENTS				
Active power (∑P) / Reactive power (∑Q)	●/-	●/●	●/●	●/●
Multi-measurement (I, U, V, S, FP)	●	●	●	●
INSTALLATION				
Width (Number of modules x 17.5 mm)	4	4	96 x 96	96 x 96
Self-supplied	●	●	auxiliary	auxiliary
Connection control	●	●	●	●
Sealable cover	●	●		
STANDARDS				
EN50470 (MID)	●	●		
IEC 62053-21, -22 or -23 (energy meters)	●	●	●	●
IEC 62053-31 (pulse output)	●			
REFERENCES				
References	4850 **3021**	4850 **3022**	4850 **3023**	4850 **3024**

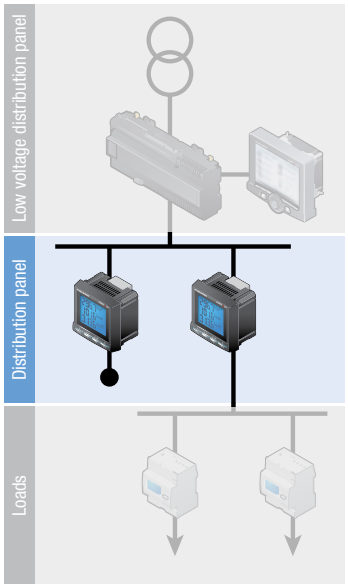
** Metering of consumed energy and produced energy*
*** Default programmable value: 100 Wh / imp. (duration 100 ms)*
• Function only available via RS485 communication

What are the advantages of an MID meter?

It guarantees a high-quality product	***COUNTIS E42R*** and ***E44R*** are MID-certified (B + D module). This means SOCOMEC is required to supply products which meet the design and production requirements imposed by this standard.
It allows to resell electricity	The MID directive guarantees safe and reliable metering. The meter is tamperproof and its accuracy guaranteed thanks to calibration on a metrology bench.
It guarantees a standardised measurement accuracy	Some metering devices available on the market are in class A (±2%). Socomec MID meters are more efficient, with guaranteed class B (±1%) measurement accuracy.

The *DIRIS Retrofit* meter range

Selection guide for multi-measurement meters that must be combined with *TCOs*



REFIT 016 A



	DIRIS A10R	*DIRIS A10R* with communication	*DIRIS A20R*	*DIRIS A40R*
	Three-phase network via *TCO* up to 600 A			
MAIN SPECIFICATIONS				
Multi-measurement and metering	●	●	●	●
RS485 JBUS / MODBUS communication		●	Optional	Optional
RS 485 PROFIBUS-DP communication				Optional
Ethernet communication				Optional
Protection against Phase / Neutral inversions	●	●	●	●
ENERGY METERING				
Active energy accuracy class (*DIRIS* + *TCO*)	1	1	1	1
Pulse meter	●	●		
Pulse output	1*	1*	1* optional	2 optional
Load curves				Optional
MEASUREMENTS				
Currents, voltages, frequency	●	●	●	●
Active, reactive and apparent power, power factor	Total and by phase	Total and by phase	Total and by phase	Total and by phase
Predictive power				●
Temperature(s)	●	●		1… 4 optional
Average currents, voltages, frequency				●
Average power				●
QUALITY ANALYSIS AND EVENT DETECTION				
THD	Row 51	Row 51	Row 51	Row 63
Spectral decomposition (Row 63)				●
Alarm output	1*	1*	1* optional	2 … 6 optional
MEASUREMENT AND EVENT HISTORY				
Load curves				Optional
Maximum mean active power	●	●	●	●
Maximum mean reactive / apparent power				●
Maximum average currents	●	●	●	●
INSTALLATION				
Width (number of modules x 17.5 mm)	4	4	96x96	96x96
Self-supplied	auxiliary	auxiliary	auxiliary	auxiliary
Connection control	●	●	●	●
Plug-in module options available			●	●
STANDARDS				
IEC 61557-12	●	●	●	●
REFERENCES				
References	4825 **0014**	4825 **0015**	4825 **0210**	4825 **0211**

*1 configurable output: equipment control, alarm report, pulse report

DIRIS Retrofit: comply with the requirements of the IEC 61557-12

Why comply with the IEC 61557-12 standard ?	A precise reference, IEC 61557-12 is the common denominator of all PMDs (Performance Monitoring Devices), devices designed to measure and monitor electrical parameters in distribution networks.
What does it bring to the user ?	The guarantee of a high level of equipment performance in terms of metrological, mechanical and environmental aspects (EMC, temperature, etc.).

The *TCO* range in association with the *COUNTIS* and *DIRIS Retrofit*

Selection guide for *TCO* split-core current transformers

REFIT 017 A

				
	TCO 24		*TCO 36*	
Primary / Secondary	100 A / 1 A	**250 A / 1 A**	**400 A / 1 A**	**600 A / 1 A**
Accuracy class	1*			
Internal diameter Ø (mm)	24	24	36	36
Dimensions H x W x D (mm)	74.5 x 45 x 34	74.5 x 45 x 34	91 x 57 x 40.5	91 x 57 x 40.5
REFERENCES				
References	182T **4910**	182T **4925**	182T **4940**	182T **4960**

** Overall accuracy of the **COUNTIS Retrofit** or **DIRIS Retrofit + TCO** combination. Accuracy is only guaranteed for this combination from 10 % to 120 % of the primary current.*


REFIT 002 A


REFIT 010 A

Combination of *COUNTIS* meters and *TCO* split-core current transformers

Meter the energy consumed within the electrical network, or any other energies throughout the installation (via the pulse concentrator Countis ECi), in order to:

- optimise and distribute energy costs,
- reinvoice the consumption to the user (MID versions).


REFIT 005 A


REFIT 010 A

Combination of *DIRIS* multi-measurement meters and *TCO* split-core current transformers

Measure and monitor all the values of the electrical network or any other energy (via the pulse concentrator Countis ECi or Diris A40 input/output module) in order to:

- analyse energy consumption and quality,
- identify malfunctions,
- improve the availability of the installation.

Now it's very easy to know your energy consumption precisely to optimise and reduce your energy bill!

The advantages of *TCO* split-core current transformers

Wide current range	The ***TCOs*** accept a primary current between 100 and 600 A making it possible to connect at different points in the installation.
Overall precision guaranteed	Combined with the ***COUNTIS*** and ***DIRIS Retrofit,*** the ***TCO*** guarantees overall accuracy to within less than 1 %.
Ultra compact	With their compact and open design, the ***TCOs*** are easily positioned on existing installations without the need to disconnect/reconnect the cables or modify the installation. Measurement points can therefore be placed in the most confined panels.

A specialist energy efficiency offering needs to be complete

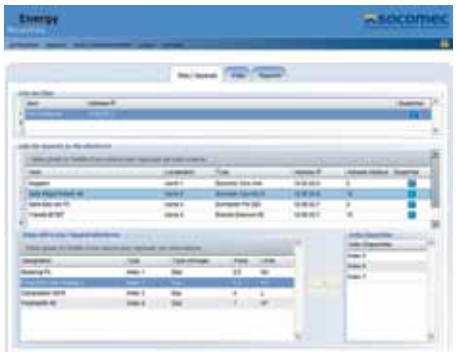
Multi-utility pulse concentrator: collate all energy data

The ***COUNTIS ECi*** pulse concentrator enables pulses from water, gas, compressed air, electricity meters or even analogue sensors (light, temperature, wind etc.) to be registered and stored. All data, ie. total and partial meters and load curves (available for all on/off and analogue inputs) can be centralised via RS485 communication using JBUS MODBUS protocol.

COUNTIS 207 A

Product	Description	Reference
COUNTIS ECi2	Pulse concentrator without analogue inputs	4853 **0000**
COUNTIS ECi3	Pulse concentrator with 2 analogue inputs	4853 **0001**

Energy Reporting software



COUNT 200 A

Report configuration

Monitoring multi-energy consumption over custom periods

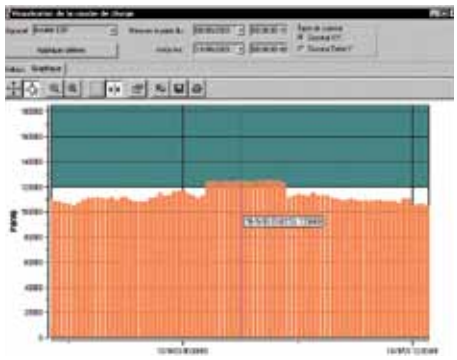
It enables:

- automatic generation of multi-utility consumption reports (electricity, water, gas, etc.) for more frequent monitoring,
- report creation on demand,
- customisation of reports to better suit customers needs.

Reports are also generated when the software is not running.

DIRIS 736 A

Control Vision software



DIRIS 514 A

Load graph

Monitor and analyse the parameters of different energies

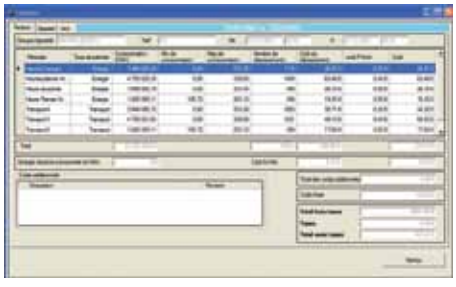
It enables:

- all electrical network parameters to be displayed (U, I, P, energy, etc.),
- multi-utility energy to be monitored: water, gas, electricity, etc.

Control Vision operates with ***COUNTIS Ci*** and ***DIRIS*** units.

DIRIS 734 A

Billing Application software



DIRIS 724 A

Bill

Manage electrical consumption by tariff and segment

It enables:

- tariff-based energy consumption management,
- analysis of total or partial consumption according to the segmentation selected by the user (by production line, by department, etc.).

Billing Application requires ***Control Vision*** application to operate.

DIRIS 735 A

Socomec worldwide

IN EUROPE

BELGIUM
SOCOMEC BELGIUM
B - 1190 Brussel
Tel. +32 (0)2 340 02 30 - Fax +32 (0)2 346 28 99
info.scp.be@socomec.com

FRANCE
SOCOMEC
F - 94132 Fontenay-sous-Bois Cedex
Tel. +33 (0)1 45 14 63 30 - Fax +33 (0)1 45 14 63 38
info.scp.fr@socomec.com

GERMANY
SOCOMEC GmbH
D - 76275 Ettlingen
Tel. +49 (0)7243 65 29 2 0 - Fax +49 (0)7243 65 29 2 13
info.scp.de@socomec.com

ITALY
SOCOMEC Elettrotecnica s.r.l.
I - 20098 San Giuliano Milanese (MI)
Tel. +39 02 9849821 - Fax +39 02 98243310
info.scp.it@socomec.com

SPAIN
SOCOMEC ELECTRO, S.L.
E - 08310 Argentona (Barcelona)
Tel. +34 93 741 60 67 - Fax. +34 93 757 49 52
info.scp.es@socomec.com

THE NETHERLANDS
SOCOMEC B.V.
NL - 3991 CD Houten
Tel. +31 (0)30 760 0901- Fax +31 (0)30 637 2166
info.scp.nl@socomec.com

THE UNITED KINGDOM
SOCOMEC Ltd
Hitchin Hertfordshire SG4 0TY
Tel. +44 (0)1462 440033 - Fax +44 (0)1462 431143
info.scp.uk@socomec.com

IN ASIA

NORTH EAST ASIA
SOCOMEC CHINA
CN - 200030 P.R.C Shanghai - China
Tel. +86 (0)21 5298 9555 - Fax +86 (0)21 6228 3468
info.scp.cn@socomec.com

SOUTH EAST ASIA & PACIFIC
SOCOMEC SWITCHING AND PROTECTION
UBI TECHPARK - 408569 Singapore
Tel. +65 65 07 94 90 - Fax +65 65 47 86 93
info.scp.sg@socomec.com

SOUTH ASIA
SOCOMEC INDIA
122001 Gurgaon, Haryana - India
Tel. +91 124 4562 700 - Fax +91 124 4562 738
info.scp.in@socomec.com

IN MIDDLE EAST

UNITED ARAB EMIRATES
SOCOMEC Middle East
Dubai, U.A.E.
Tel. +971 (0) 4 29 98 441 - Fax +971 (0)4 29 98 449
info.scp.ae@socomec.com

IN NORTH AMERICA

USA, CANADA & MEXICO
SOCOMEC Inc
Cambridge, MA 02142 USA
Tel. +1 617 245 0447 - Fax +1 617 245 0437
info.scp.us@socomec.com

HEAD OFFICE

SOCOMEC GROUP
S.A. SOCOMEC capital 11 303 400 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse
F-67235 Benfeld Cedex - FRANCE

INTERNATIONAL SALES DEPARTMENT

SOCOMEC
1, rue de Westhouse - B.P. 60010
F - 67235 Benfeld Cedex - FRANCE
Tel. +33 (0)3 88 57 41 41 - Fax +33 (0)3 88 74 08 00
info.scp.isd@socomec.com

www.socomec.com

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