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General Catalogue

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- INSTALLATION AND CONTROL
- MEASUREMENT AND ENERGY
- CLIMATE AND COMFORT
- STREET LIGHTNING
- INSTRUMENTATION

ENERGIA INTELIGENTE ORBIS

ENGLISH

INSTALLATION AND CONTROL

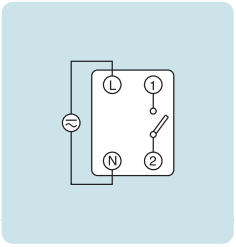
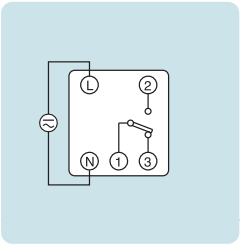
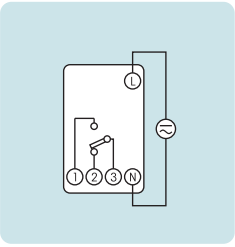
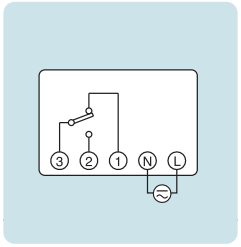
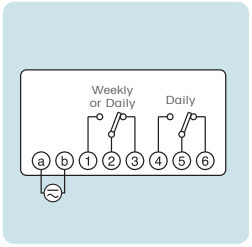
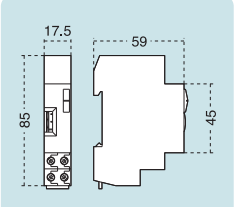
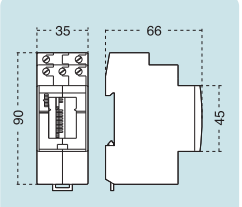
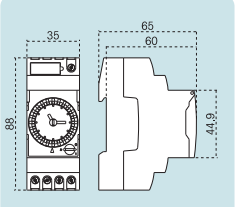
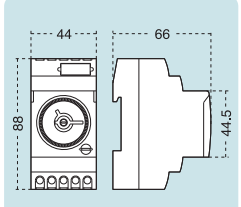
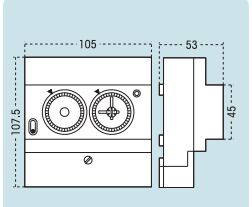
MODULAR TIME SWITCHES

UNO	INCA DUO	DUO	SUPRA	SUPRA (2 SPHERES)
				

Description

Modular time switches to timer circuits such as illumination, acclimatization, pumps, etc. DIN rail mounting.

Features

	UNO	INCA DUO	DUO	SUPRA	SUPRA (2 SPHERES)
Battery back-up	**D:** No reserve **QRD:** 150 hours minimum Interchangeable battery **QRS:** 100 hours minimum	**D:** No reserve **QRD and QRS:** 100 hours minimum	**D:** No reserve **QRD / QRS:** 150 hours minimum Interchangeable battery	**D:** No reserve **QRD and QRS:** 150 hours minimum Interchangeable battery	**QRDD and QRDS:** 100 hours minimum
Dial / minimum switching time	**D and QRD:** Daily/15 min.. **QRS:** Weekly 2 hours	**D and QRD:** Daily /15 min. **QRS**: Weekly 2 hours	**D / QRD:** Daily / 30 min. **QRS:** Weekly / 3,5 hours	**D / QRD:** Daily /15 min. **QRS:** Weekly 2 hours	**QRDD:** Daily-Daily/30 min.-30 min. **QRSD:** Weekly-Daily / 4 hours 30 min.
Rated voltage	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c.	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c.	120 or 230 Va.c. 12, 24 or 48 Va.c. or c.c.	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c.	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c.
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Switching capacity	16 (4) A / 250 Va.c.	16 (4) A / 250 Va.c.	16 (4) A / 250 Va.c.	16 (4) A / 250 Va.c.	2 x 16 (4) A / 250 Va.c.
Contact	Single	Changeover	Changeover	Changeover	2 x Changeover
Maxim. recommended load					
Incandescent	3000 W	3000 W	3000 W	3000 W	3000 W
Fluorescent	500 W	500 W	1200 W	1200 W	500 W
Low voltage halogen	2000 VA	2250 VA	2000 VA	2000 VA	2250 VA
Halogen (230 Va.c.)	3000 W	3000 W	3000 W	2000 W	3000 W
Low consumption lamps	500 W	500 W	900 W	900 W	500 W
LED	500 W	-	1000 W	1000 W	-
Operating temperature	-10°C to +45°C	-10°C to +45°C	-10°C a +50°C	-10°C to +50°C	-10°C to +50°C
Installation	DIN rail	DIN rail	DIN Rail	DIN rail	DIN rail
Type of protection	IP 20	IP 20	IP 20	IP 20	IP 20
Connection diagram					
Dimensions					
	Weight: 88 gr.	**Weight:** 117 gr.	**Weight:** 106 gr.	**Weight:** 133 gr.	**Weight:** 323 gr.

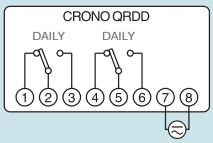
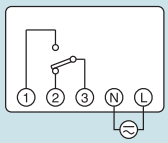
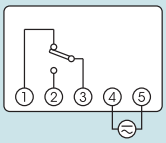
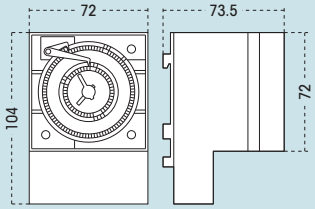
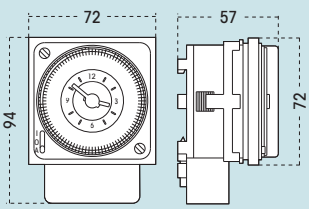
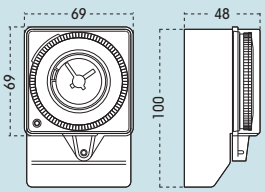
ANALOG TIME SWITCHES

	CRONO	ALPHA	MINI / MINI T
			

Description

Analog time switches to timer circuits such as illumination, acclimatization, pumps, etc. DIN rail, Surface or Panel mounting.

Features

	CRONO	ALPHA	MINI / MINI T
Battery back-up	**QRD / QRDD / QRSD:** 100 hours minimum Other models without battery back-up on request.	**D / S:** No reserve **QRD / QRS:** 100 hours minimum	**D:** No reserve **QRD and QRS:** 100 hours minimum
Dial / minimum switching time	**QRD:** Daily-15 min. **QRDD**: 2Daily-15 min. / 30 min. **QRSD**: Weekly-2 hours / Daily-30 min.	**D:** Daily / 15 min. **S:** Weekly / 2 hours **QRD:** Daily / 15 min. **QRS:** Weekly / 2 hours	**D:** Daily /15 min. **QRS:** Weekly / 2 hours
Rated voltage	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c.	**D / S:** 120 or 230 Va.c. **QRD/QRS:** 120 or 230 Va.c. 6, 12, 24 or 48 Va.c. / d.c.	**D:** 120 or 230 Va.c. **QRD/QRS:** 120 or 230 Va.c. 6, 12, 24 or 48 Va.c. / d.c.
Frequency	50 / 60 Hz	**D / S:** 50 or 60 Hz **QRD and QRS:** 45/60 Hz	**D:** 50 or 60 Hz **QRD and QRS:** 50/60 Hz
Switching capacity	**QRD:** 16(4) A / 250 V; **QRDD and QRSD:** 2x16(4) A / 250 Va.c.	16 (4) A / 250 Va.c.	16 (4) A / 250 Va.c.
Contact	**QRD:** 1 Changeover **QRDD and QRSD:** 2 Changeovers	Changeover	Changeover
Maxim. recommended load			
Incandescent	3000 W	2000 W	3000 W
Fluorescent	500 W	1200 W	1200 W
Low voltage halogen	2250 VA	2000 VA	2000 VA
Halogen (230 Va.c.)	3000 W	2000 W	3000 W
Low consumption lamps	500 W	900 W	900 W
LED	-	1000W	1000 W
Operating temperature	-10ºC to +50ºC	-10ºC to +50ºC	**D:** 0ºC to +55ºC; **QRD / QRS:** -10ºC to +45ºC
Installation	Surface - Panel mounting (Faston connexions) DIN rail	Surface - Flush mounting (Faston connexions) DIN rail	**MINI:** DIN rail - Surface (sealable terminals). **MINI T:** DIN rail - Surface - Flush mounting (Faston connex.).
Protection type	IP 20	IP 20	IP 20
Connection diagram	 Check for other models		
Dimensions	 **Weight:** 280/313 gr.	 **Weight:** 202/216 gr.	**MINI T :** Flush mounting. Front 72 x 72 mm  **Weight:** 199/206 gr.

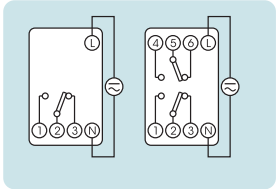
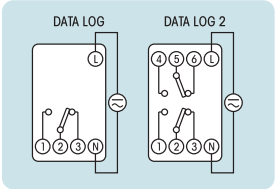
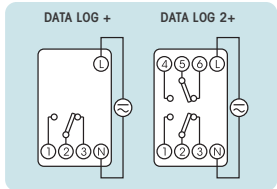
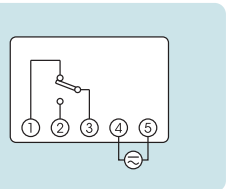
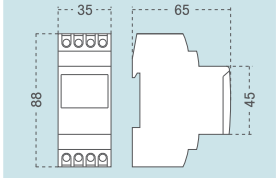
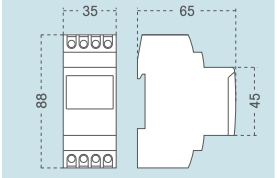
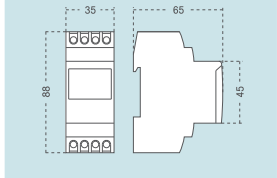
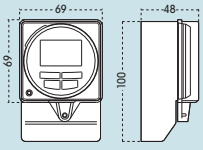
DIGITAL TIME SWITCHES

	DATA MICRO + DATA MICRO 2+	DATA LOG DATA LOG 2	DATA LOG + DATA LOG 2 +	MINI LOG MINI T LOG
				

Description

Modular time switches to timing electric circuits with programs by seconds, pulses, cycles, holiday period, running hour counter, etc. DIN, surface and panel mounting. The DATA LOG + series incorporates a large display with a backlight, interchangeable battery and remote programming via DATA REMOTE CONTROL.

Features

	DATA MICRO + DATA MICRO 2+	DATA LOG DATA LOG 2	DATA LOG + DATA LOG 2 +	MINI LOG MINI T LOG
Battery back-up	4 years without power supply	5 years without power supply	5 years without power supply Interchangeable battery	5 years without power supply
Memory spaces	32 (programming by icon menus)	50 (programming by text menus)	70 (programming by text menus)	50 (programming by text menus)
Minimum switching time	On/Off program: 1 min. Pulse program: 1s	On/Off program: 1 min. Pulse program: 1s	On/Off program: 1 min. Pulse program: 1s	On/Off program: 1 min. Pulse program: 1s
Programme	Daily – Weekly. Pulse program (from 1 to 59 seconds), holidays and winter/summer automatic change.	Daily – Weekly. Pulse program (from 1 to 59 seconds), cycles, holidays and winter/summer automatic change, random and running hour counter.	Daily – Weekly. Pulse program (from 1 to 59 seconds), cycles, holidays and winter/summer automatic change, random and running hour counter.	Daily – Weekly. Pulse program (from 1 to 59 seconds), cycles, holidays and winter/summer automatic change, random and running hour counter.
Rated voltage	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c. 50-60 Hz	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c. 50-60 Hz	120 or 230 Va.c. 12, 24 or 48 Va.c. / c.c 50-60 Hz	120 or 230 Va.c. 12, 24 or 48 Va.c. / d.c. 50-60 Hz
Contact	**DATA MICRO +:** Changeover **DATA MICRO 2+:** 2 x Changeover	**DATA LOG:** Changeover **DATA LOG 2:** 2 x Changeover	**DATA LOG+:** Changeover **DATA LOG 2+:** 2 x Changeover	Changeover
Maximum recommended load				
Incandescent	3000 W	3000 W	3000 W	1000 W
Fluorescent	1200 W	1200 W	1200 W	By means of contactor
Low voltage halogen	2000 VA	2000 VA	2000 VA	500 VA
Halogen (230 Va.c.)	3000 W	3000 W	3000 W	1000 W
Low consumption lamps	400 W	400 W	400 W	By means of contactor
LED	600 W	600 W	600W	-
Operating temperature	-10ºC to +45ºC	-10ºC to +45ºC	-10ºC to +45ºC	-10ºC to +45ºC
Installation	DIN Rail	DIN Rail	DIN Rail	**MINI LOG:** DIN rail - Surface (sealable terminals). **MINI T LOG:** DIN rail - Surface - Flush mounting (Faston connexions).
Protection type	IP 20	IP 20	IP 20	IP 20 / IP 51
Connection diagram				
Dimensions	 **Weight:** 135/160 gr.	 **Weight:** 137/159 gr.	 **Weight:** 147/166 gr.	**MINI T LOG:** Flush mounting Front 72 x 72 mm  **Weight:** 206/205 gr.

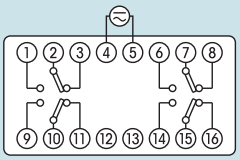
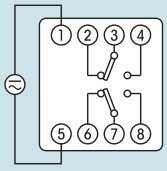
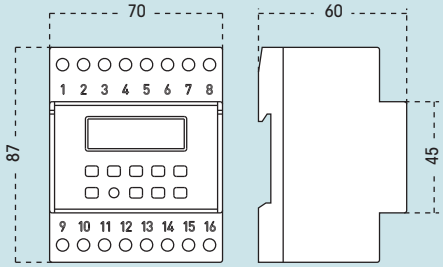
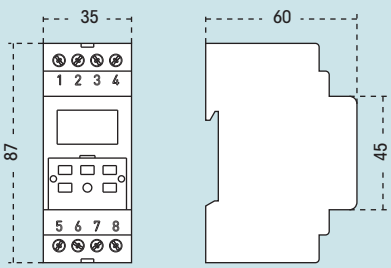
DIGITAL TIME SWITCHES

	DATA MULTI ANUAL	DATA ANUAL
		

Description

Digital time switches with daily, weekly, monthly and annual programming.
DIN rail mounting

Features

	DATA MULTI ANUAL	DATA ANUAL
Battery back-up	5 years without power supply	5 years without power supply
Memory spaces	100	50
Minimum switching time	ON/OFF Program: 1 min Pulse Program: 1 s	ON/OFF Program: 1 min Pulse Program: 1 s
Programming	Daily-weekly-monthly and annual. Configurable pulse program (1 to 59 sec.)	Daily-weekly-monthly and annual. Configurable pulse program (1 to 59 sec.)
Rated voltage	230 Va.c.	230 Va.c.
Switching capacity	4 x 16(10) A / 250 Va.c.	2 x 16(10) A / 250 Va.c.
Maximum recommended load Incandescent Non-compensated fluorescent	 1500 W 600 W	 1500 W 600 W
Own consumption	3 VA approx.	8 VA approx.
Operating temperature	0ºC to +50ºC	0ºC to +50ºC
Installation	DIN Rail	DIN Rail
Protection type	IP 20	IP 20
Connection diagram		
Dimensions	 **Weight:** 394 gr.	 **Weight:** 196 gr.

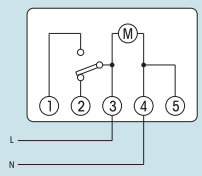
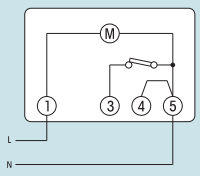
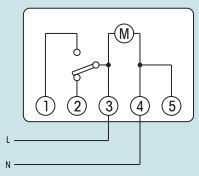
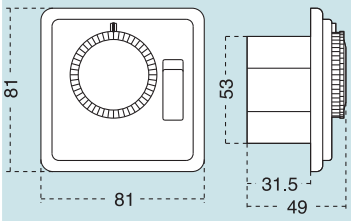
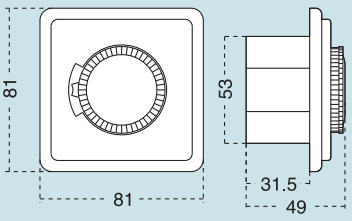
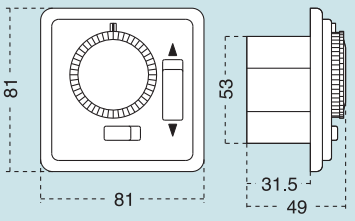
CONTROL UNITS - FLUSH MOUNTING

	ILUMATIC 248	ILUMATIC 348	ROLLMATIC
			

Description

ANALOG devices to timing circuits such as lighting, blinds, etc. They are easy to install and programmable by means of pins.

Features

	ILUMATIC 248	ILUMATIC 348	ROLLMATIC
Rated voltage	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz
Switching capacity	10(4) A / 230 Va.c.	10(4) A / 230 Va.c.	10(2) A / 230 Va.c.
Own consumption	1, 6 VA	1, 6 VA	1, 6 VA
Maximum recommended load	2200 W	2200 W	2200 W
Manual control	ON - OFF - Automatic	ON - OFF - Automatic	Up - Stop - Down Automatic - OFF - Manual
Action	Programmable time switch	Programmable time switch	Programmable time switch for awnings, blinds, etc.
Sphere	**D (daily):** 24 hours **S (weekly):** 7 days	**D (daily):** 24 hours **S (weekly):** 7 days	**D (daily):** 24 hours **S (weekly):** 7 days
Minimum time operation	**D (daily):** 30 min. **S (weekly):** 1 h. 45 min.	**D (daily):** 30 min. **S (weekly):** 1 h. 45 min.	**D (daily):** 30 min. **S (weekly):** 1 h. 45 min.
Installation	Mechanism box	Mechanism box	Mechanism box
Protection type	IP 20	IP 20	IP 20
Connexion diagram			
Dimensions	 **Weight:** 135 gr.	 **Weight:** 135 gr.	 **Weight:** 151 gr.

CONTROL UNITS - FLUSH MOUNTING

ALARM CLOCK	THERMOSTAT	CRONOTHERMOSTAT	BLINDS CONTROLLER	TIME SWITCH	ASTRONOMIC SWITCH
DECO-TEMPO	**DECO-TERMO**	**DECO-CRONO**	**DECO-ROLL**	**DECO-DATA**	**DECO-ASTRO**

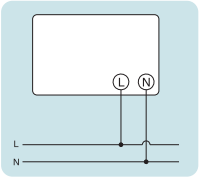
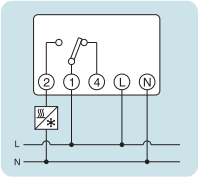
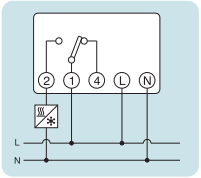
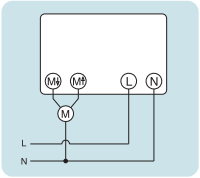
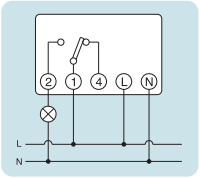
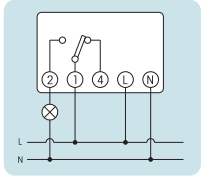
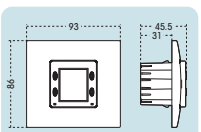
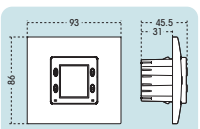
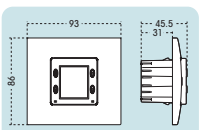
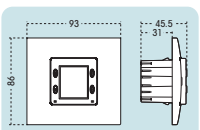
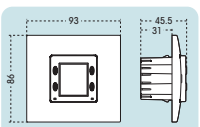
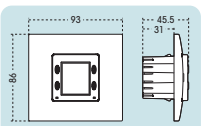





Description

Build in devices for mechanism box and digital programming. Different models: alarm clock, thermostat, cronothermostat, time switch and blind controller. Time switch to control any type of electrical circuit and time switch.

Features

	DECO-TEMPO	DECO-TERMO	DECO-CRONO	DECO-ROLL	DECO-DATA	DECO-ASTRO
Nominal voltage	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz
Switching capacity	-	8 (2) A / 250 Va.c.	8 (2) A / 250 Va.c.	2x 5 (1) A / 250 Va.c.	8 (2) A / 250 Va.c.	8 (2) A / 250 Va.c.
Battery backup	24 h. by means of super condenser	24 h. By means of super condenser	24 h. By means of super condenser	24 h. By means of super condenser	24 h. By means of super condenser	24 h. By means of super condenser
Operating temperature	0 ºC to + 40 ºC	0 ºC to + 40 ºC	0 ºC to + 40 ºC	0 ºC to + 40 ºC	0 ºC to + 40 ºC	0 ºC to + 40 ºC
Accuracy	1sg/24h at 23º C Quartz clock	1sg/24h at 23º C Quartz clock	1sg/24h at 23º C Quartz clock	1sg/24h at 23º C Quartz clock	1sg/24h at 23º C Quartz clock	1s/24h at 23º C Quartz clock
Maximum recommended load						
Incandescent	-	2000 W	2000 W	-	2000 W	2000 W
Fluorescent	-	1000 W	1000 W	-	1000 W	1000 W
Low voltage halogen	-	1000 VA	1000 VA	-	1000 VA	1000 VA
Halogen (230 Va.c.)	-	2000 W	2000 W	-	2000 W	2000 W
Low consumption lamps	-	400 W	400 W	-	400 W	400 W
LED	-	600 W	600 W	-	600 W	600 W
Protection type	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Installation	Universal mechanism box	Universal mechanism box	Universal mechanism box	Universal mechanism box	Universal mechanism box	Universal mechanism box
Features	Date and time information. Alarm clock for domestic or hotel applications.	Heating and air conditioning control with two programmable temperature levels.	Air conditioning and heating systems control, two program temperatures.	Device for arising and lowering the blinds.	Automatization of circuits such as lighting, irrigation, etc.	On and off control for home lighting circuits in line with daylight hours.
Functions	Two alarms with or without rearmament, countdown. Holiday period. Backlight contrast adjustable. Languages: Spanish, English and Portuguese.	Thermostat function. Comfort, power saver and anti ice temperatures. Air conditioning or heating operation. Holiday program. Languages: Spanish, English and Portuguese	Comfort, power saver and anti ice temperatures. 8 programs + thermostat. Holiday program. Languages: Spanish, English and Portuguese.	Automatic or manual control by pulses or directly. Up to 20 manoeuvres. Randomly manoeuvres to presence pretend and holiday program. Languages: Spanish, English and Portuguese.	Automatic or manual control. Up to 20 manoeuvres. Minimum operation time 20 seconds, Holiday and randomly programming. Languages: Spanish, English and Portuguese.	Programming by city with correction. Up to 20 operations. Minimum time delay 1 s. Winter-summer configuration, off mode and contrast. Languages: Spanish, English and Portuguese.
Connexions						
Dimensions	 **Weight:** 146 gr.	 **Weight:** 162 gr.	 **Weight:** 162 gr.	 **Weight:** 149 gr.	 **Weight:** 162 gr.	 **Weight:** 152 gr.

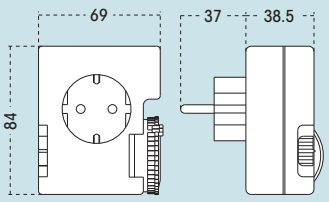
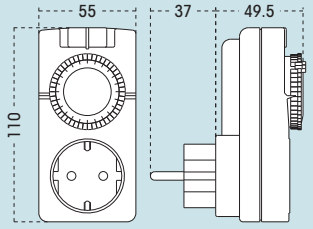
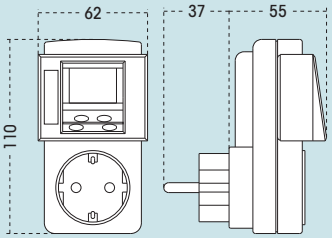
PLUG-IN TIMERS

	CONTROL	DOMO / DOMO INTEMPERIE	TEMPO +
			

Description

Timer switch for plug in devices, are useful in offices or domestic applications. Analogue, digital and even water prove models.

Features

	CONTROL	DOMO / DOMO INTEMPERIE	TEMPO +
Nominal voltage	230 Va.c. / 50Hz.	230 Va.c. / 50Hz.	120 or 230 Va.c. / 24 or 48 Va.c. /d.c. / 50-60 Hz
Switching capacity	16(4) A 230 Va.c.	16(4) A 230 Va.c.	16(10) A / 230 Va.c. cos φ = 1
Battery backup	Without battery back up	Without battery back up	1 year without battery (Lithium CR2032)
Contact	-	-	$AgSnO_2$ Changeover
Own consumption	1, 6 VA (1, 5 W approx.)	1, 6 VA (1, 5 W approx.)	6 VA (1W approx)
Memory spaces	-	-	32
Maximum recommended load			
Incandescent	3500 W	3500 W	3000 W
Fluorescents	Not suitable	Not suitable	180 W
Low voltage halogen	2250 VA	2250 VA	1000 VA
Halogen (230 Va.c.)	3500 W	3500 W	2500 W
Low consumption lamps	No suitable	No suitable	200 W
Accuracy	Depends on the net frequency	Depends on the net frequency	< ± 1 s/day at 23 °C
Programming	Lateral sphere **D T15 - D T30:** Daily **S:** Weekly	Front sphere **D T15 - D T30:** Daily **S:** Weekly **M-60 - M 150 - M 900:** Countdown	Digital Pulse programming (1 to 59 s), cycles, holiday, change s/w.
Minimum operation time	**D T15:** 15 min. **D T30:** 30 min. **S:** 1 h.-45 min.	**D T15:** 15 min. **D T30:** 30 min. **S:** 1 h. 45 min. **M 60:** 0-60 min. **M 150:** 0-150 min. **M 900:** 0-900 min.	1 second
Manual control	Automatic - Off - On	Automatic - Off - On	Automatic-Off-On
Model for outside	No	Domo Intemperie D T15, D T30 and S	No
Installation	Schuko 4, 8 mm socket type	Schuko 4, 8 mm socket type	Schuko 4, 8 mm socket type
Protection type	IP 20	IP 20 (IP 24 outdoor models)	IP 20
Operating temperature	0°C to +60°C	0°C to +60°C	-10 °C to +45 °C
Features	Children protection	Children protection	Children protection
Dimensions			
	Weight: 173 gr.	**Weight:** 184 gr.	**Weight:** 192 gr.

TOKENS OR COINS TIME COUNTER

	CTM	CTM ELECT. BÁSICO	CTM ELECTRÓNICO
			

Description

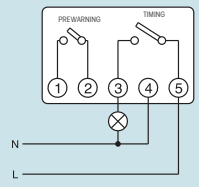
Timing of circuits by coins or tokens. Sport courts lighting in residences, washing machines in camp grounds, marinas, etc

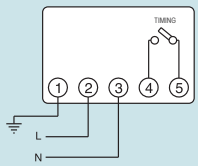
Features

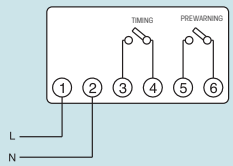
	CTM	CTM ELECT. BÁSICO	CTM ELECTRÓNICO
Rated voltage	24, 120 or 230 Va.c. / 50Hz	12, 24, 48, 120 or 230 Va.c. / 45-60Hz	12, 24, 48, 120 or 230 Va.c. / 45-60Hz
Switching capacity	6(2) A / 250 Va.c.	10(2) A / 250 Va.c.	16(4) A / 250 Va.c.
Own consumption	2, 2 VA	5 VA	5 VA
Temporization memory	-	1 year	10 minutes
Operating accuracy	Depends of mains frequency	±0, 2%	±0, 2%
Operating temperature	-10 ºC to +45 ºC	-10 ºC to +45 ºC	-20 ºC to +55 ºC
Temporization per coin or tokens	1', 2', 3', 5', 10', 15', 30', 60', 90' or 120' (on demand)	Programmable from 1 min. to 150 hours	Programmable from 1 min. to 150 hours
Special temporization	No	No	Yes
Time ending advice	Optional	Yes	Yes
Protection type	IP 20	IP 20	IP 20
Features	• Electromechanical time counter, fixed timing at the factory. • Coins or tokens operated. • Possibility of timing from 1 minute up to 120 minutes. • With our without pre-warning of time ending	• Electronic time counter. • Coins or tokens operated. • 1 digit display which counts up to 9 tokens or coins. • Pre warning of time ending by means of display flashing 1 minute before it finishes.	• Electronic time counter. • Coins or tokens operated. • Independent lock, one for the Electronic and other for the coin box. • Pre warning by means of relay (**short:** 30 seconds before it finishes for 10 seconds; **large:** 4 minutes before it finishes for 10 seconds). • It stores up to 99 tokens or coins in memory.

To install in wet environment such as camp grounds, changing rooms, etc. a 24V transformer is necessary (on demand in separated box).

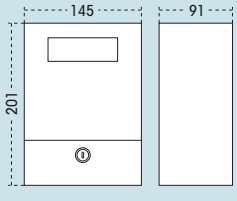
Connection diagram



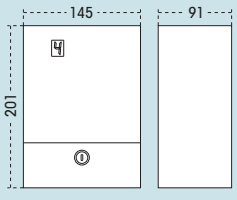




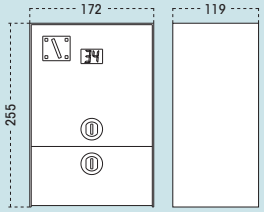
Dimensions



Weight: 1500 gr.



Weight: 1879 gr.



Weight: 3214 gr.

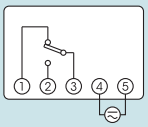
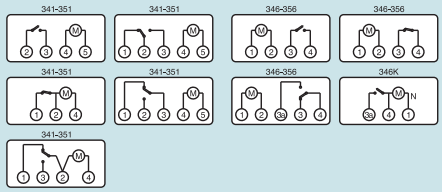
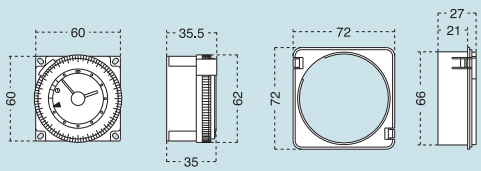
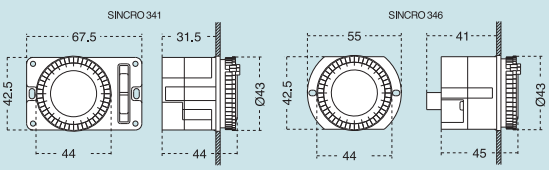
INDUSTRIAL TIME SWITCHES

	MODUL	SINCRO 341/ 351 SINCRO 346 / 356
		

Description

	Timer switch for industrial applications such as machinery, heating or air conditioning machines, etc. Personalized models are available with different mounting possibilities.	Designed for integration with any kind of equipment. Daily, weekly and countdown versions with different configuration, mounting and connexion possibilities. Different colours available on request.

Features

Power supply	120 Va.c. or 230 Va.c.	110 Va.c. or 230 Va.c.
Frequency	MODUL D, MODUL S: 50 or 60 Hz. MODUL QRD, MODUL QRS: 50/60 Hz	50 or 60 Hz.
Switching capacity	16(4) A / 250 Va.c.	16(4) A / 250 Va.c. 21(8) A / 250 Va.c.
Own consumption	1.8 VA	1.8 VA
Battery back-up	MODUL D, MODUL S: No reserve MODUL QRD, MODUL QRS: 100 hours	Without reserve
Dial / minimum switching time	MODUL D, MODUL QRD: Daily/15 min. MODUL S, MODUL QRS: Weekly/2 hours.	SINCRO 341 T15-346 T15: Daily/15 min. SINCRO 341 T30-346 T30: Daily/30 min. SINCRO 351-356: Weekly/105 min. SINCRO 341 K60-346 K60: Countdown/60 min. SINCRO 341 K150-346 K150: Countdown/150 min. SINCRO 341 K900-346 K900: Countdown/900 min.
Manual control	With (ON-Automatic-OFF) or without manual control	SINCRO 341/351: ON-OFF-Automatic. SINCRO 346/356: With (ON-OFF-Automatic) or without manual control
Clock hands	With or without	Without
Operating temperature	D and S: from 0ºC to +55ºC QRD and QRS: from -10ºC to +45ºC	from 0ºC to +85ºC
Connection diagram		
Dimensions	 **Weight:** 97 gr.	 **Weight:** 88 gr.

INDUSTRIAL TIME SWITCHES

MODUL LOG

DH-1 / DH-3

Description

Digital time switch for industrial applications. It has a switched contact with daily or weekly programming. Pulse programme (from 1 to 59 s.) cycles, s/w change, random and operating hours meter. Simple programming by text menu.

Timer to control the defrosting operation in cold rooms. Allows disconnection of compressor and ventilator and activetion of the heating resistance. Small size adaptable at any installation, faston connection and different time delays available with synchronous motor.

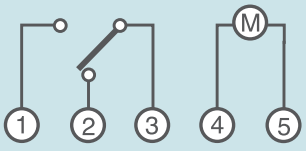
Features

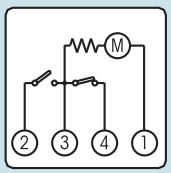
	MODUL LOG	DH-1 / DH-3
Power supply	120 or 230 Va.c. 12, 24 or 48 Va.c. / Vc.c.	120, 208 or 240 Va.c.
Frequency	50-60 Hz	50-60 Hz
Switching capacity	16(4)A / 250 Va.c.	-
Own consumption	6 VA	-
Battery Back-up	5 years	-
Dial/Minimum switching time	Daily/Weekly. ON/OFF Program: 1 min. Pulse Program: 1 s	-
Manual control	Offer manual and permanent drive	-
Hourly index	Display LCD	-
Operating temperature	-10°C to +45°C	Ambient temperature
Models	-	

	Time between cycles		Time Defrost	
	50 Hz	60 Hz	50 Hz	60 Hz
DHD1-420 / DHD3-420	4h ±3'	3h 20' ±3'	20' ±3'	16' 40'' ±3'
DHD1-621 / DHD3-621	6h ±3'	5h ±3'	21' ±3'	17' 30'' ±3'
DHD1-625 / DHD3-625	6h ±3'	5h ±3'	25' ±3'	20' 50'' ±3'
DHD1-803 / DHD3-803	8h ±3'	6h 40' ±3'	3' ±30'	2' 30'' ±30''
DHD1-807 / DHD3-807	8h ±3'	6h 40' ±3'	7' ±3'	5' 50'' ±3'
DHD1-825 / DHD3-825	8h ±3'	6h 40' ±3'	25' ±3'	20' 50'' ±3'
DHD1-830 / DHD3-830	8h ±3'	6h 40' ±3'	30' ±3'	25' ±3'
DHD1-1025 / DHD3-1025	10h ±3'	8h 20' ±3'	25' ±3'	20' 50'' ±3'
DHD1-1221 / DHD3-1221	12h ±3'	10h ±3'	21' ±3'	17' 30'' ±3'
DHD1-2496 / DHD3-2496	24h ±3'	20h ±3'	96' ±3'	80' ±3'

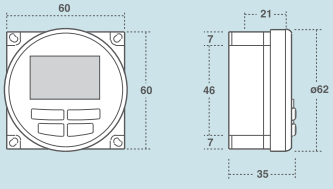
Other time delays on request

Connection diagram

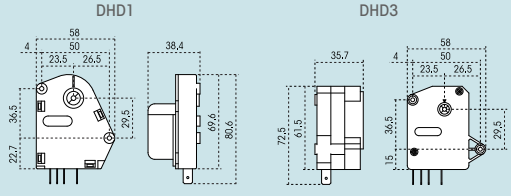




Dimensions



Weight: 119 gr.



Weight: 62 gr.

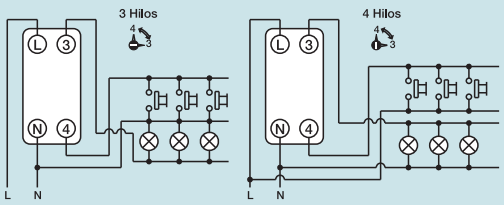
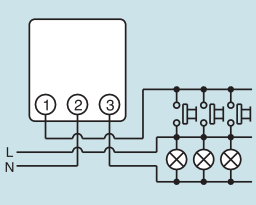
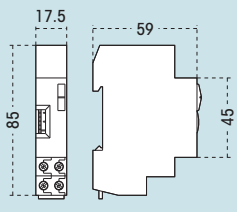
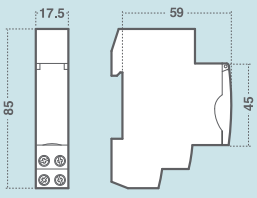
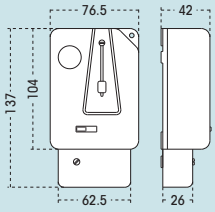
STAIRCASE TIME SWITCHES

	T-16G	T-22	T-11 20A
			

Description

Timing of staircase light circuits in seconds or minutes, in offices and home buildings, community courtyards, etc. DIN rail and surface mounting.

Features

	T-16G	T-22	T-11 20A
Resettable	Yes	Yes	Yes
Manual switch	ON - Automatic	ON – Automatic	ON - Off – Automatic
Rated voltage	120 or 230 Va.c.	120 or 230 Va.c.	120 or 230 Va.c.
Switching capacity	10 A / 230 Va.c.	16 (4) A / 230 Va.c.	20 A / 230 Va.c.
Luminous push buttons	50 mA max.	50 mA max.	50 mA max.
Maxim. recommended load			
Incandescent	2000 W	3000 W	4000 W
Compensated fluorescent	800 W	1200 W	1100 W 139 µF
Low voltage halogen	1200 VA	2000 VA	2000 VA
Halogen (230 Va.c.)	2000 W	3000 W	4000 W
Low consumption lamps	700 W	900 W	800 W
LED	750 W	1000 W	-
Temporization	3 min. to 30 min.	45 s to 7 min.	1 to 3 min.
Operating temperature	-10ºC to +50ºC	-10ºC to +50ºC	-10ºC to +60ºC
Installation	3 or 4 wires	3 or 4 wires	3 wires
Mounting	DIN Rail	DIN Rail	Surface
Protection type	IP 20	IP 20	IP 20
Connection diagram			
Dimensions	 **Weight:** 90 gr.	 **Weight:** 93 gr.	 **Weight:** 254 gr.

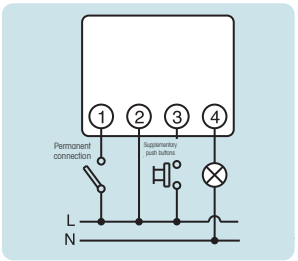
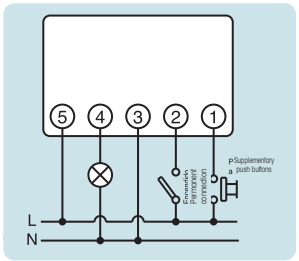
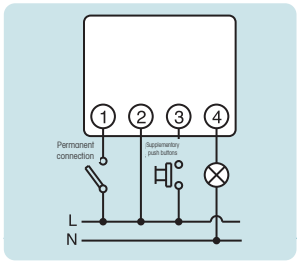
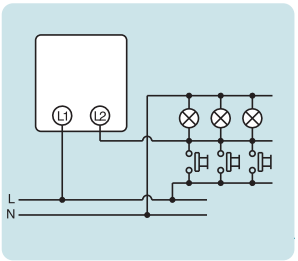
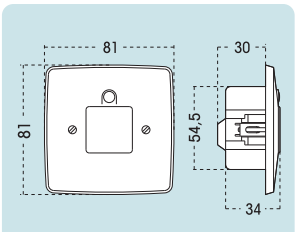
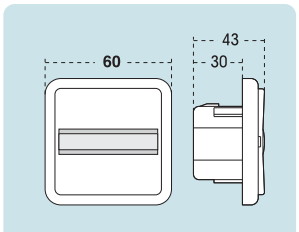
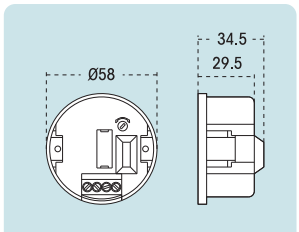
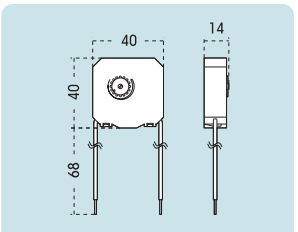
STAIRCASE TIME SWITCHES

PULSALUZ	PULSAMAT	ORBITEMP	MICROTEMP
			

Description

Timing of staircase light circuits in seconds or minutes, in offices and home buildings, community courtyard, etc. Mechanism or junction box mounting.

Features

	PULSALUZ	PULSAMAT	ORBITEMP	MICROTEMP
Resettable	Yes	Yes	Yes	Yes
Rated voltage	120 or 230 Va.c. / 45-60 Hz	230 Va.c. / 50 Hz	120 or 230 Va.c. /45–60 Hz	230 Va.c. / 50-60 Hz
Manual switch	1, 5 A / 230 Va.c.	3 A / 230 Va.c. ~ cos ? =1	1, 5 A / 230 Va.c.	-
Luminous push buttons	6 mA / 230 V; 3mA / 120 V	6 mA max.	6 mA / 230 V; 3mA / 120 V	Unlimited
Maxim. recommended load				
Incandescent 230 V	25 W - 300 W	700 W	25 W - 300 W	25 W - 400 W
Incandescent 120 V	25 W - 150 W	-	25 W - 150 W	25 W - 200 W
Compensated fluorescent	36 W - 100 W	500 W	36 W - 100 W	36 W - 100 W
Low voltage halogen	50 VA - 150 VA	500 VA	50 VA - 150 VA	50 VA - 150 VA
Halogen (230 Va.c.)	18 W - 300 W	700 W	18 W - 300 W	18 W - 400 W
Low consumption lamps	21 W - 100 W	500 W	21 W - 100 W	21 W - 100 W
LED	Not suitable	500 W	Not suitable	Not suitable
Temporization	30 s to 4 min.	30 s to 10 min.	30 s to 4 min.	30 s to 10 min.
Operating temperature	-10ºC to +50ºC	-10ºC to +50ºC	-10ºC to +50ºC	-10ºC to +50ºC
Installation	2 wires	3 wires	2 wires	2 wires
Mounting	Into mechanism box	Into mechanism box	Into mechanism box	Behind a push-button or inside junction box.
Protection type	IP 20	IP 20	IP 20	IP 20
Connection diagram				
Dimensions	 **Weight:** 90 gr.	 **Weight:** 62 gr.	 **Weight:** 62 gr.	 **Weight:** 36 gr.

MOVEMENT SENSOR SWITCHES CLASSIFICATION

WALL

		ISIMAT	ISIMAT +	MULTIMAT	PROXIMAT	ORBIMAT	ECOMAT
Wall	Surface	Until 140º	★★	★★	★★	★★		★
		Until 180º		★★	★★	★★	★★★	★
		Until 200º		★★★	★★★	★★	★★	★
		Until 240º				★★★		★
		Until 270º (*)						★★★
		Internal or external corner			★★★	★★★		★★★
	Into mechanism box					★★★		

(*) In closed spaces (optimum in corridors, halls, etc. No suitable in garages, warehouses, etc.)

CEILING

		DICROMAT MICRO	DICROMAT MINI / DICROMAT 2 MINI	DICROMAT + / 2+ / DICROMAT +CR	CIRCUMAT / CIRCUMAT PRO CR	ECOMAT	MULTIMAT
Ceiling	Built-in	Halls	★★	★★★	★			
		Ø6m Areas	★★★		★★			
		Long corridors, internal and external corners and areas bigger than Ø6m	★		★★★			
	Surface					★★★		★★★
	Hidden over ceiling						★★★	

	Outdoor		Suitable for fluorescent	★	Suitable
	Outdoor under cover		Not suitable for fluorescent	★★	Recommended
	Indoor		Fluorescent By means of contactor	★★★	Highly recommended

MOVEMENT SENSORS SELECTION

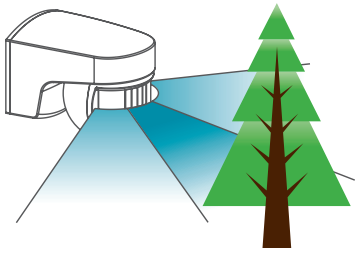
PRODUCT	Angle and Field of Detection	Maximum Load	Timing	Adjustment of Luminosity	Field of Detection Adjustment	Mounting Type	Technology	Type of Installation	Fluorescent and Low Consumption Lamps
ISIMAT +	200° 12m	1000W	3s-30min	2000 lux	-		P.I.R		
ISIMAT	140° 12m	1000W	3s-30min	2000 lux	-		P.I.R		
PROXIMAT	240° 12m	2000W	10s-10min	2000 lux	12m		P.I.R		
MULTIMAT	200° 12m	2000W	3s-30min	2000 lux	-		P.I.R		
ORBIMAT	195° 8m	40-400W	6s-12min	300 lux	8m		P.I.R		
ECOMAT	360° Ø 6m	1000W	3s-30min	2000 lux	6m				
CIRCUMAT	360° Ø 7m	1000W	3s-7min	300 lux	-		P.I.R		
CIRCUMAT PRO CR	360° Ø 30m	2200W	3s-30min	1000 lux	30m		P.I.R		
DICROMAT MICRO	360° Ø 4m	2000W	6s-12min	3000 lux	-		P.I.R		
DICROMAT MINI / 2MINI	360° Ø 7m	2000W	DICR.+: 6s-12min DICR.2+ T_1:6s-12min T_2:10s-30min	5 lux to ∞	7m		P.I.R		
DICROMAT + / 2+ DICROMAT SENSOR + DICROMAT + CR / 2+ CR	360° Ø 7m	2200W	DICR.+/+CR: 1s-10min DICR.2+/ 2+ CR: T_1:1s-10min T_2:10s-15min	DICR.+/+CR: 2000 lux DICR.2+/ 2+ CR: T_1: 2000 lux T_2: 0 lux	7m		P.I.R		

LEGEND

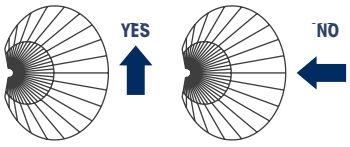
- Angle and field of detection
- Maximum load for incandescent lights (inquire if using other lights)
- Timing
- Adjustment of luminosity
- Field of detection adjustment
- Wall mounting
- Ceiling mounting
- P.I.R Passive infrarred technology
- Radio frequency technology
- Undercover, outdoor installation
- Outdoor installation
- Indoor installation
- Suitable for compensated fluorescent and low consumption
- Non suitable compensated fluorescent and low consumption
- Compensated fluorescent and low consumption via contactor

ADVISE FOR INSTALLATION AND USE

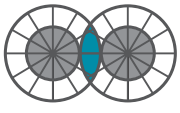
- Avoid high reflective surfaces (mirrors, liquids, marble, etc.), elements with sudden temperature changes (heaters, air conditioning, draughts, etc.) or close to the lights.
- To avoid undesired activetion, some models have detection field limiters.



- The environment temperature where it is installed has a high influence on the field and distance of detection. The higher the temperature is, the less reliable the detection field becomes.
- The detection is performed when crossing the detection beams crosswise.



- To guarantee a better detection capacity when installing two detectors, we recommend superimposing the detection fields.



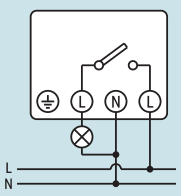
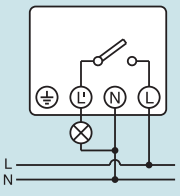
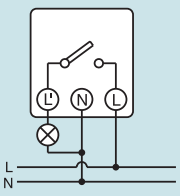
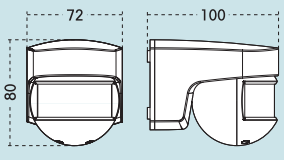
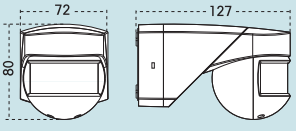
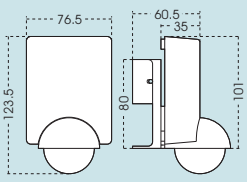
- The waves from ECOMAT can travel through any material, apart from metallic surfaces.

	ISIMAT / ISIMAT+	MULTIMAT	PROXIMAT
			

Description

Presence switches for the automatizing of light circuits in buildings, hotels, residences, offices, etc. Can be installed on the wall (flat, internal or external corner), on the ceiling (surface or built-in) or even hidden in the ceiling. Increased field of detention (up to 30 m. diameter) with CIRCUMAT by CR and possibility of programming by CR remote control.

Features

	ISIMAT / ISIMAT+	MULTIMAT	PROXIMAT
Angle	**ISIMAT:** 140°; **ISIMAT +:** 200°	200°	240°
Detection field	**Forward:** 12 m at 20ºC **Side:** 8 m at 20ºC	**Forward:** 12 m at 20ºC **Side:** 8 m at 20ºC	12 m at 20ºC
Rated voltage	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz
Switching capacity	5 A / 230 Va.c. ~ cos φ = 1	10 A / 230 Va.c. ~ cos φ = 1	10 A / 230 V cos φ = 1
Maxim. recommended load			
Incandescent	1000 W	2000 W	2000 W
Compensated fluorescent	250 W	1000 W	1200 W
Low voltage halogen	500 VA	2000 VA	2000 VA
Halogen (230 Va.c.)	1000 W	2000 W	2000 W
Low consumption lamps	200 W	1000 W	900 W
LED	200 W	1000 W	1000 W
Adjustable parameters	Time and light sensitivity	Time and light sensitivity	Time, light sensitivity and field of detection
Temporization	3 s to 30 min.	3 s to 30 min.	10 s to 10 min. aprox.
Light sensitivity	5 - 30 - 2000 lux.	5 - 30 - 2000 lux.	5 - 30 - 2000 lux.
Operating temperature	-20ºC to +40ºC	-20ºC to +40ºC	-10ºC to +40ºC
Installation	Surface (on wall)	Surface (on wall or roof with connection base)	Surface (on wall: flat, internal or external corner)
Protection type	IP 55	IP 55	IP 45
Connection diagram			
Dimensions	 **Weight:** 195 gr.	 **Weight:** 275 gr.	 **Weight:** 353 gr.

MOVEMENT SENSOR SWITCHES

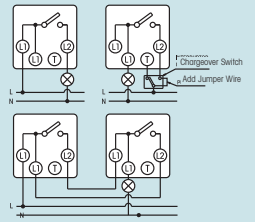
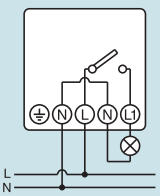
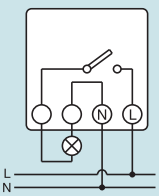
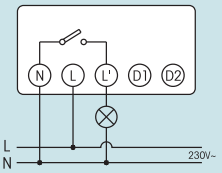
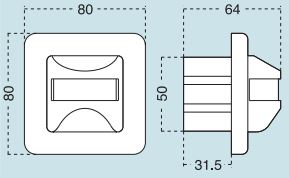
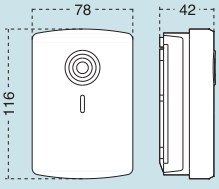
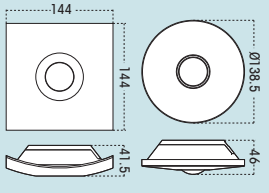
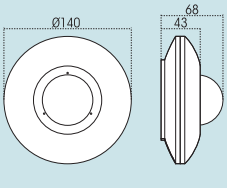
PRESENCE SWITCH

ORBIMAT	ECOMAT	CIRCUMAT	CIRCUMAT PRO CR
			

Description

Presence switches for the automatizing of light circuits in buildings, hotels, residences, offices, etc. Can be installed on the wall (flat, internal or external corner), built in on the mechanism box and on the ceiling (surface or hidden in the false plaster ceiling). Increased field o detention (up to 30 m. diameter) with CIRCUMAT PRO CR and possibility of programming by CR Remote Control.

Features

	ORBIMAT	ECOMAT	CIRCUMAT	CIRCUMAT PRO CR
Angle	195°	270°	360°	360°
Detection field	0 to 8m at 20ºC	1, 7 m height: From 0, 5 to 6 m forward and 3 m side	Up to 7 m diameter to 2, 5 m height at 20ºC	Up to 30 m. of Ø to 3,5 m height Up to 20 m. of Ø to 2,5 m height
Rated voltage	230 Va.c. / 50-60 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50-60 Hz	220 - 240 V c.c. / 50 Hz
Switching capacity	2 A / 230 Va.c. ~ cos φ = 1	6 A / 230 Va.c. ~ cos φ = 1	10 A / 230 Va.c. ~ cos φ = 1	10 A / 230 V cos φ = 1
Maxim. recommended load				
Incandescent	40 - 400 W	1000 W	1000 W	2200W
Compensated fluorescent	Not suitable	250 W	250 W	1200 W
Low voltage halogen	50 - 300 VA	500 VA	500 VA	2000 VA
Halogen (230 Va.c.)	18 - 400 W	1000 W	1000 W	2200 W
Low consumption lamps	Not suitable	200 W	200 W	1000 W
Downlight lamps	Not suitable	By means of contactor	400 W	900 W
LED	Not suitable	-	-	1000 W
Adjustable parameters	Time, light sensitivity and field of detection	Time, light sensitivity and field of detection	Time and light sensitivity	Time, light sensitivity and field of detection
Temporization	From 6 s to 12 min. approx.	From 3 s to 30 min.	From 3 s to 10 min. approx.	From 3 s to 30 min. approx.
Light sensitivity	5 - 300 - ∞ lux.	0, 5 - 2000 lux.	3 - 300 - ∞ lux.	5 to 1000 lux.
Operating temperature	-15ºC to +45ºC	0ºC to +50ºC	-20ºC to +40ºC	-
Installation	Mechanism box	Surface (on wall: flat, internal or external corner). Hidden over false ceiling	On ceiling up to 5 m. maximum height	On ceiling up to 10 m. maximum height
Protection type	IP 20	IP 20	IP 20	IP 44
Connection diagram				
Dimensions	 **Weight:** 175 gr.	 **Weight:** 239 gr.	 **Weight:** 299 gr.	 **Weight:** 190 gr.

MOVEMENT SENSOR SWITCHES

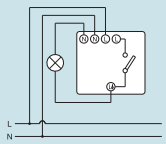
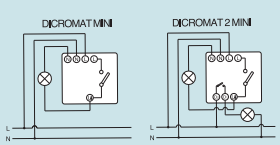
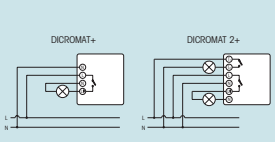
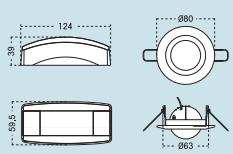
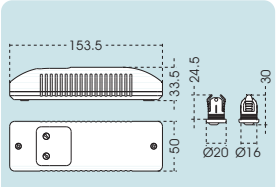
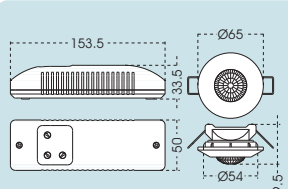
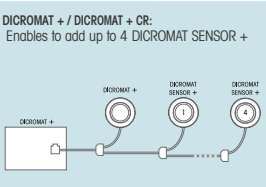
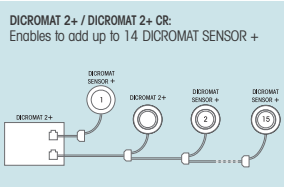
DICROMAT MICRO	DICROMAT MINI DICROMAT 2 MINI	DICROMAT + / DICROMAT 2+ DICROMAT SENSOR +	DICROMAT + CR DICROMAT 2+ CR
			

Description

Presence switches for the automatizing of light circuits in buildings, hotels, residences, offices, etc. Mounted built in on the ceiling.

Manual programming or with remote control RC of the adjustable parameters in RC proximity detectors.

Features

	DICROMAT MICRO	DICROMAT MINI DICROMAT 2 MINI	DICROMAT + / DICROMAT 2+ DICROMAT SENSOR +	DICROMAT + CR DICROMAT 2+ CR
Angle	360º	360º	360º	360º
Detection field	Up to 4 m diameter to 2, 5 m height	Up to 7 m diameter to 2, 5 m height	Up to 7 m diameter to 2, 5 m height	Up to 7 m diameter to 2, 5 m height
Rated voltage	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz	230 Va.c. / 50 Hz
Switching capacity	10 A / 230 Va.c. ~ cos φ = 1	T1: 10 A / 230 Va.c. ~ cos φ = 1 T2: 5 A / 250 Va.c. ~ cos φ = 1	**DICROMAT +:** 10 A / 230 Va.c. ~ φ = 1 **DICROMAT 2+:** 2 x 10 A / 230 Va.c. ~ φ = 1	**DICROMAT + CR:** 10 A / 230 V cos φ = 1 **DICROMAT 2+ CR:** 2x10 A / 230 V cos φ = 1
Maximum recommended load		T_1:		
Incandescent	2000 W	2000 W	2200 W	2200 W
Compensated fluorescent	By means of contactor	By means of contactor	400 W	1200 W
Low voltage halogen	300 VA	300 VA	1000 VA	2000 VA
Halogen (230 Va.c.)	1000 W	1000 W	2200 W	2200 W
Low consumption lamps	By means of contactor	By means of contactor	400 W	1000 W
Downlight lamps	By means of contactor	By means of contactor	By means of contactor	900 W
LED	-	-	-	1000 W
Adjustable parameters	Time and light sensitivity	Time (T1 and T2) and light sensitivity (T1)	Time (T1 and T2), light sensitivity (T1) and field of detection (T1 and T2)	Time (T1 and T2), light sensitivity (T1) and field of detection (T1 and T2)
Temporization	T_1: from 6 s to 12 min.	**DICROMAT MINI:** T_1: from 6 s to 12 min. **DICROMAT 2 MINI:** T_1:from 6 s to 12 min. T_2: from 10 s to 30 min.	**DICROMAT +:** T_1: from 1 s to 10 min. **DICROMAT 2+:** T_1: from 1 s to 10 min. T_2: from 10 s to 15 min.	**DICROMAT +CR:** T_1: from 1 s to 10 min. **DICROMAT 2+CR:** T_1: from 1 s to 10 min. T_2: from 10 s to 15 min.
Light sensitivity	Adjustable from 5 Lux. Up to ∞	Adjustable from 5 Lux. to ∞	2 - 2000 lux.	2 - 2000 lux.
Operating temperature	-10ºC to +45ºC	-10ºC to +45ºC	-10ºC to +45ºC	-10ºC to +45ºC
Protection type	IP 20	IP 20	IP 20	IP 20
Connection diagram				
Dimensions	 **Weight:** 193 gr.	 **Weight :** Consult/255 gr.	 **Weight :** 317/449/293 gr.	 **Weight :** 277/Consult/62 gr.

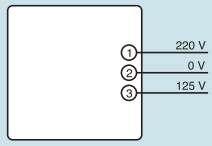
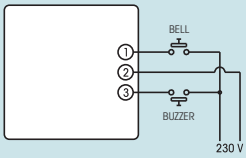
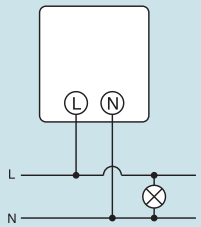
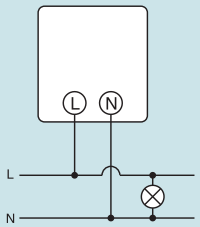
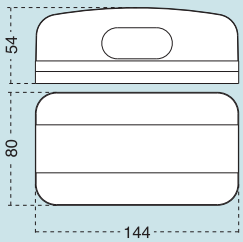
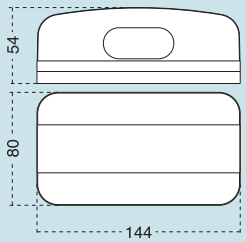
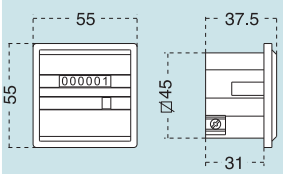
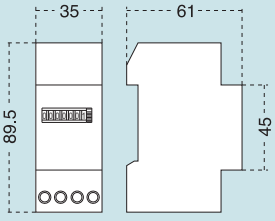
DOOR BELLS / HOUR COUNTERS

ORBISON	ORBISON DUO	CONTA EMPOTRABLE	CONTA MODULAR
			

Description

Door bell with two musical notes, two versions: for one or two access to housing.		Hour counters for machinery and maintenance works, mounted in DIN rail or panel.	

Features

	ORBISON	ORBISON DUO	CONTA EMPOTRABLE	CONTA MODULAR
Rated voltage	230 Va.c. / 50-60 Hz 6, 12, 24 or 48 Va.c. /d.c.	230 Va.c. / 50-60 Hz 6, 12, 24 or 48 Va.c. /d.c.	24, 48, 110, 230 or 400 Va.c./50Hz from 12 to 80 Vd.c.	230 Va.c. / 50 Hz
Own consumption	-	-	3W max.	4W max.
Counting range	-	-	99999, 99 hours	99999, 99 hours
Accuracy	-	-	0, 01 hour	0, 01 hour
Musical notes	2	2 + buzzer	-	-
Installation	Surface	Surface	Panel mounting	DIN Rail
Protection type	-	-	IP 65	IP 20
Operating temperature	-	-	-20ºC to +70ºC	-10ºC to +70ºC
Connection diagram				
Dimensions	 **Weight:** 269 gr.	 **Weight:** 299 gr.	 **Weight:** 57 gr.	 **Weight:** 80 gr.

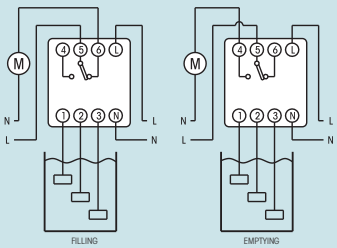
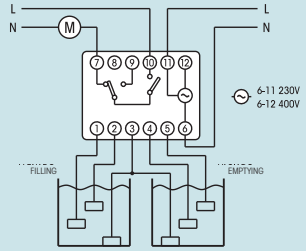
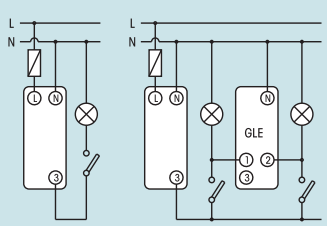
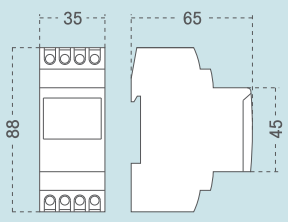
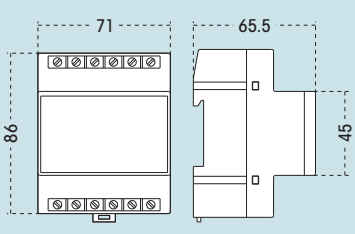
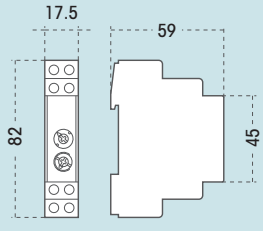
LEVEL CONTROL RELAY/ PHASE DISCONNECTOR

	EBR-1	EBR-2	FR12-1
			

Description

They are designed for controlling the filling and emptying of water wells and tanks by means of probes		The mains disconnection switch disconnects the power supply once all series connected loads are turned off, thus preventing any electromagnetic interference fields from occurring.

Features

	EBR-1	EBR-2	FR12-1
Rated Voltage	230 Va.c.	230 Va.c. or 400 Va.c	230 Va.c. Voltage control: 5 V-230 Vd.c. programmable
Frequency	50 - 60 Hz	50 - 60 Hz	-
Switching capacity	6(2) A 250 Va.c.	8 (2) A 230 Va.c. / 4 (1) A 400 Va.c.	16 A / 230 Va.c. ~ cos φ = 1
Own consumption	3, 5 VA	4 VA	0, 8 W
Sensitivity	50 kΩ maximum	From 0 to 50 kΩ	5 mA-200 mA
Operating temperature	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C
Protection Class	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions
Protection type	IP 20	IP 20	IP 20
Installation	DIN rail	DIN rail	DIN rail
Accessories	Optional: 3 probe set	Optional: 6 probes set	**GLE 12-3:** Special load accessory
Connection diagram			
Dimensions	 **Weight:** 184 gr.	 **Weight:** 333 gr.	 **Weight:** 73 gr.

MEASUREMENT AND ENERGY

PÁG.26 | MODULAR SINGLE PHASE ENERGY METERS


CONTAX 2511 S0


CONTAX 2521 S0 MID


CONTAX 3221 S0
CONTAX 3221 RF


CONTAX 6521 S0


CONTAX 0641 S0


CONTAX D-2221


CONTAX D-6331 S0

PÁG.28 | MODULAR THREE PHASE ENERGY METERS


CONTAX 0643 S0
CONTAX 0643i S0


CONTAX 0643 AR S0


CONTAX D-9703 S0


CONTAX NET

PÁG.29 | TARIFF ENERGY METER-SINGLE PHASE


MER B


MER


DOMOTAX


DOMOTAX TELEGEST PRIME

PÁG.31 | MULTIFUNCTION ENERGY METER-THREE PHASES


ORBITAX T3

PÁG.32 | ENERGY METER ACCESORIES / LOAD MANAGER


LECTOR OPTICO


ORBITEL


ADAPTADOR RS232/
RS485 A ETHERNET


SOFTWARE
DE LECTURA


ENERGEST 6051

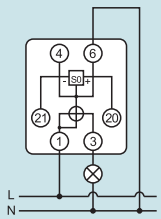
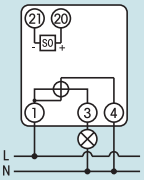
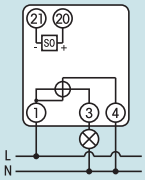
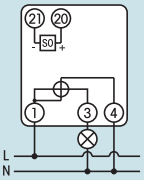
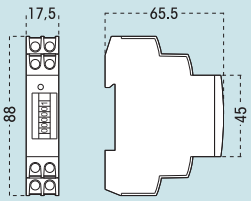
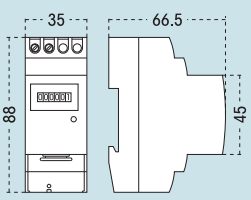
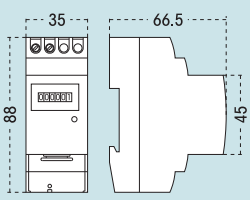
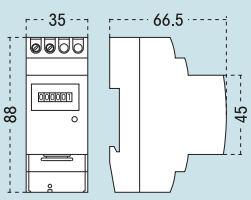
MODULAR SINGLE PHASE ENERGY METERS

CONTAX 2511 SO	CONTAX 2521 SO MID	CONTAX 3221 SO CONTAX 3221 RF	CONTAX 6521 SO
			

Description

Active single phase energy meters for individual consumption controlling in camp grounds, resorts, stands, marinas, etc. With communication possibility, DIN rail mounting. CONTAX 2511 SO MID comples with the european measuring instrument directive.

Features

	CONTAX 2511 SO	CONTAX 2521 SO MID	CONTAX 3221 SO CONTAX 3221 RF	CONTAX 6521 SO
Reference voltage Un	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz
Ib base current, (I maximum)	5 (25) A	5 (25) A	5 (32) A	10 (65) A
Rated voltage	195 to 253 V	195 to 253 V	195 to 253 V	195 to 253 V
Operating current	0, 02 to 25 A	0,25 to 25 A	0, 02 to 32 A	0, 04 to 65 A
Own consumption	0,5 VA aprox.	4 VA aprox.	7,5 VA aprox.(0,8 W)	7,5 VA aprox.(0,8 W)
Precision accuracy class	1	1	1	1
Numeric integrator	5 digits (kWh) + 1 decimal place (n x 0, 1 kWh)	5 digits (kWh) + 1 decimal place (n x 0, 1 kWh)	5 digits (kWh) + 1 decimal place (n x 0, 1 kWh)	5 digits (kWh) + 1 decimal place (n x 0, 1 kWh)
Pulse transmission	S0 Type	S0 Type	**CONTAX 3221 SO:** S0 Type **CONTAX 3221 ZIGBEE:** Wireless by means of USB ZIGBEE accessory and software CONTAX ZIGBEE	S0 Type
Recorded harmonics	Up to 7kHz	-	Up to 7kHz	Up to 7kHz
Operating temperature	-20 °C to +50 °C	-10 °C to +55 °C	-20 °C to +50 °C	-20 °C to +50 °C
Installation / Module numbers	DIN Rail / 1	DIN Rail / 2	DIN Rail / 2	DIN Rail / 2
Connection diagram				
Dimensions	 **Weight:** 96 gr.	 **Weight:** Consult	 **Weight:** 126 gr.	 **Weight:** 125 gr.

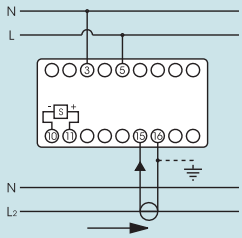
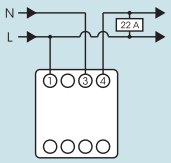
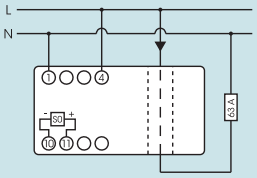
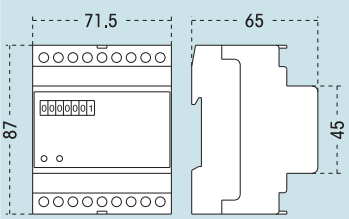
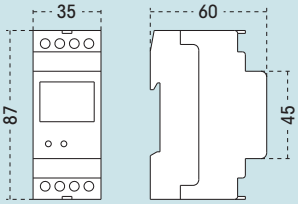
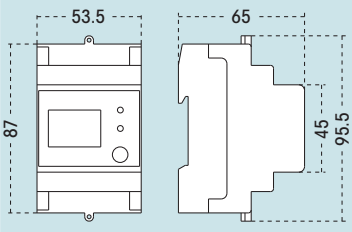
MODULAR SINGLE PHASE ENERGY METERS

	CONTAX 0641 SO	CONTAX D-2221	CONTAX D-6331 SO
			

Description

Active single phase energy meters for particular consumption controlling in camp grounds, resorts, stands, marinas, etc. With communication possibility, DIN rail mounting.

Features

	CONTAX 0641 SO	CONTAX D-2221	CONTAX D-6331 SO
Rated voltage	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz
Ib base current, (I maximum)	5 (6) A	10 (22, 5) A	10 (63) A
Starting-up current with power factor = 1	15 mA	≤25 mA	40 mA
Own consumption	Voltage circuits < 2, 5 VA Current circuits < 2, 5 VA	4 VA	Voltage circuits < 2, 5 VA Current circuits < 2, 5 VA
Transformers ratio selection	Up to 1000/5 A	Direct connexion	Cable passage
Operating temperature	-10ºC to +45ºC	-10ºC to +45ºC	-10ºC to +45ºC
Relative humidity	95% maximum without condensation	10% to 90% without condensation	10 to 90% without condensation
Precision accuracy class	2	2	1
Numeric integrator	Mechanic 7 digits	**Partial meter with reset:** 5 digits **Total meter:** 7 digits	**Partial meter with reset:** 5 digits **Total meter:** 7 digits
Pulse transmission	S0 type	-	S0 type
Protection category	IP 20	IP 20 / IP51 in front	IP 20 / IP51 in front
Installation / Module numbers	DIN rail / 4	DIN rail / 2	DIN rail / 3
Connection diagram			
Dimensions	 **Weight:** 317 gr.	 **Weight:** 217 gr.	 **Weight:** 236 gr.

MODULAR THREE PHASE ENERGY METERS

PULSE COLLECTOR

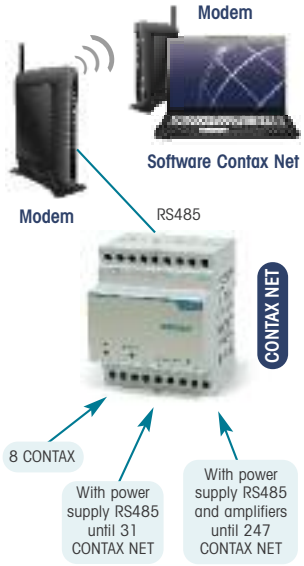
CONTAX 0643 S0 / CONTAX 0643i S0	CONTAX 0643 AR S0	CONTAX D-9073 S0	CONTAX NET
			

Description

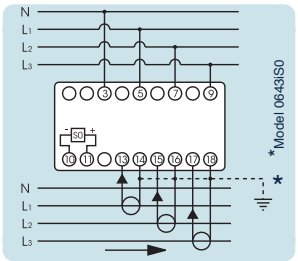
Active three phase energy meters for consumption controlling in machinery and installations. With communication possibility, DIN rail mounting.

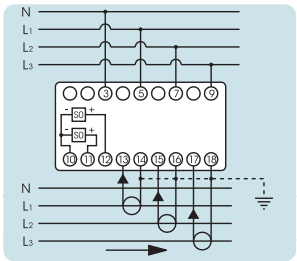
Features

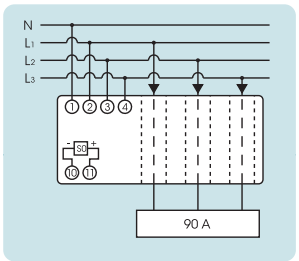
	CONTAX 0643 S0 / CONTAX 0643i S0	CONTAX 0643 AR S0	CONTAX D-9073 S0
Rated voltage	3x230 (400) Va.c. / 50-60 Hz	3x230 (400) Va.c. / 50-60 Hz	3x230 (400) Va.c. / 50-60 Hz
Transformer ratio	Up to 1000/5 A	Up to 1000/5 A	Thread
Own consumption	Voltage circuits < 2, 5 VA Current circuits < 2, 5 VA	Voltage circuits < 2, 5 VA Current circuits < 2, 5 VA	< 2, 5 VA
Ib base current, (I maximum)	5 (6) A	5 (6) A	10 (90) A
Starting-up current with power factor = 1	15 mA	15 mA	40 mA
Operating temperature	-10°C to +45°C	0°C to +50 °C	-10°C to +45 °C
Relative humidity	95% maximum without condensation	10% to 90% without condensation	10% to 90% without condensation
Precision accuracy class	2	2 (Active) and 3 (Reactive)	1
Numeric integrator	Mechanic 7 digits	Mechaninc 7 digits active/7digits reactive	**Partial meter with reset:** 5 digits **Total meter:** 7 digits
Pulse transmission	S0 Type	S0 type	S0 type
Protection type	IP 20	IP 20	IP 20 / IP 51 in front
Installation / Module numbers	DIN Rail / 4	DIN Rail / 4	DIN Rail / 7

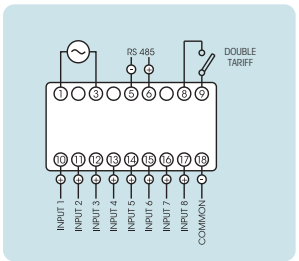


Connection diagram

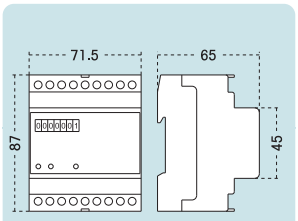




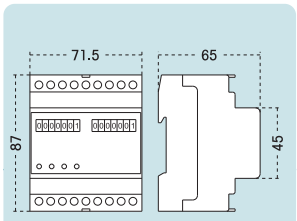




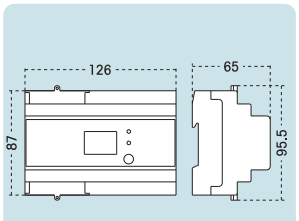
Dimensions



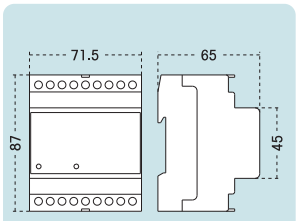
Weight: 324/384 gr.



Weight: 403 gr.



Weight: 516 gr.



Weight: 326 gr.

TARIFF ENERGY METER-SINGLE PHASE

MER b (DIGITAL AND ANALOGICAL)

The optimum solution for Household metering.

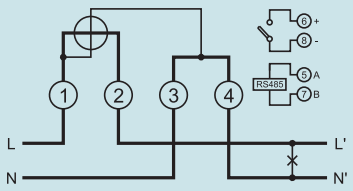
The MER B is an electronic meter for the measurement of active energy which allows the best cost/benefit ratio to be found for household meters. It provides the advantages of state-of-the-art electronic measurement technology. The meter has an LCD type display with large, clear digits.

The measurement of active energy is class B with stable behaviour throughout its curve. In order to be able to connect with AMR systems the meter has an optional pulse output, an RS485 interface and a comfortable auxiliary relay remotely.

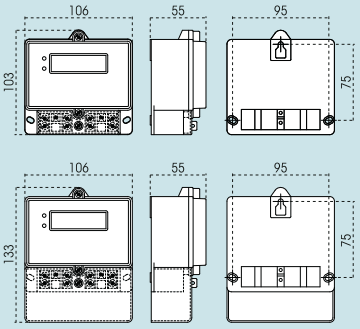
Features

Tensión	120-220-230-240V
Current	5(40)A, 5(60)A, 10(100)A
Dielectric strenght	4kV 50 Hz
High voltage pulses	12 kv with source resistance of 2 Ohms (the IEC 62053 only requires 6 kv)
Display	Mechanical recorder digits are 6.7 mm high, LCD 10 mm high.
Temperature	-25 ºC to +65ºC
Optional pulse output	1600imp/KWh or 3200 p/kWh
Led for testing	1600 imp/kWh or 3200imp/kW
Lifetime	15 years of certified life
Class	(IEC 62053)

Connection diagram



Dimensions



Weight: 395 gr.

MER

MER is an active energy meter; it is static single phase meter which means that it can substitute the import and export meter and the tariff time switch.

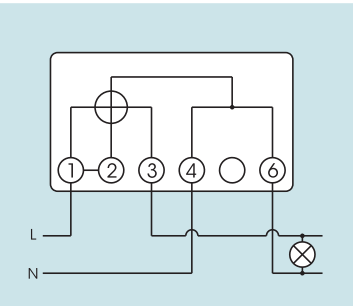
MER makes the direct measurement of active import energy, valid for time discrimination.

Period closing by means of button, 6 digit display.

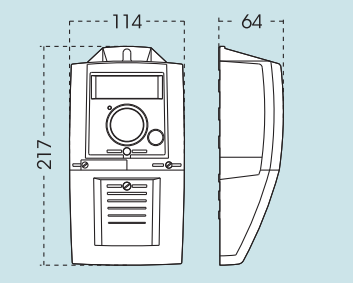
Features

Reference voltage Un	230 Va.c.
Ib base current, (I maximum)	10 (60) A 15 (60) A
Frequency	50 Hz
Operating voltage	From 0, 5 to 1, 5 Un
Starting-up current	0, 2% Ib
Own consumption	Voltage circuits: 0, 7 W rated load Current circuits: 0, 3 W rated load
Precision class	2
Protection class	II according to EN60335
Protection type	IP 51
Installation	Fastening triangle
Periods	Up to two
Battery life	10 years

Connection diagram



Dimensions



Weight: 835 gr.

MULTIFUNCTION ENERGY METER-SINGLE PHASE

DOMOTAX

DOMOTAX is a multifunction, static, single phase energy meter for active (Class 1) or active/reactive energy, two wires direct connection. It is the ideal meter for daylight saving as it replaces the dual tariff meter and the time switch. It can carry out daylight saving for up to four charging periods with their corresponding maximeters.

There is also a bidirectional version for energy measurement both for imports and exports.DOMOTAX can substitute the import and export meter and the tariff time switch. Therefore, it can manage up to four periods with maxi meter.

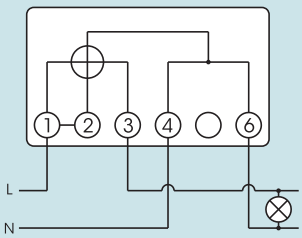
There is also, a bidirectional model to measure the import and export energy in solar applications.From a basic model it is possible to add communication by RS232, RS485, S0 pulse or pulse emissions (without voltage).

The RS485 is suitable for remote installations reading. It can be made with maximum delay / relay on demand.Therefore, it is a perfect energy meter in double tariff and solar applications.

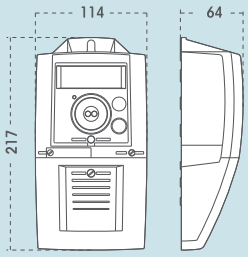
Features

Reference voltage Un	230 Va.c.
Ib base current (Imax)	10 (60) A
Frequency	50 Hz
Operating voltage	from 0,8 to 1,1 Un
Starting-up current	40 mA (0.4% Ib)
Own consumption	Tension circuits: < 2VA Intensity circuits: < 1VA
Precision class	1
Protection class	II according to EN60335
Protection type	IP 51
Instalation	Fixation triangle
Options	Communication port RS232 or RS485, S0 pulse emitter, potential-free pulse emitter, retard relay and load curve

Connection diagram



Dimensions



Weight: 969 gr.

DOMOTAX TELEGEST PRIME

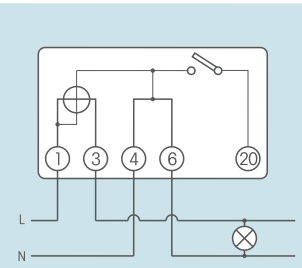
Description

Domotax Telegest Prime is a new monophase static meter with PLC communication capacity and functions which allow its remote management with an DLMS protocol over PRYME for the measurement of active and reactive energy, direct connection and installation inside.

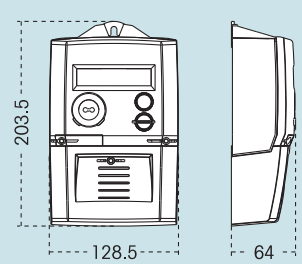
Features

Voltage	230 V
Frequency	50 Hz
Precision class ACTIVE	Class B according to EN 50470-3
Precision class REACTIVE	Class 2 according to EN 62053-23
Base current	10 A
Maximum current	60 A
Operating temperature	-25 ºC to +70 ºC
Protection type	IP 51 according to EN 60529
PLC Communication	PRIME
Protection class	Class II

Connection diagram



Dimensions



Weight: 919 gr.

MULTIFUNCTION ENERGY METER-THREE PHASES

ORBITAX T3

The ORBITAX T3 is a combined meter-recorder in a single piece of electronic equipment having electric power measurement and main analyser functions that comply with all EEC regulations and with the imposed specifications for applying various access tariff contracts, electronic signature and two load curves.

It uses the IEC 870-5-102 communications protocol adapted by the system operator.

The ORBITAX T3 performs the power measurement in four quadrants and can operate in unidirectional or bidirectional mode. It discriminates between CAPACITIVE or INDUCTIVE when performing reactive energy measurements.

The meter measurement system is based on the very latest cutting-edge developments in power meters/digital watt meters. By digitising both voltage and current waveforms in three phases and employing digital calculations, r.m.s. values for voltage, current, active power, reactive power and power factor are obtained in addition to other electrical parameters.

The ORBITAX T3 also incorporates pulse transmitters and calibration LED. Communication with the ORBITAX T3 is achieved using an infrared port in accordance with EN 62056-21 (third edition EN 60107) which works with most optical collectors.

It also includes an RS-232 port, which can be replaced by RS-485 on order. These communications ports make use of RJ11 quick connections and permit modem communications in accordance with IEC 870-5-102.

Using a powerful software application, the ORBITAX T3 allows the display of real-time current, voltage, power, energy, power factor and frequency data on the computer screen, together with recording any excesses or defects in current, voltage, energy or power.

These characteristics make the ORBITAX an ideal meter for industrial installations and photovoltaic solar applications connected to the grid.

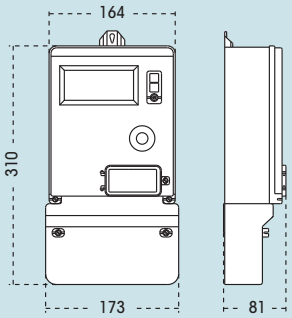
Technical Specifications

- Class 1 active energy and class 2 reactive energy.
- Class 0.5s active energy and class 1 reactive energy.
- Completely electronic system.
- Direct current measurement 10 (80) A or via a current transformer x/5 A.
- Active and reactive verification Led's.
- Alphanumerical LCD display.
- 8-digit power/maximum display. Programmable from 1 to 3 decimals.
- Maximum value recording for the last 12 periods, with date/time and applied tariff indications.
- Recording of the last 10 power failures (exceeding 0.5 seconds).
- Automatic or manual period closing (closed by button in the equipment) or in remote mode.
- Closing date/time indication.
- Optical communication port in accordance with EN 62056-2 (third edition of EN 60107).
- Factory-selectable optic-isolated communications port between RS232 and RS485.
- Relay analyser incorporated.
- It complies with IEC 870-5-102, adapted by the system operator.
- 3 simultaneous contracts.
- 3 and 6 period access tariff.

Models

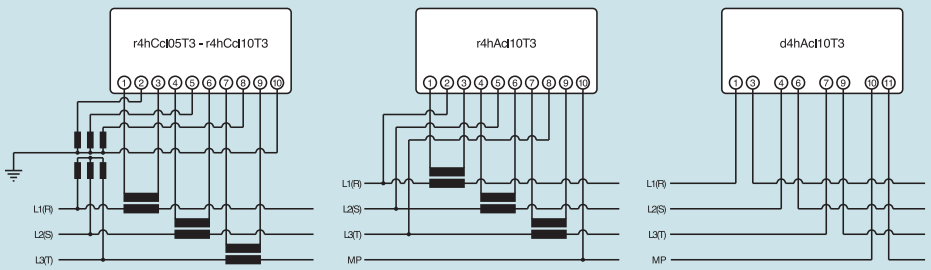
Model	Precision	Characteristics
ORBITAX r4hCcIO5T3	Class 0,5 s Active / Class 1 Reactive	V > 1000 V; 450 kW < Pc < 10 MW; x/110 V; x/5 A
ORBITAX r4hCcI10T3	Class 1 Active / Class 2 Reactive	V > 1000 V; 50 kW < Pc < 450 kW; x/110 V; x/5 A
ORBITAX r4hAcI10T3	Class 1 Active / Class 2 Reactive	V > 1000 V; 50 kW < Pc < 450 kW; x/5 A
ORBITAX r4hAcI10T3	Class 1 Active / Class 2 Reactive	V < 1000 V; 15 kW < Pc < 50 kW; x/5 A
ORBITAX d4hAcI10T3	Class 1 Active / Class 2 Reactive	V < 1000 V; 15 kW < Pc < 50 kW; Direct measure 10(80) A
ORBITAX d4hAcI10T3	Class 1 Active / Class 2 Reactive	V < 1000 V; Pc < 15 kW; Direct measure 10(80) A

Dimensions



Weight: 1894 gr.

Connections



MER - DOMOTAX – ORBITAX Accessories

Optical reader

This provides the option to easily connect a portable reader unit to the measuring equipment. The optic-coupling can be quickly, easily and safely carried out for the user using a computer USB port and connecting the optical reader to the meter optical port.

Modem ORBITEL RS232 / ORBITEL RS485

Allows remote reading and import of data from a meter with RS32 or RS485 port by GSM Modem. Consists of: PC connection cable, antenna, meter connection cable, modem and power supply.

* The operation of the equipment is subject to the characteristics of the GSM communication of the country. Consult.

RS232 to RS485 adapter

This permits the conversion of an RS232serial port into RS485 for reading several meters simultaneously. It includes a PC or modem RS-232 connection cable RS232-RS485 converter and power supply cable.

RS232/RS485 adapter to Ethernet and RS232/RS485 adapter to radiofrequency

This is an assembly for reading a meter with RS-232 output or a meter network with RS-485 output over an Ethernet 10/100 Base TX network. It can be installed on a DIN rail or surface. Industrial grade.
It works over a LAN and the Internet (TCP/IP).

The radiofrequency RS232/RS484 adapter allows remote reading of a meter network by frequency, i.e. without the need for complex wired network.

Read software

ITACA T3: automatic read software for ORBITAX T3.
AGNI: programmed read software for ORBITAX T3.
DOMOTAX: read software for DOMOTAX.

ENERGEST 6051

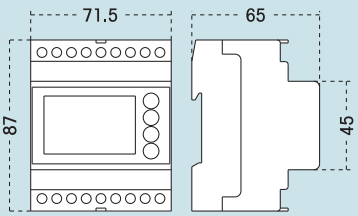
Description

ENERGEST 6051 is a load management solution. Two relays control load activetion and deactivetion in function of general consumption and the maximum power set point established by the user. It is very useful for heating control divided into three sections, to prevent exceeding the contracted maximum power and guaranteeing 100% accumulator load. It also permits the display of current, voltage, active power, reactive power, cos φ, active energy and frequency.

Features

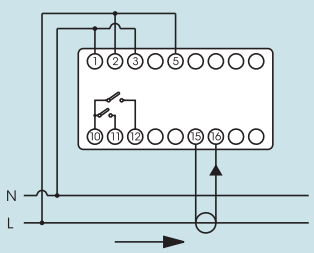
Rated voltage	230 Va.c. / 50-60 Hz
Ib base current, (I maximum)	60 A
Current measure	By means of transformer
Switching capacity	2 x 2 A 250 Va.c.
Relay functions	NO/NC configuration Current reference value Hysteresis value Load activetion delay Sample period to connect the load
Accuracy	Voltage 0, 5% Current 1% Power 2% Frequency ±0, 1 Hz Active energy class 2
Display	Back light LCD display
Protection type	IP 20 / IP 51 in front
Installation	DIN rail (4 modules)

Dimensions



Weight: 437 gr.

Connection diagram



CLIMATE AND COMFORT

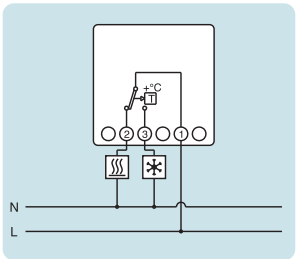
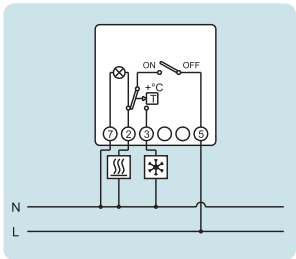
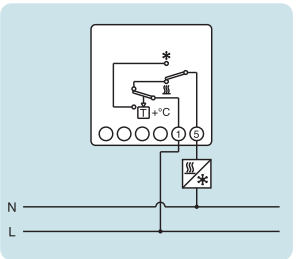
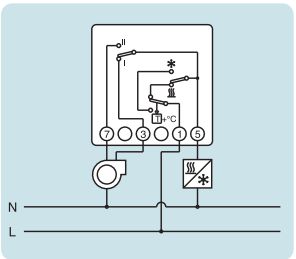
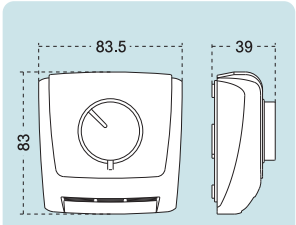
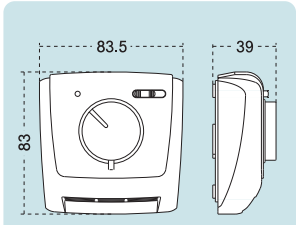
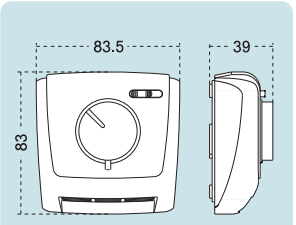
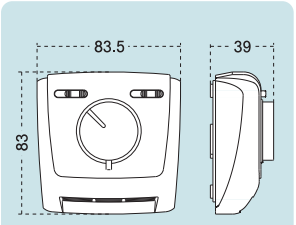
ANALOGIC THERMOSTATS

CLIMA ML	CLIMA MLI	CLIMA MLW	CLIMA FANCOIL
			

Description

ANALOG thermostats for air-conditioning and heating systems. Functioning by gas membrane, which guaranties a long accuracy life. Power supply is not necessary.

Features

	CLIMA ML	CLIMA MLI	CLIMA MLW	CLIMA FANCOIL
Rated voltage	Not necessary	Not necessary	Not necessary	Not necessary
Switching capacity	16 (2,5) A / 250 V	10 (1,5) A / 250 V	10 (1,5) A / 250 V	10 (1,5) A / 250 V
Manual control	-	ON/OFF + Neon indicator	Heating/air conditioning	Heating/Off/Air conditioning Speed 1 / Speed 2
Temperature range	5 °C to 30 °C	5 °C to 30° C	5 °C to 30 °C	5 °C to 30 °C
Functioning temperature	0 °C to 50 °C	0 °C to 50 °C	0 °C to 50 °C	0 °C to 50 °C
Protection class	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN60335 under correct assembly conditions
Protection type	IP 20	IP 20	IP 20	IP 20
Installation	Surface	Surface	Surface	Surface
Features	Room thermostat with small and compact design, high accuracy. Changeover contact.	Room thermostat with small and compact design, high accuracy. Changeover contact with on/off manual switcho.	Room thermostat with a changeover contact and heating/air conditioning manual switch with on/off manual control. Therefore it is not necessary to manipulate the temperature selector to change between air conditioning and heating.	Room thermostat for Fancoil systems with 2 speeds selected by manual switch. Valid for heating and air conditioning systems.
Connection diagram				
Dimensions	 **Weight:** 119 gr.	 **Weight:** 122 gr.	 **Weight:** 135 gr.	 **Weight:** 128 gr.

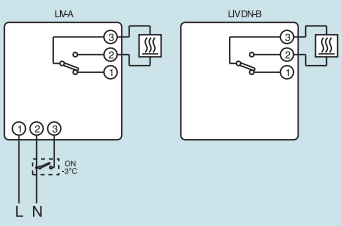
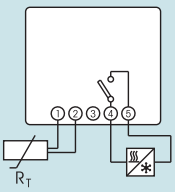
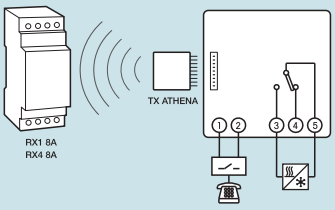
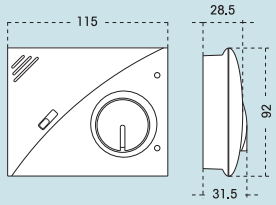
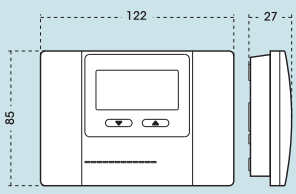
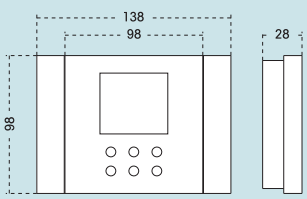
ELECTRONIC THERMOSTATS

	LIV-A / LIV-DN-B	NEO ML	KLIO
			

Description

Range of electronic thermostats to control air conditioning systems. NEO is designed to control under floor heating through tube. KLIO enables telephone control (X.CODE WAVE or X.CODE GSM) and wireless connection with the air conditioning or heating machine by means of TX ATHENA and RX1 8A.

Features

	LIV-A / LIV-DN-B	NEO ML	KLIO
Rated voltage	**LIV-A:**230 Va.c. - 50/60 Hz **LIV-DN-B:** 2 alkaline batteries 1, 5 V AAA	2 alkaline batteries 1, 5 V AAA (LR03)	2 alkaline batteries 1, 5 V AAA (LR03)
Switching capacity	8(5) A / 250 Va.c.	5(1) A / 250 Va.c.	8 A / 250 Va.c.
Battery life	1 year (LIV-DN-B)	1 year approximately	1 year approximately
Temperature measurement accuracy	-	± 0, 5 °C	± 0, 5 °C
Night temperature	D/N: -3 °C Day Temp.	Adjustable	Adjustable from 2 °C to 35 °C
Anti ice temperature	-	-	Adjustable from 0 °C to 15 °C
Temperature resolution	-	0, 1 °C	0, 1° C
Temperature regulation	5 °C to 35 °C approx.	Internal probe: 5 °C to 35 °C External probe: 5 °C to 45 °C	2 °C to 35 °C approx.
Operating temperature	0 °C to +50 °C	-10 °C to +50 °C	0 °C to +50 °C
Protection class	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions
Protection type	IP 40	IP 40	IP 40
Installation	Surface or over mechanism box	Surface or over mechanism box	On wall (horizontal or vertical)
Accessories	-	X.TEMP 10K	TX ATHENA, X CODE WAVE, X CODE GSM, MA 16, XR1 8A, RX.ANT
Features	LIV-DN-B:Night temperature selector with a reduction of 3°C.	Summer and winter operating mode. Night temperature selector.	Summer and winter operating mode. Night temperature selector. Adjustable in time and °C.
Connection diagram			
Dimensions	 **Weight:** 178/ Consult gr.	 **Weight:** 157 gr.	 **Weight:** 252 gr.

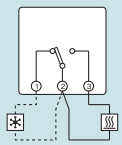
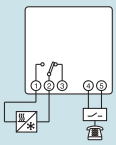
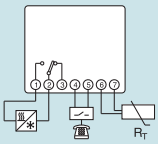
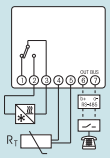
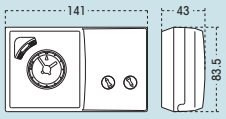
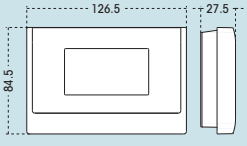
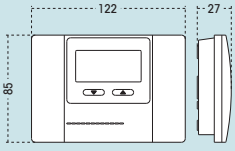
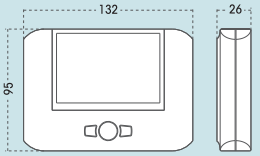
CRONOTHERMOSTATS

	ERA	VIA	NEO	ORUS
				

Description

Cronothermostat to control air conditioning or heating installations. ANALOG (ERA) or digital versions. It admits phone controllers (X.CODE GSM or X.CODE WAVE). NEO and VIA are available in different colours (black, white and aluminium).

Features

	ERA	VIA	NEO	ORUS
Rated voltage	2 alkaline batteries 1, 5 V AA (LR06)	2 alkaline batteries 1, 5 V AAA (LR03)	2 alkaline batteries 1, 5 V AAA (LR03)	1 alkaline batteries 1,5V AA (LR06)
Battery substitution time	-	10 minutes	10 minutes	1 minute
Switching capacity	5(1) A / 250 Va.c.	5(1) A / 250 Va.c.	5(1) A / 250 Va.c.	8 A / 250 Va.c.
Contact	Changeover	Changeover	Changeover	Changeover
Battery lie	1 year approximately	1 year approximately	1 year approximately	1 year approximately
Minim. programmable time	15 min. (Daily)	1 hour	30 min.	1 hour
Temperature accuracy	± 1 °C	± 0, 2 °C	± 0, 5 °C	± 0,5 °C
Resolution	-	0, 1 °C	0, 1 °C	0,1 °C
Temperature measurement period	1 minute	1 minute	30 s	Every 20 seconds
Output relay updating	1 minute	1 minute	1 minute	1 minute
Programming type	Daily	Weekly 8 programs / 2 temperatures + Anti ice	Weekly 8 programs / 2 temperatures + Anti ice	Weekly 7 programs / 5 programmable temperatures
Temperature range	10 °C to 40 °C (Comfort) 0 °C to 25 °C (Saving)	15 °C to 35 °C (Comfort) 5 °C to 25 °C (Saving)	0 °C to 50 °C (with internal probe) -10 °C to +50 °C (with external probe)	0 °C to 50 °C (with internal probe) -40 °C to 60 °C (with external probe)
Operating temperature	-10 °C to 45 °C	0 °C to 50 °C	0 °C to 50 °C	-40 °C to 60 °C
Operating accuracy	-	≤ ± 1, 2 s. / 24 h to 23°C	≤ ± 1, 2 s. / 24 h to 23°C	-
Protection class	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	-
Protection type	IP 40	IP 40	IP 40	IP 40
Installation	Surface	Surface or over mechanism box	Surface or over mechanism box	Surface or over mechanism box
Accessories	-	X CODE WAVE, X CODE GSM, MA 16.	X CODE WAVE, X CODE GSM, MA 16, X TEMP 100K	X.CODE GSM, MA 16, X.TEMP 100K
Connection diagram				
Dimensions	 **Weight:** 265 gr.	 **Weight:** 223 gr.	 **Weight:** 165 gr.	 **Weight:** 279 gr.

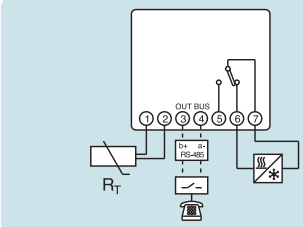
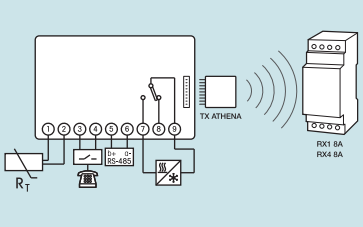
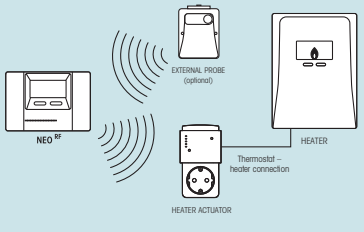
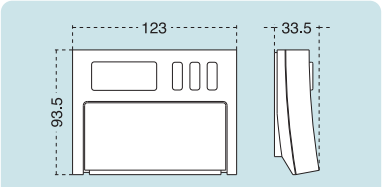
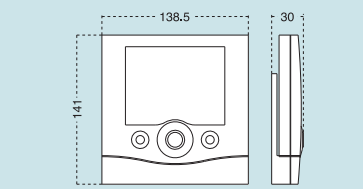
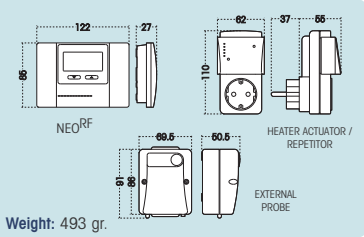
CRONOTHERMOSTATS

	THERMO X	ATHENA	NEO^{RF} / KIT CLIMATIZACIÓN
			

Description

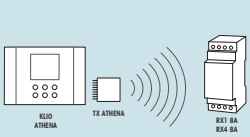
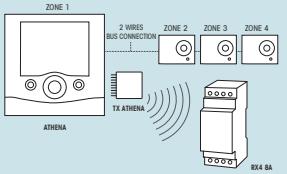
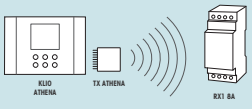
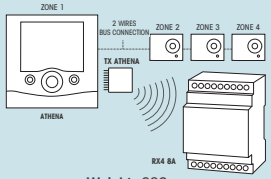
	THERMO X is a weekly electronic cronothermostat wich combines simplicity of use with functional innovation, making it an excellent domestic temperature regulators.	ATHENA enables the acclimatization control for up to four different areas by means of extra probes (ATHENA TEMP) connected by BUS cable. It can be connected without cables (TX ATHENA) with the actuator RX4 8A; admits phone controller (X.CODE WAVE or X.CODE GSM).	The NEO^{RF} kit is the easiest way to control the acclimatization by means of a wireless solution. It is made up of a plug in actuator for the heater, a NEO^{RF} cronothermostat and an optional external probe.

Features

Rated voltage	2 alkaline batteries 1,5 V AA (LR06)	2 alkaline batteries 1, 5 V AAA (LR03)	2 alkaline batteries 1, 5 V AAA (LR03)
Battery substitution time	-	2 minutes	10 minutes
Switching capacity	8 A / 250 Va.c.	8 A / 250 Va.c.	5(1) A 250 Va.c.
Contact	Changeover	Changeover	Changeover
Battery life	2 years approximately	1 year approximately	1 year approximately
Minimum programmable time	1 hour	30 min.	30 min.
Temperature accuracy	± 0,5 ºC	± 0, 5 ºC	± 0, 5 ºC
Resolution	0,1 ºC	0, 1º C	0, 1 ºC
Temp. measurement period	-	30 seconds	30 seconds
Output relay updating	-	-	1 minute
Programming type	Weekly with 7 programs / 3 temperatures	Weekly with 7 daily programs/ 4 temperatures	Weekly with 8 daily programs/ 2 temperatures + anti ice
Temperature range	2 ºC to 35 ºC (heating automatic/manual) 10 ºC to 35 ºC (air conditioning automatic/manual) -40ºC to 60ºC (with external probe)	2 ºC to 35 ºC approx. -40ºC to 60ºC (with external probe)	0 ºC to 50 ºC (internal probe) -10 ºC to +50 ºC (external probe)
Operating temperature	0 ºC to 50 ºC	0 ºC to 50 ºC approx.	0 ºC to 50 ºC
Protection class	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions	II according to EN 60335 under correct assembly conditions
Protection type	IP 40	IP 40	IP 40
Installation	Surface or over mechanism box	Surface or over mechanism box	Surface or over mechanism box
Accessories	X.CODE WAVE, X.CODE GSM, MA 16, X.TEMP 100K.	X CODE GSM, X CODE WAVE, MA 16, X TEMP 100K, TX ATHENA, ATHENA TEMP, RX1 8A, RX4 8A, RX.ANT	X.TEMP RF and RF system plug-in signal repeater
Connection diagram			
Dimensions	 **Weight:** 309 gr.	 **Weight:** 426 gr.	 **Weight:** 493 gr.

	TX ATHENA	ATHENA TEMP	RX1 8A	RX4 8A
				

Features

	TX ATHENA	ATHENA TEMP	RX1 8A	RX4 8A
Definition	It converts the thermostat KLIO or the cronothermostat ATHENA in wireless transmitters.	Programmable temperature probe used to control different areas by means of ATHENA.	Waves actuator with one output, for KLIO or ATHENA. It receives the TX ATHENA signal. RX.ANT antenna included.	Waves actuator with four outputs for ATHENA. It receives the TX ATHENA. RX.ANT antenna included.
Rated voltage	-	2 Alkaline batteries 1, 5 V AAA (LR03).	230 Va.c.	230 Va.c.
Output control	-	-	1 Changeover relay 8 A/250 Va.c.	3 Changeover relays and 1 NA relay 8 A / 250 Va.c.
Installation	Inserted into KLIO or ATHENA.	Surface	DIN rail	DIN rail
Connection diagram	Wireless connection  **Weight:** 31 gr.	Zone control  **Weight:** 139 gr.	Wireless connection  **Weight:** 175 gr.	Zone control  **Weight:** 639 gr.

	RX.ANT	X.TEMP 100K	X. TEMP 10K
			

Features

	RX.ANT	X.TEMP 100K	X. TEMP 10K
Definición	External antenna for RX1 8A or RX4 8A.	NTC external temperature probe (100 k at 25ºC) for THERMO X, NEO, ATHENA y ORUS	NTC external temperature probe (10kΩ to 25ºC) for NEO ML+
Frequency	433, 92 ±10 MHz.	-	-
Impedance	50 Ω	-	-
Cable length	4, 5 meters.	2 metres (extendable to 40 metres) and 1 mm^2.	4 meters (up to 40 meters) and 1mm^2.
Operating temperature	-	-40 ºC to +60ºC	-40 ºC to +60ºC
Protection class	-	IP 66	IP 66

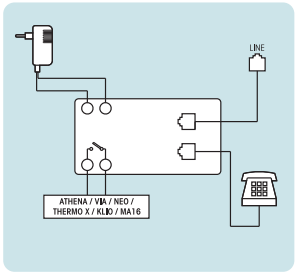
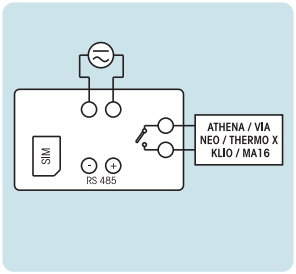
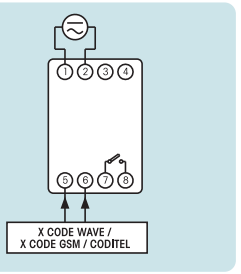
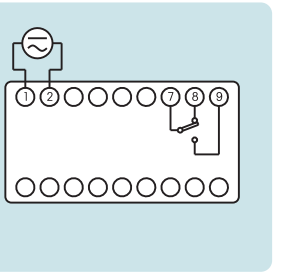
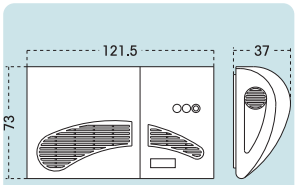
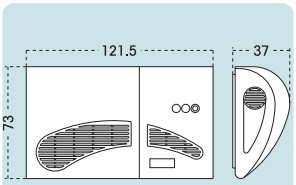
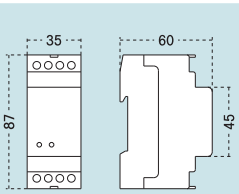
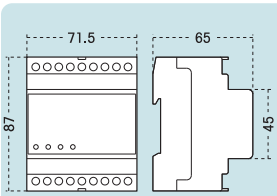
TELEPHONE CONTROLLERS

X.CODE WAVE	X.CODE GSM	MA 16	CODITEL
			

Description

They enable to act in the acclimatization installation by means of mobile or land telephone line.

Features

	X.CODE WAVE	X.CODE GSM	MA 16	CODITEL
Definition	Device for the ON/OFF remote control by means of land telephone line.	GSM telephone controller for the ON/OFF control by means of SIM card. It is possible a BUS connection with the cronothermostat for individual areas control. To be used with any mobile phone operator.	Connected with X.CODE GSM, X.CODE WAVE and CODITEL it enables controlling loads up to 16 A.	**CODITEL is a phone remote control that reacts to the missed call when an authorized user makes a call, Coditel works (opens the garage door, turns on the boiler, garden sprinkler or any other electrical circuit) without picking up; and hence the mobile phone becomes a remote control at no charge.**
Features	Rated voltage: 230 Va.c. / 50 Hz 1 output relay (0,5 A – 125 Va.c.). For 16 A use MA16. ON/OFF manual control and indicator led. Telephone cable included to connect with the telephone line. Mounting on surface or over mechanism box. * The operation of the equipment is subject to the characteristics of the GSM communication of the country. Consult.	Rated voltage: 230 Va.c. / 50 Hz 1 output relay (5 A - 230 Va.c.). For 16 A use MA16. Manual control ON/OFF and indicator led. Mounting on surface or over mechanism box. * The operation of the equipment is subject to the characteristics of the GSM communication of the country. Consult.	Rated voltage: 250 Va.c. (-15% / +10%) Output: mechanic relay 16 A / 250 V with contact "Normally Close" (NC). DIN rail mounting.	Power supply: 230 V.c.a. / 50 Hz 1 output control relay (5a-230 V.c.a.) Coditel carries out ON, OFF, time delayed ON and time delayed OFF or change in status operations as regards the output relay by way of missed calls or SMS. It can also send an SMS message in reply with the installation status. Allows 100 different users. **Accessory: GSM ANTENA** with 3 m of cable to improve coverage in metallic cabinets, low signal etc.. * The operation of the equipment is subject to the characteristics of the GSM communication of the country. Consult.
Connection diagram				
Dimensions	 **Weight:** 640 gr.	 **Weight:** 402 gr.	 **Weight:** 210 gr.	 **Weight:** 392 gr.

TWIST

Description

TWIST is a wall mounted gas detector by means of catalytic sensor. The TWIST gives an acoustic and visual warning of any gas leaks. TWIST also has an internal relay which can be connected to a normally open "NO" or normally closed "NC" shut off valve relay in order to cut off the flow of gas once a leak has been detected.

Functioning

- Auto check with fault indication.
- The unit activetes when it detect a gas concentration of 10% of the L.E.L. (Lower Explosive Limit).
- After powering up the gas detector, there is a 1 minute delay before the system is active.
- After detecting gas for a 20 seconds period, the acoustic alarm and shut OFF valve relay are activeted.

Kit Twist + Shut Off Valve Relay

- Gas detector TWIST.
- Shut OFF valve normally open suitable for 1/2″ or 3/4″ pipe. (Consult for other contact configuration or different pipe).

TWIST

Product code	Model
OB514410	TWIST METHANE-TOWN GAS
OB514510	TWIST GLP (Propane, butane)
OB514610	TWIST CO (Check availability)

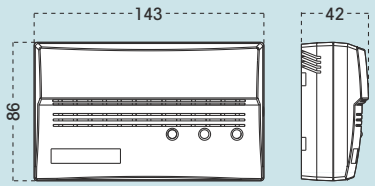
KIT TWIST + ELECTROVALVE

Product code	Model
OB515212	KIT GAS METANE-TOWN GAS 1/2″
OB515312	KIT GAS GLP (Propane, butane) 1/2″
OB515234	KIT GAS METANE-TOWN GAS 3/4″
OB515334	KIT GAS GLP (Propane, butane) 3/4″

Features

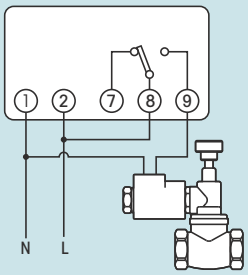
Power supply	230 Va.c. 50 Hz
Capacity of contacts	Changeover 2, 5 A / 230 V
Absorption	20 mA max
Operating temperature	-5°C to +40°C
Relative humidity	-30% -90%
Acoustic signal	85 dB (A) at 1m.
Type of protection	IP 42
Installation	Wall or box mounting

Dimensions



Weight: 250 gr.

Connection diagram



STREET LIGTHING

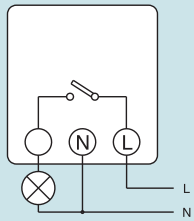
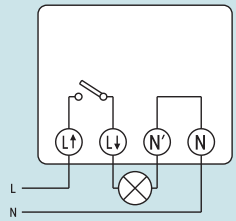
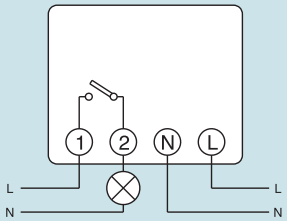
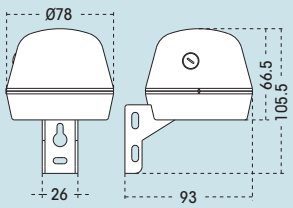
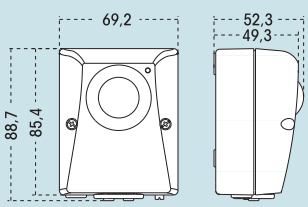
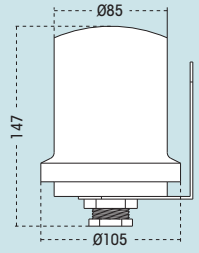
TWILIGHT SWITCHES

	VEGA	DOMOLUX	ORBIFOT
			

Description

ON and OFF switching controllers according to the luminosity level, it is used in lighting installations such as shop windows, doorways, signalling, neon signs, etc.

Features

	VEGA	DOMOLUX	ORBIFOT
Rated voltage	230 Va.c.	230 Va.c.	230 Va.c. Other voltages, consult
Frequency	50 Hz	50-60 Hz	50 Hz
Switching capacity	10 A / 230 Va.c. cos φ = 1	16 A / 230 Va.c. cos φ = 1	10 A / 250 Va.c. cos φ = 1
Own consumption	8 VA (1 W approx.)	3, 4 VA (0, 7 W approx.)	8 VA (1 W approx.)
Contact type	Single with voltage	Single with voltage	Single without voltage
Maximum recommended loads			
Incandescent	2000 W	3000 W	800 W
Non-compensated fluorescent	200 W	1000 W	360 W
Fluorescents	200 W	1000 W 120 µF	By means of contactor
Low voltage halogen	500 VA	2000 VA	600 VA
Halogen (230 Va.c.)	1000 W	3000 W	800 W
Low consumption lamps	200 W	600 W (30 x 20 W)	By means of contactor
Sensor type	Cadmium Sulphurate	Cadmium Sulphurate	Cadmium Sulphurate
Operating temperature	-30 ºC to +50 ºC	-25 ºC to +45 ºC	-10 ºC to +50 ºC
Sensitivity	5-300 lux logarithm	5-200 lux logarithm	5-1000 lux logarithm
ON/OFF delay	60 s / 60 s	30 s / 30 s	25 s / 25 s
Protection type	IP 54	IP 55	IP 65
Installation	Surface or post	Surface or post	Surface or over lamp post
Connection diagram			
Dimensions	 **Weight:** 190 gr.	 **Weight:** 144 gr.	 **Weight:** 402 gr.

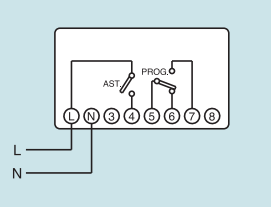
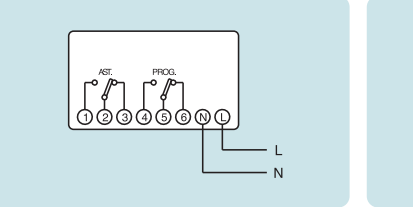
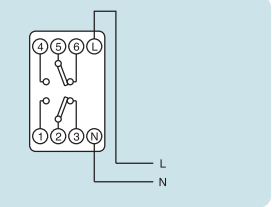
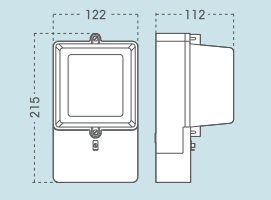
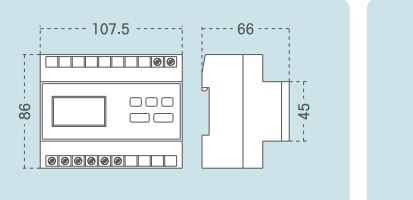
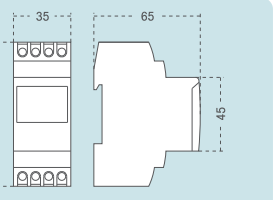
ASTRONOMIC SWITCHES

	ASTRO	DATA ASTRO	ASTRO NOVA CITY
			

Description

Time switches for exterior lighting installations. They automate the on and off time control for the lighting circuits in line with daylight hours in the area where it is installed. Economic saving on installation, maintenance and consumption.

Features

	ASTRO	DATA ASTRO	ASTRO NOVA CITY
Rated voltage	120 or 230 Va.c. / 50-60 Hz	120 or 230 Va.c. / 45-60 Hz	230 Va.c. / 50-60 Hz
Switching capacity	2x10(2) A / 250 Va.c.	2x10 (2) A / 250 Va.c.	2x16 (10) / 250 Va.c.
Contact type	Automatic: single with voltage Voluntary: changeover without voltage	Changeover without voltage	Changeover without voltage
Accuracy	≤ 0, 5 s/day between 20 ºC and 30 ºC	≤ 1 s/day between 20 ºC and 30 ºC	≤ 1s/day at 23 ºC
Battery back up	≥ 12 years without power supply at 23 ºC	≥ 30 days after 48 h. connected to the power supply uninterrupted	≥ 4 years without power supply (Lithium)
Maximum recommended loads			
Incandescent	-	2000 W	3000 W
Fluorescents	-	By means of contactor	1200 W
Low voltage halogen	-	1500 VA	2000 VA
Halogen (230 Va.c.)	-	2000 W	3000 W
Low consumption lamps	-	By means of contactor	400 W
LED	-	-	600 W
Memory spaces	-	104	22
Application area	Iberian Peninsula and Canary Island	Europe	Spain and Portugal / Algeria, Belgium, France, Luxemburg, Morocco and Tunisia / Denmark, Finland, Norway and Sweden / Italy / Germany / Ireland / England / Turkey / Czechoslovakia and Slovakia / Australia / New Zealand / EAst European countries / Middle East.(Booking query for other countries)
Automatic s/w change	Yes	Yes	Yes
Installation	Surface (Fastening triangle)	DIN rail	DIN rail
Protection type	IP 52	IP 20	IP 20
Connection diagram			
Dimensions	 **Weight:** 963 gr.	 **Weight:** 332 gr.	 **Weight:** 156 gr.

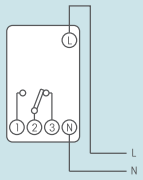
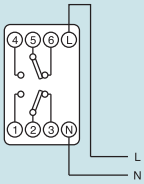
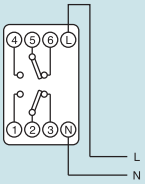
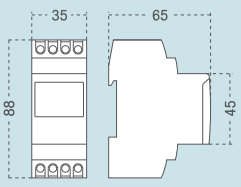
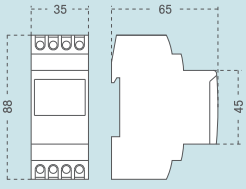
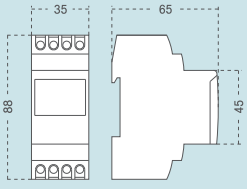
INTERRUPTORES ASTRONÓMICOS

	ASTRO UNO	ASTRO LOG	ASTRO SAT
			

Description

Time switches for exterior lighting installations. They automate the on and off time control for the lighting circuits in line with daylight hours in the area where it is installed. Economic saving on installation, maintenance and consumption. Astro Sat has a large display with luminous blacklight; furthermore, it can be programmed by way of a remote control.

Features

	ASTRO UNO	ASTRO LOG	ASTRO SAT
Rated voltage	120 or 230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c.
Switching capacity	16 (10) / 250 Va.c.	2x16 (10) A / 250 Va.c.	2x16(10)A / 250 Va.c.
Contact type	Changeover without voltage	Changeover without voltage	Changeover without voltage
Accuracy	≤ 1s/day at 23ºC	± 1 s/day at 23ºC	± 1s/day at 23ºC
Battery back up	≥ 4 years without power supply (lithium battery)	≥ 4 years without power supply (lithium battery)	5 years (Interchangeable battery)
Maximum recommended loads			
Incandescent	3000 W	3000 W	3000 W
Fluorescents	1200 W	1200 W	1200 W
Low voltage halogen	2000 VA	2000 VA	2000 VA
Halogen (230 Va.c.)	3000 W	3000 W	3000 W
Low consumption lamps	400 W	400 W	400 W
LED	600 W	-	600 W
Memory spaces	22	22	70
Application area	Spain and Portugal / Algeria, Belgium, France, Luxembourg, Morocco and Tunisia / Denmark, Finland, Norway and Sweden / Italy / Germany / Ireland / Britain / Turkey / Czech Republic and Slovakia / Australia / New Zealand / Countries in Eastern Europe / Middle East (Booking query for other countries)	Worldwide	Application by country
Automatic s/w change	Yes	Yes	Yes
Installation	Rail DIN	Rail DIN	Rail DIN
Protection type	IP 20	IP 20	IP 20
Connection diagram			
Dimensions	 **Weight:** 134 gr.	 **Weight:** 138 gr.	 **Weight:** 166 gr.

ESDONI

Description

ESDONI equipment is a line-head flux stabiliser-reducer that resolves problems caused by grid instability by stabilising line supply voltage during peak periods. They reduce the voltage during off-peak periods and thus achieve additional savings.

Lighting systems that incorporate discharge lamps associated with ballast of the high-pressure sodium vapour (HPSV) type or mercury vapour (MV) are highly susceptible to supply voltage variations.

Voltages exceeding 105% of the rated value for which they were designed will significantly reduce lamp and equipment life span by increasing electric power consumption.

The graph in Figure 1 shows the great influence of power supply voltage on consumption and on the lifespan of a 400W HPSV lamp. As can be seen, a 7% increase produces a lifespan reduction of 50% and a 16% excess consumption.

In addition, the need to rationalise energy consumption leads to the reduction of public street lighting levels during hours when there are fewer users.

The Energy Efficiency regulation regarding exterior lighting installations indicates to us that "Installations of over 5 kw must be endowed with a light level adjustment system, allowing a reduction in the light flow up to 50%"

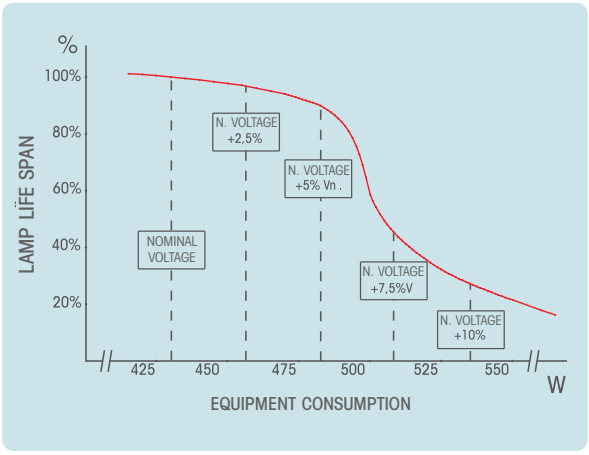


Fig.1: Lamp life span and consumption in function of mains voltage. (Auxiliary equipment - series ballast - 400 W high-pressure sodium vapour)

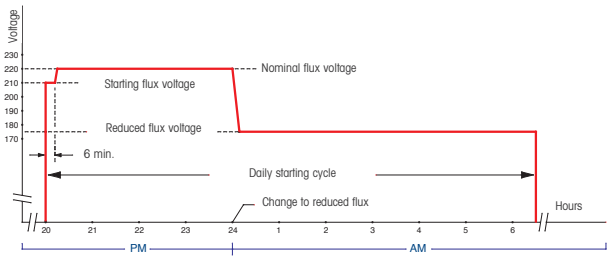
High-performance voltage stabiliser-dimmer system

Stabilisers-dimmers are items of equipment designed to generate an energy saving. Hence, the first condition to be met by a system with these characteristics is that it should be extremely efficient. To this end, own consumption must be minimal, raising the performance levels to the maximum. The high-performance flow stabilisers-dimmers over 99% at full load (tests at an official laboratory accredited by ENAC test no. IE-ITE2010100003). These values can be attained thanks to the use of power relays in the switching.

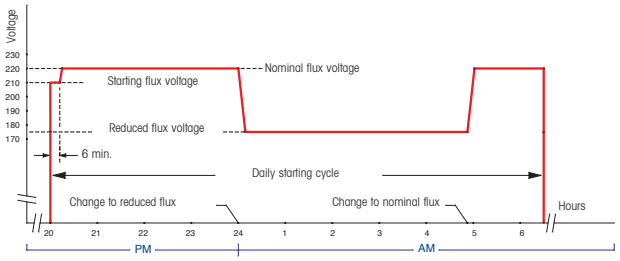
Features

a) Limiting the current peak when the lamps are switched on.
b) Stabilising the lighting line rated voltage.
c) Reduce the lighting line voltage during the hours of fewest users.

Operation graphic



Equipment start-up regime curve, rating, and reduced until sunrise of the ESDONI equipment..

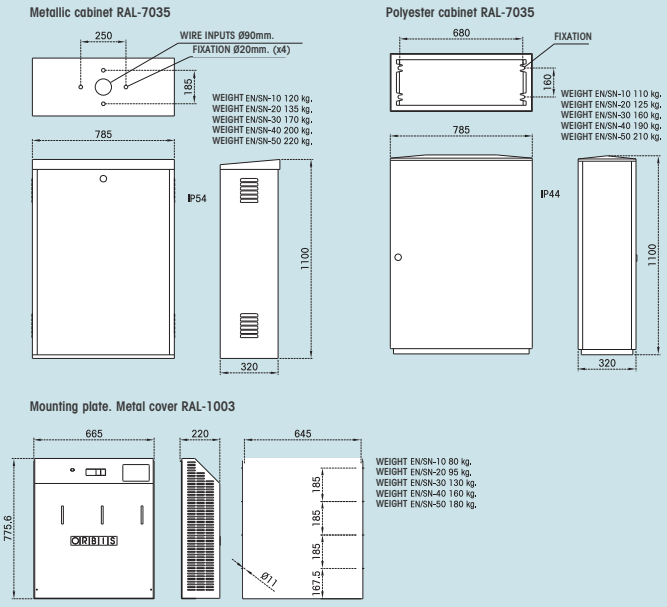


Start-up regime curve, rating, reduced and return to the rating regime of the ESDONI equipment.

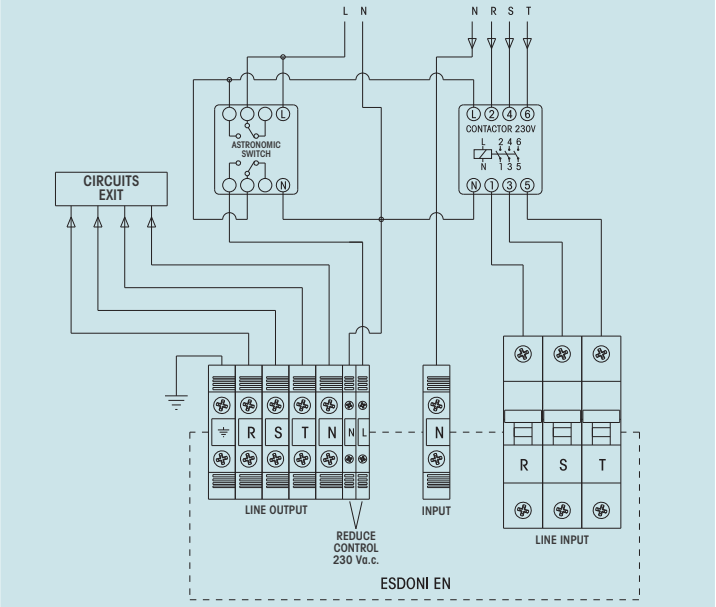
ESDONI-EN

Features	EN10	EN20	EN30	EN40	EN50	EN60
Power (kVA)	10	20	30	40	50	60
Power supply (V) Ve	3 x 400 + N	3 x 400 + N	3 x 400 + N	3 x 400 + N	3 x 400 + N	3 x 400 + N
Admissible variation (V)	± 7%	± 7%	± 7%	± 7%	± 7%	± 7%
Rated mode (V)	220/215/210	220/215/210	220/215/210	220/215/210	220/215/210	220/215/210
Regulation	±1%	±1%	±1%	±1%	±1%	±1%
Start-up mode (V)	210	210	210	210	210	210
R. HPSV mode (V)	175/185	175/185	175/185	175/185	175/185	175/185
Maximum reduction	Ve – 25%	Ve – 25%	Ve – 25%	Ve – 25%	Ve – 25%	Ve -25%
R. VM mode (V)	195/205	195/205	195/205	195/205	195/205	195/205
Equipment Imax (A)	3 x 15 = 45	3 x 30 = 90	3 x 45 = 135	3 x 60 = 180	3 x 75 = 225	3 x 90 = 270
Phase Imax (A)	15	30	45	60	75	90
Weight (Kg with polyester box)	110	125	160	190	210	220
Weight (Kg with metallic box)	120	135	170	200	220	230
Weight (Kg chassis)	80	95	130	160	180	190

Dimensions



Connection diagram



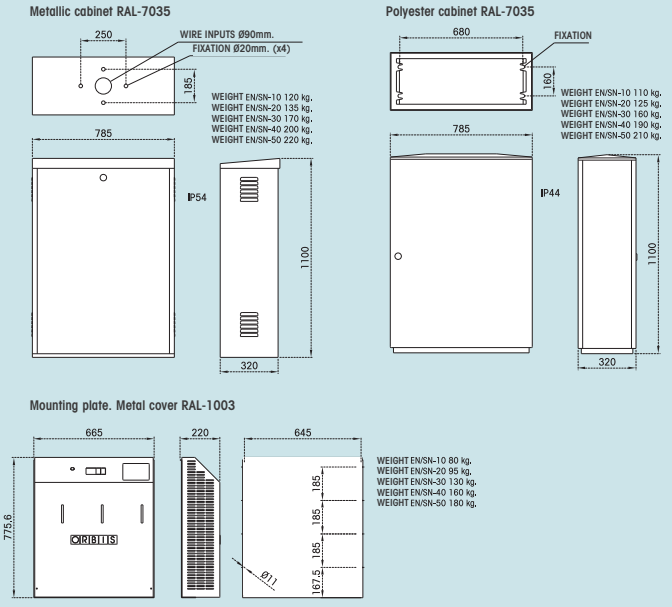
ESDONI-SN

Description

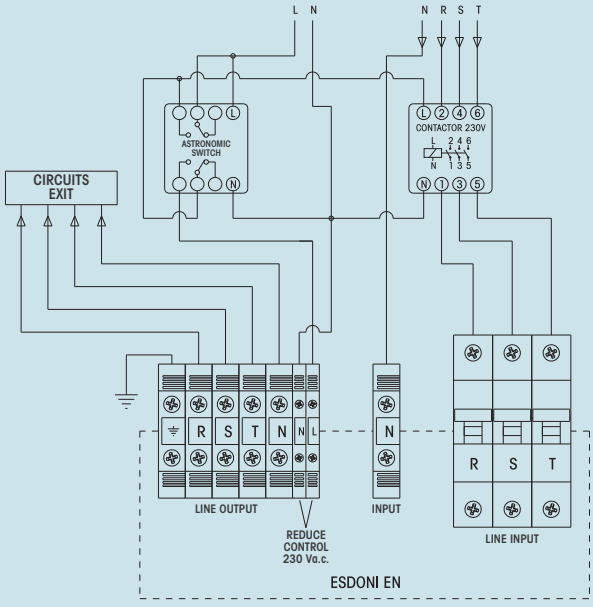
In some towns/cities the three-phase supply is 3 x 230 v/400 v as a norm. In these supplies the loads are disconnected between phases as the voltage between phases is 230 v. For these installations it is necessary to have flow stabilisers-dimmer equipment prepared for providing power without neutral. As in the other versions, the Esdonis-SN can be supplied without a cabinet, with a metallic cabinet or with a polyester cabinet.

Features	SN6	SN12	SN18	SN24	SN30	SN36
Power (kVA)	6	12	18	24	30	36
Power supply (V) Ve	3 x 230	3 x 230	3 x 230	3 x 230	3 x 230	3 x 230
Admissible variation (V)	± 7%	± 7%	± 7%	± 7%	± 7%	± 7%
Rated mode (V)	220/215/210	220/215/210	220/215/210	220/215/210	220/215/210	220/215/210
Regulation	±1%	±1%	±1%	±1%	±1%	±1%
Start-up mode (V)	210	210	210	210	210	210
R. VSAP mode (V)	175/185	175/185	175/185	175/185	175/185	175/185
Maximum reduction	Ve - 25%	Ve - 25%	Ve - 25%	Ve - 25%	Ve - 25%	Ve - 25%
R. VM mode (V)	195/205	195/205	195/205	195/205	195/205	195/205
Equipment Imax (A)	3 x 15/√3	3 x 30/√3	3 x 45/√3	3 x 60/√3	3 x 75/√3	3 x 90/√3
p/fase I Max (A)	15/√3	30/√3	45/√3	60/√3	75/√3	90/√3
Weight (Kg with polyester box)	110	125	160	190	210	220
Weight (Kg with metallic box)	120	135	170	200	220	230
Weight (Kg chassis)	80	95	130	160	180	190

Dimensions



Connection diagram



SINGLE PHASE LIGHT FLOW STABILIZERS-DIMMERS

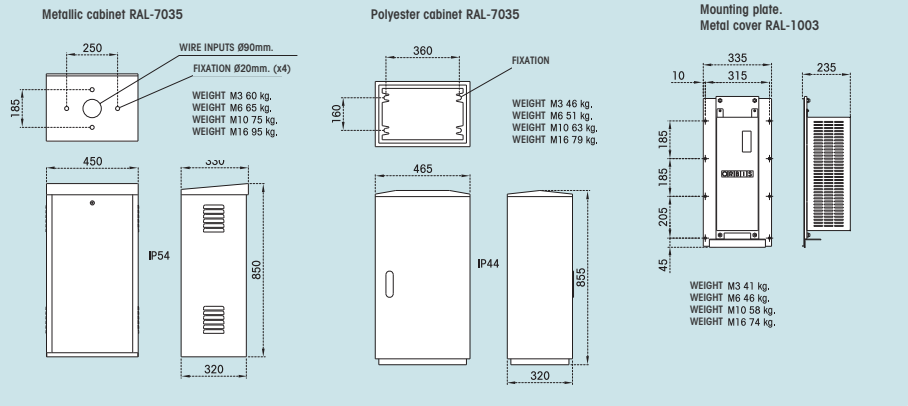
ESDONI-M

Description

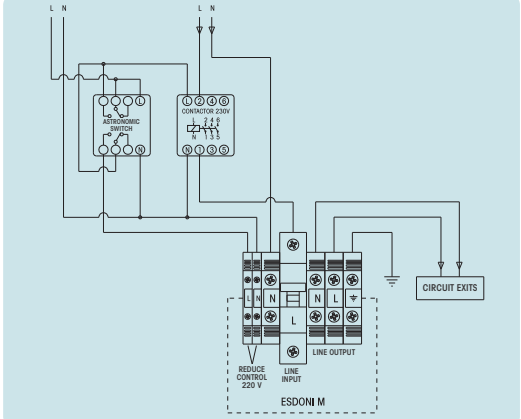
The ESDONI-M models are presented as the solution for savings by flux stabilisation and reduction in single-phase public lighting installations. They perform the same functions as the ESDONI-EN equipment for powers of up to 16.6 kVA. Its application is ideal for installations such as sports centre tracks, office building exterior lighting, small gardens and urbanisations etc.

Features	M3	M6	M10	M16
Power (kVA)	3,3	6,6	10	16,6
Power supply (V)	230	230	230	230
Admissible variation (V)	± 7%	± 7%	± 7%	± 7%
Rated mode (V)	220/215/210	220/215/210	220/215/210	220/215/210
Regulation	±1%	±1%	±1%	±1%
Start-up mode (V)	210	210	210	210
R. HPSV mode (V)	175/185	175/185	175/185	175/185
Maximum reduction	Ve – 25	Ve – 25	Ve – 25	Ve – 25
R. VM mode (V)	195/205	195/205	195/205	195/205
Equipment Imax (A)	15	30	45	75
Weight (Kg with polyester box)	46	51	63	79
Weight (Kg with metallic box)	60	65	75	95

Dimensions



Connection diagram



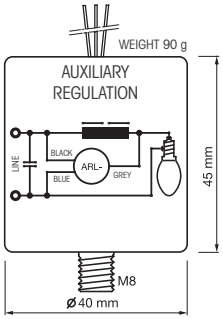
LIGHT FLOW STABILIZERS-DIMMERS ACCESORIES

Control Auxiliary ARL

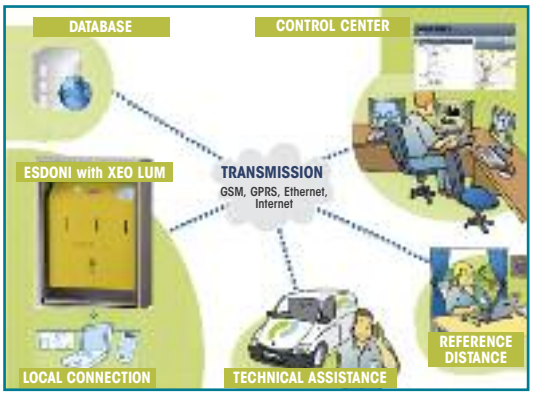
Public lighting installations comprise equipment with HPSV or MV lamps. Equipment with series ballast and HPSV lamps can be regulated and their power reduced to 40% of the rated value. Equipment with MV lamps and series ballast can be reduced to 25% of their rated power value. Reductions of below 195 V produce switch off.

The regulation auxiliaries allow voltage to be reduced to 175 V without any undesired switch-off or instability and can produce savings of up to 35% with VM lamps for voltage values of 175V. The incorporation of regulation auxiliaries can produce similar savings figures with HPSV and MV lamps in installations sharing both types or only with MV lamps.

ARL-1: Lamps of 80 and 125 W.
ARL-2: Lamps of 250 and 450 W.



XEO LUM MODULAR



Description

The modular Xeo Lum enables us both to modify the internal parameters of the Esdoni high-performance flow stabiliser-dimmer (voltage level stabilised, maximum dimming and dimming staggered by time periods…) and to interact with the command centre (resettable tripping breaker, magnetothermal, astronomic programming alarms etc.)

All these options provide us with the appropriate lighting for the requirements of the street both generally and from time to time, without the need to send a maintenance technician to the installation. To adapt this type of installations, consult the Orbis' after-sales service.

The Modular Xeo Lum affords the possibility of incorporating a remote control management system when required for installations which may or may not have a Stabiliser-Dimmer, whether it is an Esdoni or equipment from some other manufacturer.

The Modular Xeo Lum can be adapted to any existing control centre owing to its size of 9 modules and instalation on a Din rail.

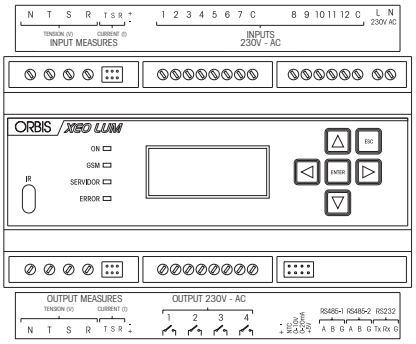
Thanks to this modular assembly type we can integrate a remote management system at conventional control centres or at those which incorporate a savings system.

The modular system incorporates the main functions required in remote management such as consumption, voltages, powers, coseins per phase, input and output status etc. Internally it incorporates two complete network analysers to measure both the power input and output at lights. All this information can be viewed on the display.

One of the main characteristics in the connection is the number of auxiliary outputs and inputs.

- 10 auxiliary inputs
- 4 auxiliary outputs
- 2 RS 485 Ports (Modbus expansions, peripherals and another for Esdoni card control)
- 1 Rs 232 port

Terminals



The common input terminals are independent

Examples of Installation

Control centre without savings system:
In this event we can have the remote management and integration of the alarms, astronomic programming, consumption, voltages, auxiliary outputs…

Two-level control centre with command line:
With the Modular Xeo Lum we can carry out the programming, both astronomic and with the reduced timetable, whenever it is two level with a command line (a very useful functionality for comparing consumption before and after starting the reduction).

Control centres which have a Stabiliser-Dimmer:
In the event of installing a Modular Xeo Lum at control centres which are endowed with Esdoni high performance flow Stabiliser-Dimmer systems, we are able to endow the installation with high energy efficiency, expanding the possibilities both in the management of installations as well as in the control and maintenance thereof.

ORBICOM / NODITEL

Description

The remote management system for electrical boards is a product designed to perform the functions of measurement analyser and fault detection, together with their remote management via GSM communications, thus supplementing the ESDONI flux stabilisers-reducers equipment offer. Its main goal is to have the main lighting board parameters available from a central post and mobile units, together with certain situations that could require immediate technical assistance or awareness, such as protection trips, board opening, wiring theft and lamp replacement.

The remote management system consists of two main equipment units:

A master designated ORBICOM is responsible for carrying out electrical measurements, providing direct information on its display and establishing communications; and also several slave nodes designated NODITEL that are connected to the various board lines and which monitor operations and their protections and continually transmit operating and anomaly information to the master.

Example of controlling by means of ORBICOM

NOTE: The operation of the equipment is subject to the characteristics of the GSM communication of the country. Other configurations are possible. Consult.

Software

In order to obtain enhanced control of the installations that are fitted with ORBICOM equipment, a GSM modem may be connected to this, which will send information to a central computer as well as to the various maintenance teams' mobile telephones via SMS.

Commands can be sent to the installations at the same time as alarms and information are being issued from them. In order to better define the parameters required by each maintainer, such as alarms, load curves and SMS etc.

A control software is available that allows: the creation of an independent file per board / display reading in local or remote / command transmission / the configuration of each ORBICOM / data and fault recording / graphical parameter display / astronomic or fixed lighting programming.

REMOTE MANAGEMENT SYSTEMS FOR ELECTRICAL BOARDS

ORBICOM

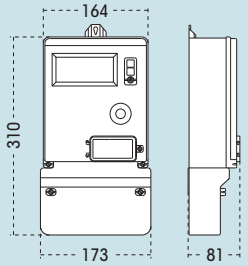
The master module, designated ORBICOM, is an autonomous element that is installed on the lighting board and which performs the following functions:

- It measures the line voltage in true r.m.s. value between each phase and neutral, reaches 255 V.
- It measures the active power in each of the three phases.
- Maximum current: 80 A per phase.
- It will calculate the cos φ for each of the three phases.
- It will calculate the active power in each of the three phases, between each phase and neutral.
- It will calculate the total active power.
- It incorporates configurable astronomical switch on and switch off operations.
- It will measure the voltage in true r.m.s. value between each phase and neutral at the lighting line outputs, when installed with ESDONI equipment, reaches 255 V.
- It calculates the savings for each phase in %, when installed with ESDONI equipment.
- It calculates the total savings in % when installed with ESDONI equipment.
- Intruder, wiring theft and blown lamp alarms.
- Connection for up to 15 NODITEL units per RS-485 port.
- Direct event reading on the equipment display.
- Remote data transmission to a central unit over RS-232 modem, via GSM modem, telephone wires etc.
- Remote programming of switch on and switch off in astronomical or fixed mode.

Features

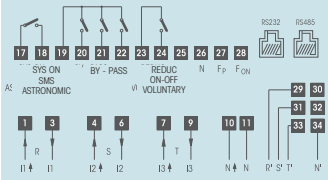
Rated line voltage	3 x 230/400 Va.c.
Measured voltage	3 x 230 Va.c. + N
Maximum current per phase	80 A
Frequency	50 Hz
Own consumption	Approx. 20 VA
Battery back up	6 years using a lithium battery
Operational precision	< ±0, 5 s/24 h at 23 ºC
Operating temperature	-10 ºC to + 45 ºC
Precision accuracy class	Class 1 active power - Class 2 reactive power
Protection class	II adequate mounting
Protection type	IP 51
Mechanical strength	IK 06
Installation	Fastening triangle in surface according to DIN 43857

Dimensions



Weight: 2777 gr.

Connection diagram



NODITEL

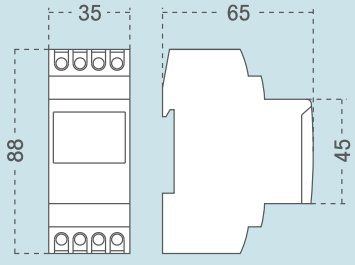
Reduc on/off voluntario: ON/OFF Voluntary reduction. The nodes designated NODITEL are elements that are supplementary to the ORBICOM that enable system functions to be to be expanded, acquiring data and transmitting them to the master. Their most important specifications and functions are:

- Nodes that communicate with the ORBICOM via RS-485.
- Detection of fuse, breaker earth-leakage breaker failures etc. (by detecting voltages of less than 160V R.M.S.).
- Each NODITEL includes DIP switches for address programming.
- The RS-485 can connect to a maximum of 15 NODITEL slaves.
- Direct power supply connection to the 230 V grid.
- When power is applied to the module, the green LED is switched on indicating power is present. If there are no problems, the Green LED will flash at a rate of 0.5 seconds ON/1 second-OFF.
- If the unit detects a problem, for example, a missing or low (less than 160 V) phase, the red LED ROJO will flash at a higher rate (0.1 seconds Ton and 0.1 seconds Toff).
- Each module can detect the voltage in up to three phases in the same line, which is R, S and T with its neutral, or between phase and neutral in single-phase lines.

Features

Rated line voltage	230 Va.c.
Measured voltage	3 x 230 Va.c. + N
Alarm voltage per phase	160 Va.c.
Frequency	50 Hz
Own consumption	Approx. 5 VA
Operating temperature	-10 ºC to + 45 ºC
Precision class	Class 1
Protection class	II adequate mounting
Protection type	IP 20
Mechanical strength	IK 02
Installation	On the top of the symmetrical profile measuring 35mm using EN60715. DIN Rail.

Dimensions



Weight: 223 gr.

KIT SOLARGEST
REMOTE MANAGEMENT OF PHOTOVOLATIC PLANTS BY SMS

Description

The Kit Solargest is a new, innovative remote management product designed to control and administer single-phase or three-phase photovoltaic installations (direct/indirect) by way of the broadest, most economical tranmission technology (SMS).

Features

Notifies when there is no energy production even when there is sun:
Thanks to the solar radiation sensor and the energy meter the system is capable of analysing whether something isn't working properly. If it is sunny and the energy level produced by the solar panels is low, the system will send an SMS notification message.

Calculates the income per generation:

When it asked for information the kit sends an SMS with the production value in Euros or in some other currency. Thanks to the energy meter connection, by knowing the price of the KWH, the Solargest kit can be programmed to calculate the generation and send the information periodically (e.g. every week or month).

It is simple and functional:

It is assembled on the DIN rail and is very easy to install. Furthermore, it is compatible with all European mobile phone operators and is easy to programmne via SMS.

It also works as an antitheft alarm:

Thanks to a digital input (where it is possible to connect a microswitch, presence detectors, optical barrier etc..) It monitors whether anyone is trying to steal the solar panels or entering a forbidden area. The Solargest kit sends an alarm SMS to a phone and activetes a relay where it is possible to connect a sound alarm and/or a flashing light.

Measures the instantaneous power produced:

By calling the Solargest kit, in a few seconds an SMS will be received indicating the instantaneous power produced.

Warns whether there is a blackout:

Thanks to an integrated battery, the Solargest Kit informs if there is no power supply, meaning that it is possible to access the network immediately. If, in the meantime, the normal power supply conditions return, it can avoid system supervision thanks to another message which will inform about the new situation.

INSTRUMENTATION

PÁG.54 | DIGITAL VOLTMETERS / AMPMETERS AND FREQUENCYMETERS

METRA Q-H / METRA M-H

METRA Q-A / METRA M-A

METRA Q-V / METRA M-V

METRA Q-V+A / METRA Q-V/A
METRA M-V+A / METRA M-V/A

METRA Q-V/A-R / METRA M-V/A-R

PÁG.55 | MODULAR NET ANALIZER

ANRET M-22

ANRET M-22-BUS

ANRET M-63

ANRET M-90A-BUS

ANRET Q / ANRET M

ANRET Q-BUS / ANRET M-BUS

ANRET Q-R / ANRET M-R

ANRET Q-MULTI / ANRET M-MULTI

DIGITAL VOLTMETERS / AMPMETERS AND FREQUENCYMETERS

	METRA Q-H METRA M-H	METRA Q-A METRA M-A	METRA Q-V METRA M-V	METRA Q-V+A / METRA Q-V/A METRA M-V+A / METRA M-V/A	METRA Q-V/A-R METRA M-V/A-R
					
Description	FREQUENCYMETER	AMPMETER	VOLTMETER	VOLTMETER/ AMPMETER	VOLT./ AMPM. WITH RELAY

Features

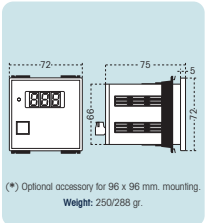
Measuring elements for electrical parameters, such as voltage, current and frequency. Installation either DIN rail or panel. For alternative or direct current, up to 4,000 amps via a current transformer

Rated voltage	115/230 Va.c / 50-60 Hz	115/230 Va.c / 50-60 Hz	115/230 Va.c / 50-60 Hz	115/230 Va.c. / 50-60 Hz	115/230 Va.c / 50-60 Hz
Transformers range selectable		**Metra Q-AxA / Metra M-AxA:** 5-10-25-50-60-100-125-150-200-250-300-400-500-600-700-800-1000-1500-2000-2500-4000/5 A		5-10-25-50-60-100-125-150-200-250-300-400-500-600-800-1000-1500-2000-2500-4000/5 A	5-10-25-50-60-100-125-150-200-250-300-400-500-600-800-1000-1500-2000-2500-4000/5 A
Operating temperature	-10 ºC to +50 ºC	-10 ºC to +50 ºC	-10 ºC to +50 ºC	-10 ºC to +50 ºC	-10 ºC to +50 ºC
Protection Type / Class	IP 40 / 2	IP 40 / 2	IP 40 / 2	IP 40 / 2	IP 40 / 2

Models

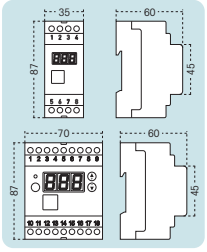
	H (Frequencymeter)	**A** (Ampmeter)	**V** (Voltmeter)	**V+A** (Voltmeter and Ampmeter) **V/A** (Voltmeter or Ampmeter)	**V/A-R** (Voltmeter or Ampmeter with programmable out put relay)
Q Panel model (72x72 mm.)*	**METRA Q-H:** Accuracy 0,1 Hz.	**METRA Q-A 10A AC:** Up to 10 A c.a. Accuracy 10 mA. **METRA Q-A 10A DC:** Up to 10 A c.c. Accuracy 10 mA. **METRA Q-A xA:** Up to 4000/5 A c.a.	**METRA Q-V 1V DC:** Up to 1 Vc.c. Accuracy 1 mV. **METRA Q-V 10V DC:** Up to 10 Vc.c. Accuracy 10 mV. **METRA Q-V 100V DC:** Up to 100 Vc.c. Accuracy 0,1 V. **METRA Q-V 600V DC:** Up to 600 Vc.c. Accuracy 1 V.	**METRA Q-V+A:** Voltmeter up to 600 Va.c and amp meter by transformers **METRA Q-V/A:** Voltmeter up to 600 Va.c. or amp meter by transformers.	**METRA Q-V/A-R:** 600 Va.c. / Amp meter by transformers with programmable out put relay.
M Rail DIN model	**METRA M-H:** Accuracy 0,1 Hz.	**METRA M-A 10A AC:** Up to 10 A c.a. Accuracy 10 mA. **METRA M-A 10A DC:** Up to 10 A c.c. Accuracy 10 mA. 72x72 mm. **METRA M-A xA:** Up to 4000/5 A c.a.	**METRA M-V 1V DC:** Up to 1 Vc.c. Accuracy 1 mV. **METRA M-V 10V DC:** Up to 10 Vc.c. Accuracy 10 mV. **METRA M-V 100V DC:** Up to 100 Vc.c. Accuracy 0,1 V. **METRA M-V 600V DC:** Up to 600 Vc.c. Accuracy 1 V.	**METRA M-V+A:** Voltmeter up to 600 Va.c and amp meter by transformers. Modular. **METRA M-V/A:** Voltmeter up to 600 Va.c or amp meter by transformers. Modular.	**METRA M-V/A-R:** 600 Va.c / Amp meter by transformers with programmable out put relay.

Dimensions



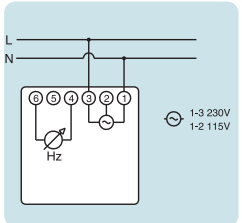
(*) Optional accessory for 96 x 96 mm. mounting.

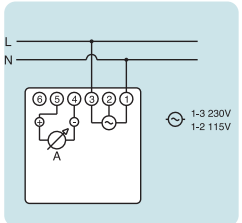
Weight: 250/288 gr.

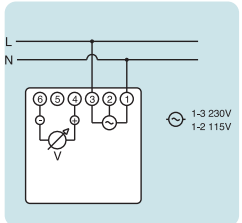


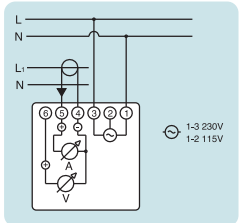
Weight: 200/314 gr.

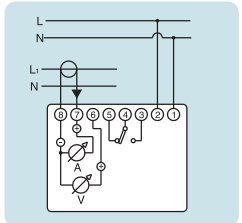
Connection diagram

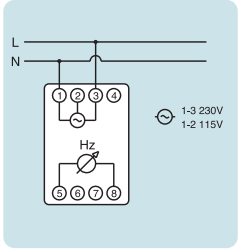


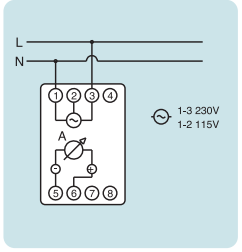


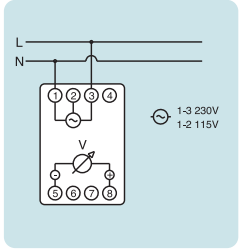


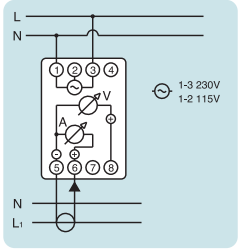


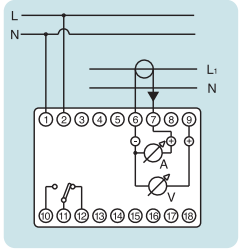










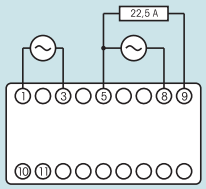
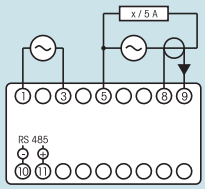
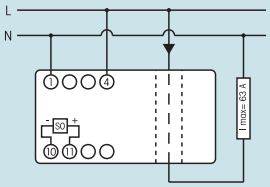
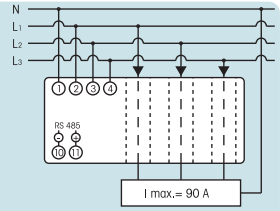
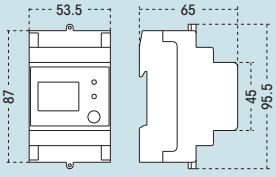
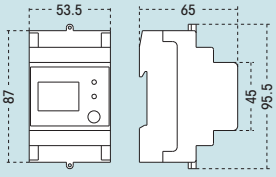
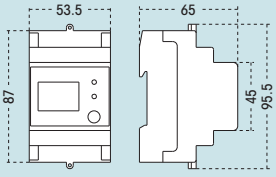
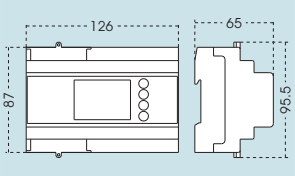


MODULAR NET ANALIZER

	ANRET M-22	ANRET M-22-BUS	ANRET M-63	ANRET M-90A-BUS
				
Description	SINGLE PHASE 22A	SINGLE PHASE 22A WITH COMUNICATION BUS	SINGLE PHASE 63A WITH PULSE OUTPUT	THREE PHASE 90A WITH COMMUNICATION BUS

Multi-function measuring elements for electrical parameters in single or three-phase systems. From 22 amps direct measurement up to 9,999 amps via a current transformer. Communication and DIN rail installation options

Features

	ANRET M-22	ANRET M-22-BUS	ANRET M-63	ANRET M-90A-BUS
Rated voltage	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	400 Va.c. / 50-60 Hz
Intensity Input	Ib = 5A; Imax = 22,5A direct connection	Ib = 5A; Imax = 22,5A direct connection or In = 5A; I max = 6A by transformers x/5A.	Ib = 10A; Imax = 63A by cable pass	Ib = 10A; Imax = 90A by cable pass
Transformers range selectable	-	1 … 9.999/5A	-	-
V max	300 V	300 V	230 V	Three Phases net analizer 440 V
Parameters	- Voltage V (TRMS) - Current A (TRMS) - Power W – Power factor (cos φ) - Energy Wh - Frequency Hz	- Voltage V (TRMS) - Current A (TRMS) - Power W – Power factor (cos φ) - Energy Wh - Frequency Hz	- Voltage V (TRMS) - Current A (TRMS) - Power W – Power factor (cos φ) - Energy Wh - Frequency Hz	- Voltage V (TRMS) – Phase sequence - Current A (TRMS) – Active Power W – Reactive Power Var – Apparent Power VA – Active Energy Wh - Reactive Energy VArh – Power factor (cos φ) – Phase angle - Frequency Hz
Display	LCD, 7 + 5 digits retro illuminated screen	LCD, 7 + 5 digits retro illuminated screen	LCD, 7 + 5 digits retro illuminated screen	LCD retro illuminated screen
Operating temperature	-10 ºC to + 45 ºC	-10 ºC to + 45 ºC	-10 ºC to + 45 ºC	0 ºC to + 45 ºC
Installation/ Module numbers	DIN/3	DIN/3	DIN/3	DIN/7
Protection type/ Protection class	IP 20/2	IP 20/2	IP 20/2	IP 20/2
Optional	-	Software in order to read through RS485	-	Software in order to read through RS485
Connection diagram				
Dimensions	 **Weight:** 259 gr.	 **Weight:** 300 gr.	 **Weight:** 250 gr.	 **Weight:** 583 gr.

THREE PHASE NET ANALIZER

SINGLE PHASE/THREE PHASE	SINGLE PHASE/THREE PHASE	SINGLE PHASE/THREE PHASE	THREE PHASE
ANRET Q ANRET M	**ANRET Q-BUS ANRET M-BUS**	**ANRET Q-R ANRET M-R**	**ANRET Q-MULTI ANRET M-MULTI**
			
BY TRANSFORMERS	BY TRANFORMERS WITH COMMUNICATION BUS	BY TRANFORMERS WITH 2 OUTPUT RELAYS	WITH MULTIPLE LED DISPLAY BY TRANSFORMERS

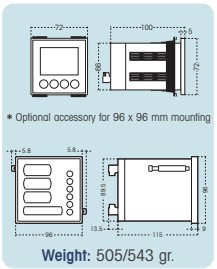
Description

Multi-function measuring elements for electrical parameters in three-phase systems up to 9,999 amps via a current transformer. Communication, DIN rail and rear-board installation options.

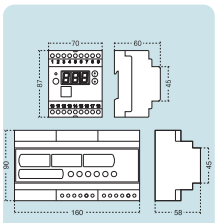
Features

Rated voltage	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	230 Va.c. / 50-60 Hz	115/230 Va.c. / 140/300V c.c. / 50-60 Hz
Intensity Input	Ib = 5A; Imax = 9999A by indirect connection	Ib = 5A; Imax = 9999A by indirect connection	In = 5A; Imax = 9999A by indirect connection	In = 5A; Imax = 9999A by indirect connection
V max	550 V	550 V	550 V	500 V
Parameters	- Voltage V (TRMS) – Sequence and phase - Current A (TRMS) – Active Power W – Reactive Power Var – Apparent Power VA – Active energy Wh – Reactive energy VArh – Power factor (cos φ) – Phase angle - Frequency Hz	- Voltage V (TRMS) – Sequence and phase - Current A (TRMS) – Active Power W – Reactive Power Var – Apparent Power VA – Active Energy Wh – Reactive Energy VArh – Power Factor (cos φ) – Phase angle - Frequency Hz	- Voltage V (TRMS) – Sequence and phase - Current A (TRMS) – Active Power W – Reactive Power Var – Apparent Power VA – Active Energy Wh – Reactive Energy VArh – Power Factor (cos φ) – Phase Angle - Frequency Hz	- Voltage V (TRMS) – Sequence and phase - Current A (TRMS) – Active Power W – Reactive Power Var – Apparent Power VA – Active Energy Wh – Reactive Energy VArh – Power Factor (cos φ) – Phase Angle - Frequency Hz
Display	LCD retro illuminated screen	LCD retro illuminated screen	LCD retro illuminated screen	LED
Operating temperature	-10 °C to + 45 °C	-10 °C to + 45 °C	-10 °C to + 45 °C	0 °C to + 45 °C
Installation / Module numbers	DIN / 3	DIN / 3	DIN / 3	DIN / 9
Protection type / class	IP 20 / 2	IP 20 / 2	IP 20 / 2	IP 20 / 2
Optional	-	Software for reading via RS485	-	-

Dimensions

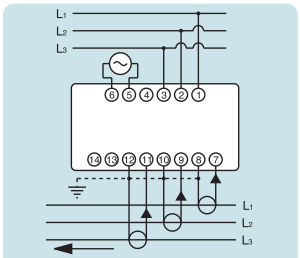


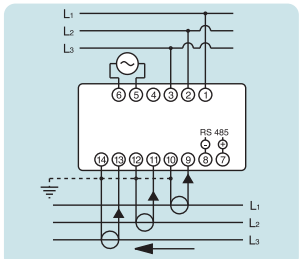
Weight: 505/543 gr.

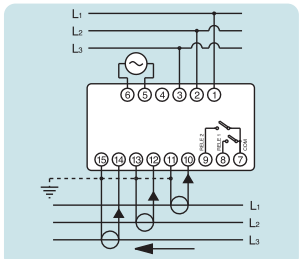


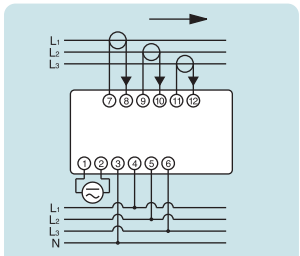
Weight: 500/548 gr.

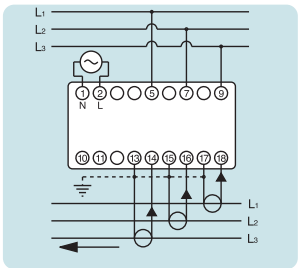
Connection diagram

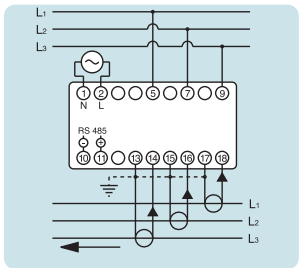


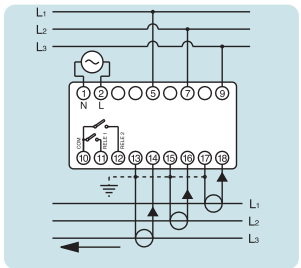


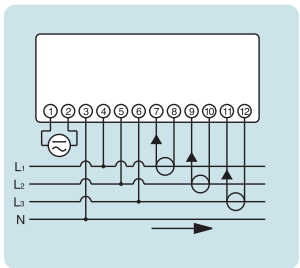












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