



KITS & COMPONENTS

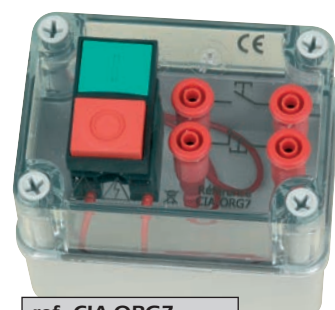
2023



INDUSTRIAL AUTOMATION COMPONENTS

CONTROL AND SIGNAL UNITS

Ref	Characteristics	Comments
CIA-ORG1	Black pushbutton with NO contact	/
CIA-ORG2	Black pushbutton with NO+NO contact	/
CIA-ORG3	Black pushbutton with NO+NC contact	/
CIA-ORG4	Red pushbutton with NC contact	/
CIA-ORG5	Emergency stop pushbutton - NC contact	Turn to release
CIA-ORG6	Emergency stop pushbutton - NC contact	Key to release
CIA-ORG7	Double pushbutton NO+NC contact	/
CIA-ORG8	ON pushbutton OFF pushbutton, 24V LED	3 units in 1 box
CIA-ORG9	Double pushbutton NO+NC contact	With 24V light indicator
CIA-ORG10	2 positions selector switch NO	0 – 1 Positions
CIA-ORG11	3 positions selector switch NO+NO	1 – 0 – 1 Positions
CIA-ORG12	3 positions selector switch NO+NC	1 – 0 – 1 Positions
CIA-ORG13	Indicator light with green LED	24V– 50 Hz
CIA-ORG14	Indicator light with red LED	24V– 50 Hz
CIA-ORG15	Indicator light with white LED	24V– 50 Hz
CIA-ORG16	Indicator light with yellow LED	24V– 50 Hz
CIA-ORG17	Indicator light with blue LED	24V– 50 Hz

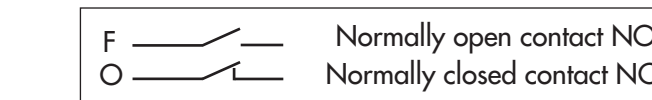


These components are in plastic cases with a transparent cover.
 Characteristics are engraved on the cover.
 Connection is made with 4mm safety terminals.
 Control circuit in red.
 Main circuit or power circuit in black.

POWER CONTACTOR

Ref	Type	Current AC1	Power AC3	Auxiliary	Coil(s) voltage
CIA-C12	standard	25A	5.5kW / 400V	2 NO + 1 NC	24V–50/60Hz
CIA-C25	standard	40A	11kW / 400V	2 NO + 1 NC	24V–50/60Hz
CIA-C212	reversing	25A	5.5kW / 400V	2 NO + 2 NC	24V–50/60Hz
CIA-CT212	Star / Delta	25A	5.5kW / 400V	1NC+1NC+tempo	24V–50/60Hz

The reversing and star/delta contactor sets are mechanical locking of positions.
 Other voltage upon request.



AUXILIARY CONTACT BLOCKS FOR CONTROL CIRCUITS (10A MAX)

Ref	NO Contacts	NC Contacts	Tempo delay	Coil(s) voltage
CIA-R40	4	0	NO	24V – 50/60 Hz
CIA-R31	3	1	NO	24V – 50/60 Hz
CIA-R22	2	2	NO	24V – 50/60 Hz
CIA-R42	4	2	NO	24V – 50/60 Hz
CIA-R44	4	4	NO	24V – 50/60 Hz
CIA-R62	6	2	NO	24V – 50/60 Hz
CIA-RT40	4	0	NC + NO work	24V – 50/60 Hz
CIA-RR40	4	0	NC + NO stand by	24V – 50/60 Hz
CIA-RT43	4	3	NC + NO work	24V – 50/60 Hz
CIA-RR43	4	3	NC + NO stand by	24V – 50/60 Hz

Other voltage upon request.



AC THERMAL-MAGNETIC CIRCUIT BREAKERS

Manoeuvrables sans ouvrir les boîtiers.

Ref	TYPE	Rating Current	Curve	Breaking capacity	230V/30mA residual current circuit breaker
CIA-MT36	2-pole	6A	C	6000A	YES
CIA-MT37	2-pole	10A	C	6000A	YES
CIA-MT38	2-pole	16A	C	6000A	YES
CIA-MT97	2-pole	2A	C	6000A	NO
CIA-MT99	2-pole	4A	C	6000A	NO
CIA-MTD8	2-pole	4A	D	10 000A	NO
CIA-MT20	2-pole	6A	C	6000A	NO
CIA-MT21	2-pole	10A	C	6000A	NO
CIA-MT92	2-pole	16A	C	6000A	NO
CIA-MT10	3-pole	2A	C	6000A	NO
CIA-MT12	3-pole	4A	C	6000A	NO
CIA-MTD9	3-pole	4A	D	10 000A	NO
CIA-MT13	3-pole	6A	C	6000A	NO
CIA-MTD1	4-pole	6A	C	6000A	YES
CIA-MT23	4-pole	2A	C	6000A	NO
CIA-MT25	4-pole	4A	C	6000A	NO
CIA-MTD3	4-pole	4A	D	10 000A	NO
CIA-MT27	4-pole	6A	C	6000A	NO



INDUSTRIAL AUTOMATION COMPONENTS

3-POLE THERMAL OVERLOAD RELAYS

Ref	TYPE	Relay setting range	Auxiliary
CIA-T3	Compensated	0.25 to 0.40A	1NC + 1NO
CIA-T4	Compensated	0.40 to 0.63A	1NC + 1NO
CIA-T5	Compensated	0.63 to 1A	1NC + 1NO
CIA-T6	Compensated	1 to 1.60A	1NC + 1NO
CIA-T8	Compensated	2.5 to 4A	1NC + 1NO

Other voltage upon request.

INSTANTANEOUS RESIDUAL CURRENT CIRCUIT PROTECTION SWITCHES

Ref	TYPE	Rating max	Sensitivity AC	Voltage rating
CIA-ID64	2-pole	25A	30mA	240V
CIA-ID92	4-pole	25A	30mA	400V

DISCONNECTING SWITCHES

Ref	TYPE	Number of poles	Rating current
CIA-SE0	Emergency stop switch	3	25A
CIA-SE1	Emergency stop switch	4	25A
CIA-SE3	Emergency stop switch	4	25A

SAFETY TRANSFORMERS

Ref	Power	TYPE	Primary	Secondary
CIA-T24	120VA	single-phase	230V	24V
CIA-T220	300VA	single-phase	230V	230V
CIA-TT400	250VA	3-phase	400V	3x24V

OTHERS COMPONENTS

Ref	Description	Comments
CIA-DIV1	Single pole + neutral fuse switch disconnector	without cartridge fuse
CIA-DIV2	3-pole + neutral fuses switch disconnector	without cartridge fuse
CIA-DIV3	bridge, single pole (4 diodes)	35A
CIA-DIV4	Diodes bridge, 3-phase (6 diodes, Graetz bridge)	50A



ref. CIA-T6



ref. CIA-ID92



ref. CIA-SE0



ref. CIA-T24



ref. CIA-DIV1



ref. CIA-DIV4

THERMAL-MAGNETIC CIRCUIT-BREAKERS FOR MOTOR

Ref	Control	Power rating of 3-phase motor	Setting range of thermic trip
CIA-DM3	Internal pushbutton	90W / 400V	0.25 to 0.40A
CIA-DM6	Internal pushbutton	370W / 400V	1 to 1.60A
CIA-DM8	Internal pushbutton	1200W / 400V	2.5 to 4A

Other voltage upon request.



ref. CIA-DM8



ref. CIA-A4

MOBILE POWER SUPPLY BOX

Ref	Type	Input power cable	Control	Outputs	Protection
CIA-A2	Single-phase	With blue socket	On/Off+emergency stop	Terminals	Circuit-breaker
CIA-A4	3-phase	With red socket	On/Off+emergency stop	Terminals	Circuit-breaker

BENCHTOP MOTORS

Ref	Type	Voltage
CIA-MO220	Single-phase	230V
CIA-TR924	3-phase	3 x 24V
CIA-TR690	3-phase	400V / 690V

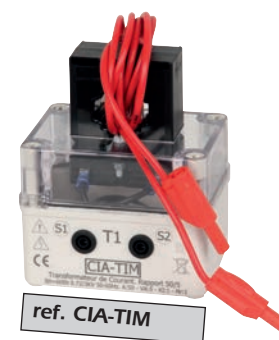


ref. CIA-TR690

CURRENT TRANSFORMERS

A Current transformers unit delivers at the secondary a standard current proportional to the primary current (50/5 rate). Safety lead is delivered with the unit (single-phase = 1 / 3-phase = 3) but you can use your own electrical conductor. A maximum of 10 whorls of a 2.5mm² conductor can be done through the torus. The secondary of the current transformer is wired on 2 safety sockets 4mm.

Ref	Type	Characteristic
CIA-TIM	Single-phase	Current transformer (50/5 rate)
CIA-TIT	3-phase	Current transformer (50/5 rate)



ref. CIA-TIM



ref. CIA-TIT

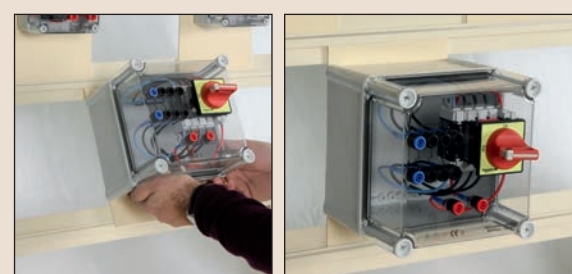
COMMUNICATING CIRCUIT BREAKER CONTACTOR

CONTYS from mecatronics is a motor starter which combines mechanical, electrotechnical and electronic technologies. It is designed to be used for directly starting up motors of up to 3kW. This compact device combines power functions (disconnecting switch, commutation) and control functions (protection). Motor settings can be displayed and programmed via a numeric screen. Supplied with SoMove.



ref. CONTYS

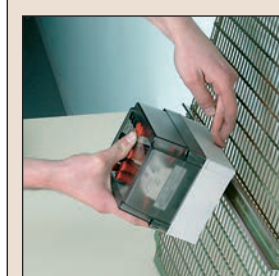
OPTION FOR HANGING ON FRAMES



Example of an industrial component (Ref. CIA-SE3) with hanging option on panel of 250mm high. You can attach your CIA components on frame and facilitate wirings and tests. If you want this option, you have to add -PLA at the end of the reference of the selected component.

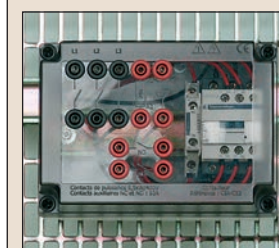
Ex : CIA-SE3-PLA

OPTION FOR HANGING ON RAILS



Example of industrial component (Ref. CIA-C12) with hanging option for fast attachment onto an universal rail. In this way, you can attach your various industrial components onto a grid in order to make wiring and testing easier. To order this option, simply add -FIX to the end of the reference.

Ex : CIA-C12-FIX



FRAME FOR COMPONENTS WITH -FIX OPTION



This support allows the positioning of the components equipped with the hanging on rails option presented on the next page.

- Brushed aluminum profile support
- Equipped with 4 wheels (2 with brakes)
- Equipped with 6 dyn rails
- Dimensions: 1840 x 750 x 750mm

ref. SUP-DYN

ASYNCHRONOUS MOTOR START-UP KIT



ref. KI-BASE Basic kit required

Male and female industrial rapid connectors, with mobile covers and fixed bases, are supplied with the KIT. They are used for connections between the following:

- cabling plate
- pushbuttons
- switches
- indicator lights
- motor.

A teaching manual including diagrams, characteristics and instructions for each component is supplied with the kit. This industrial kit includes actuators and control components for studying and creating the main start-up diagrams for asynchronous motors:

- direct start-up, with or without reversal of the direction of rotation.
- star/delta start-up
- star/delta start-up with reversal of the direction of rotation

COMPOSITION

- 1 25A-400V 4-pole disconnector
- 1 two-pole fuse holder
- 2 4-pole fuse holders
- 3 25A power contactors with 24V coil
- 2 auxiliary contactors with 24V coil
- 1 unit of auxiliary contacts with timing from 1 to 30 s
- 3 units of auxiliary contacts 1 "O" + 1 "C"
- 1 4 to 6A thermal relay with support
- 1 230V/24V - 100 VA single-phase transformer for control circuit
- 1 plate, dimensions 600 x 500 mm
- 2m cable duct
- 1 set of 4-mm connection terminals
- 1 set of pushbuttons, emergency stop and indicator lights for controlling and viewing all operations of the wired frame.
- 1 set of industrial connectors for connecting the controls & motor from the frame.
- 4m DIN rail mounting

SELECT THE CONTROLLER AND STARTER KITS TO BE COMBINED WITH YOUR BASIC KIT

SCHNEIDER® ATV312 CONTROLLER + STARTER



This addition to the KI-BASE kit includes:

- A Schneider® Altivar ATV312 controller for 1500W rotary machines. Single-phase mains power supply 230V AC 50-60 Hz. 3 x 230V AC outputs. A potentiometer on the front enables local setting of the controller and rotation speed control
- a USB cable and the SoMove® software.
- a GV2 motor circuit-breaker.
- A Schneider® soft starter 3 x 400 V - 6 A. Adjustment of acceleration, deceleration time and couple by front potentiometer.

ref. KI-VAR1

SCHNEIDER® ATV32 CONTROLLER + STARTER



This addition to the KI-BASE kit includes:

- A Schneider Altivar ATV32 controller for 1500W rotary machines. Single-phase mains power supply 230V AC 50-60 Hz. 3 x 230V AC outputs.
- A graphic terminal which connects directly to the controller front. Very simple to use, it lets you program the controller easily locally. A front potentiometer enables motor rotation speed adjustment.
- A USB cable and the SoMove software.
- A GV2 motor circuit-breaker.
- A Schneider® soft starter 3 x 400 V - 6 A. Adjustment of acceleration, deceleration time and couple by front potentiometer.

ref. KI-VAR32

SIEMENS® CONTROLLER + SCHNEIDER® STARTER



This addition to the KI-BASE kit includes:

- A Siemens® G120 controller for 1500W rotary machines. Power supply 3 x 400V AC 50/60 Hz. 3 x 400V AC outputs. A potentiometer on the front enables local setting of the controller and rotation speed control
- A USB cable and the STARTER software.
- A GV2 motor circuit-breaker.
- A Schneider soft starter 3 x 400V - 6A. Adjustment of acceleration, deceleration time and couple by front potentiometer.

ref. KI-VAR3

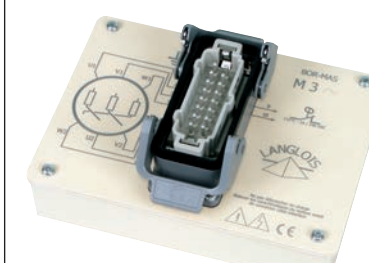
FAN OPTION AND CONNECTION INTERFACE



- Can be completed by a fan.
- 300W 400/690V 3-phase fan.
 - Rated speed 1500 rpm
 - Power supply through 4mm dual chamber safety terminals

Protection grid removed for photo purposes only

ref. KT-1M



ref. BOR-MAS

This interface plugs into the terminals of the fan motor and allows quick connection connector.



Bottom view

SOURCE SWITCHING KIT



ref. KI-COMS3

COMPRISES

- 1 automatic source inverter with display. Electrical position control by potential-free dry contacts or directly via the control interface.
- 2 45A power contactors, with interlocking mechanism and auxiliary contact
- 1 2-source power supply module with its 2 protection circuit breakers
- 1 Auto/Manu switch
- 1 3-position switch
- 3 230V indicator lights
- 1 3P+N 10A circuit breaker
- 1 1P+N 10A circuit breaker
- 1 1P+N 16A circuit breaker
- 1 set of connection terminals
- 1 removable wiring board 600x400mm
- 1 polyester box 600x400x200mm
- 1 set of rolls of wiring wires

Despite the 45A current supported by the reversing switch and in order to avoid damage to the ancillary components (terminals, fuse holder, etc.), the charging current must not exceed the value of 16A Max.

An educational file including diagrams, characteristics and instructions for each component is supplied with the kit.

This industrial kit includes 2 source reversing contactors, a control unit and the control accessories allowing the switching from one power source to another.

One considered "NORMAL" and the other "BACKUP" used in the event of a power outage of the first.

The main application is the continuity of power supply in the event of a failure of the public network.

This system is often integrated into TGBT cabinets. The switching from the normal source to the backup source is carried out under the supervision of the control unit.

It allows the sources to be reversed automatically or manually via the interface or by a switch connected to the programmable inputs.

The latter detects the absence of voltage from the normal source and controls the switching of the switch which activates the backup source. Indicator lights connected to the programmable outputs display the status of the switch.

Possibility of pre-cutting the door of the cabinet for integration of the control unit on request.

WIRING KIT TO START AN ASYNCHRONOUS MOTOR



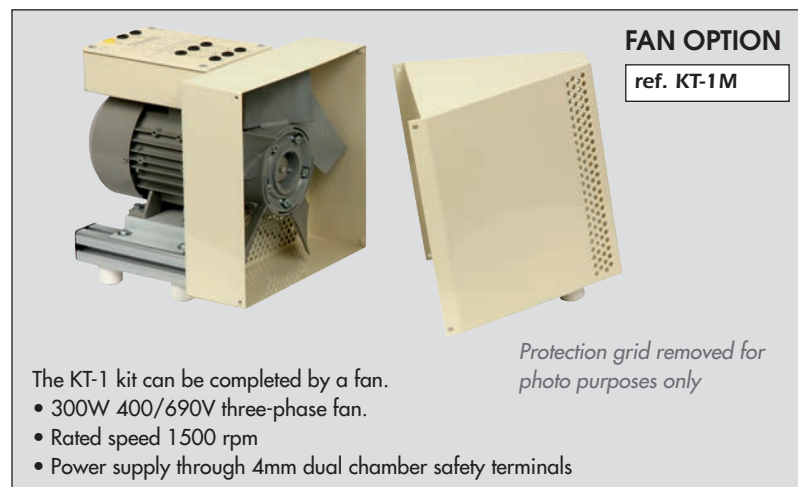
Wiring kit for industrial electrical equipment in housings to start-up a 300W asynchronous motor. Various diagrams are proposed: Direct, Star/Triangle, reversal of the direction of rotation... Each component unit has 4mm dual chamber safety terminals for the various connections.

The Kit is supplied with diagrams and instructions for the components. Option to complete this kit at a later date with for example, a speed controller, a starter/decelerator, etc. Your kit can be customised upon request. Please contact us.

ref. KT-1

The kit comprises

- 1 three phase power supply unit with circuit breaker, emergency stop and On/Off
- 4 power contactor units
- 2 single-pole + neutral circuit breaker units
- 1 25A - 30mA differential four-pole switch unit
- 1 4A D curve four-pole thermal magnetic circuit breaker unit
- 2 auxiliary contactor units for a 2F+2O control circuit
- 1 auxiliary contactor unit for a 4F+3O-time O+F work control circuit
- 1 emergency stop switch/disconnector unit with 4 25A contacts
- 1 0.4 to 0.63A + 1O three-pole thermal relay unit
- 1 230V/24V single phase 120VA safety transformer unit
- 1 24V green LED indicator light unit
- 1 24V red LED indicator light unit
- 1 24V white LED indicator light unit
- 2 black push-button units with 'F+O' contact
- 1 red push-button unit with 'O' contact
- 1 emergency stop unit with 'O' contact, key override
- 1 double push-button unit with 'F+O' contact and 24V indicator light
- 1 set of safety leads in several colours and lengths to wire all components.



FAN OPTION

ref. KT-1M

The KT-1 kit can be completed by a fan.

- 300W 400/690V three-phase fan.
- Rated speed 1500 rpm
- Power supply through 4mm dual chamber safety terminals

Protection grid removed for photo purposes only

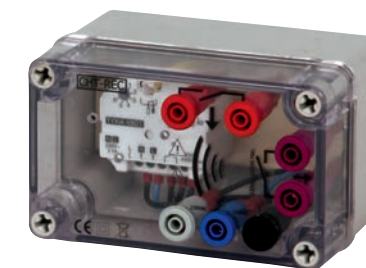
RECEIVER EQUIPMENT

These components of buildings are wired into small boxes and connected to safety terminals to be used with safety test leads. Features are indicated on each box, with a no-deteriorating hardwearing engraving.



Single-phase bell.
24V-50Hz
Dim. 130 x 80 x 85mm.

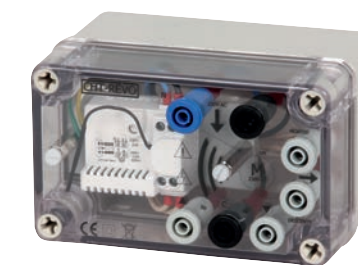
ref. CIA-DIV17



Radio receiver for lighting control. A switch can be connected for local lighting control. 230V-100W contact on compact fluo lamps or 300W contact on incandescent lamps. Power supply 230V-AC-Ph+N. Dim 130 x 80 x 85mm.

ref. CHT-REC

Requires transmitter (Ref. CHT-EM)



Radio receiver for roller shutter control. A roller shutter control can be connected for local up and down control. Contact 230V-1A Max. Power supply 230V-AC-Ph+N. Dim 130 x 80 x 85mm.

ref. CHT-REVO

Requires transmitter (Ref. CHT-EM)



Single-phase transformer
230V-24VAC.
120VA
Dim. 125 x 125 x 100mm.

ref. CIA-T24



ref. CHT-SP24

LED Spotlight 12V- base GU5.3 with transformer 230V/12V-AC. Dim. 250 x 80 x 85mm.



ref. CHT-SP

LED spotlight 230VAC base GU10. Dim. 180 x 80 x 85mm.



ref. CHT-VE27

60W wall light. E27 bulb. Dim. 170 x 115 x 100mm.



ref. BHT-P4

2P + E socket 16A/250V-AC. Dim. 150 x 75 x 60mm.



ref. CHT-FLUO

Strip light + fluorescent tube 230VAC-18W. Dim. 660 x 50mm.



ref. CHT-VOLET

Mobile roller shutter on feet 230VAC with up and down stop adjustments. Dim 1200 x 500mm.



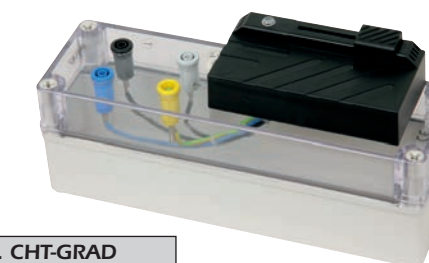
Mobile heater on feet, with power 2000W. Equipped with safety terminals for mains supply. 230V-50/60Hz. Dim 660 x 440 x 115mm.

ref. CHT-V10



ref. BHT-V6

Red light 230VAC. Lamp 5W - Dim. 150 x 75 x 70mm.



ref. CHT-GRAD

Switches 220Vac to 240Vac / 40W to 100W. Intensity regulator by universal electronic controller with mechanical control. For incandescent or halogen lamps from 40W to 100W.

PRODUCTION EQUIPMENT

These components of buildings are wired into small boxes and connected to safety terminals to be used with safety test leads. Features are indicated on each box, with a no-deteriorating hardwearing engraving.

Ref	Characteristics	Terminals	Dimensions
CIA-DB500	Connection circuit breaker DB90 – 2 poles - 45 A – with differential 500 mA - 250 V 50 Hz AC	6	280x190x135mm
CIA-DB90T	Connection circuit breaker DB90 – 4 poles - 30 A – with differential 500 mA - 250 V 50 Hz AC	9	280x190x135mm
CIA-ID64	2-pole differential switch 25A - 30mA Classe AC	4	125x125x100mm
CIA-ID65	2-pole differential switch 40A - 30mA Classe AC	4	125x125x100mm
CIA-ID66	2-pole differential switch 40A - 30mA Classe A	4	125x125x100mm
CIA-ID67	2-pole differential switch 63A - 30mA Classe A	4	125x125x100mm
CIA-MT46	Modular circuit breaker Multi 9 Declic 1 pole + N, 2 A curve C	4	130x80x85mm
CIA-MT47	Modular circuit breaker Multi 9 Declic 1 pole + N, 10 A curve C	4	130x80x85mm
CIA-MT48	Modular circuit breaker Multi 9 Declic 1 pole + N, 16 A curve C	4	130x80x85mm
CIA-MT49	Modular circuit breaker Multi 9 Declic 1 pole + N, 20 A curve C	4	130x80x85mm
CIA-MT50	Modular circuit breaker Multi 9 Declic 1 pole + N, 25 A curve C	4	130x80x85mm
CIA-MT51	Modular circuit breaker Multi 9 Declic 1 pole + N, 32 A curve C	4	130x80x85mm



CONTROL EQUIPMENT

Ref.	Characteristics	Terminals	Dimensions
BHT-B3	Push button 10A/250V-AC	2	150x75x70mm
BHT-B4	Double push button 10A/250V-AC	3	150x75x70mm
BHT-C1	2 way switch 10A/250V-AC	3	150x75x60mm
BHT-S2	Simple switch 10A/250V-AC	2	150x75x60mm
BHT-S2+V	Simple switch 10A/250V-AC with integrated light indicator	2	150x75x60mm
BHT-S3	Double switch 10A/250V-AC	3	150x75x60mm
BHT-R5	Control for roller shutter Up - Down 10A/250V-AC	3	220x75x60mm
BHT-M1	Staircase timer rotary knob	2	150x75x70mm
BHT-CL1	2-position key switch. make contact	2	150x75x70mm
CHT-EM	Radio transmitter for lighting or roller shutter control. For changing the mechanical action of a switch to radio waves. Very simple setting. 230VAC P+N power supply. Requires radio receiver (see CHT-REVO).	6	130x80x85mm



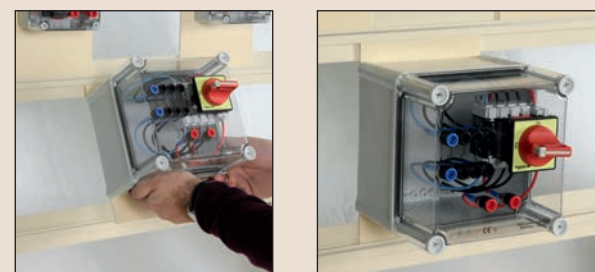
MANAGEMENT EQUIPMENT

These components of buildings are wired into small boxes and connected to safety terminals to be used with safety test leads. Features are indicated on each box, with a no-deteriorating hardwearing engraving.

Ref	Characteristics	Terminals	Dimensions
CIA-DIV5	Dusk switch with photocell. Power supply 230 V - 50/60 Hz. Two-way contact 10 A – 230 V AC. Sensitivity adjustment on front.	5	125x125x100mm
CIA-DIV6	'Stairwell' timer 230 V - 50/60 Hz. Timing adjustable from 0.5 to 10 min on front. Manual forced operation contact. Output on contact 250 V AC – 16 A at cos φ=1	4	130x80x85mm
CIA-DIV7	Single pole remote control switch. Coil 24 V - 50/60 Hz. Forced operation button on front. Contact 10 A – 230 V AC.	4	130x80x85mm
CIA-DIV7Z	Single pole remote control switch. Coil 230 V - 50/60 Hz. Forced operation button on front. Contact 10 A – 230 V AC.	4	130x80x85mm
CIA-DIV8	Time switch. Time period adjustment on front. Coil power supply 230 V - 50/60 Hz. Contact 16 A – 230 V AC.	4	130x80x85mm
CIA-DIV10	Single phase circuit contactor/load shedder. Integral core. 230V-50/60Hz. 2 channels. Load sheds or picks up 2 non-priority circuits in cascade. Forced load shedding input. Thresholds 5-10-15-25-30-40-45-50-60-70-75-90A. Load shedding signalled by LED. I _{max} : 30 A	9	280x190x135mm
CIA-DIV11	Contactor peak time with manual control. 2 Contacts - 40A - 230VAC	6	125x125x100mm
CIA-DIV12	Single-Phase 2-pole contactor 16A. 230V coil.	6	130 x 80 x 85mm
CIA-DIV13	Single-phase 45A electric meter with LCD display. Meter compliant with MID standard. 1 output with pulses.	6	125x125x100mm



OPTION FOR HANGING ON FRAMES



Example of an industrial component (Ref. CIA-SE3) with hanging option on panel of 250mm high. You can attach your CIA components on frame and facilitate wirings and tests. If you want this option, you have to add -PLA at the end of the reference of the selected component.

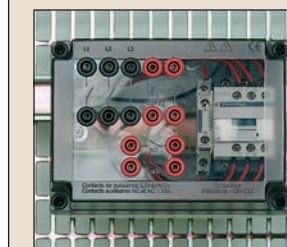
Ex : CIA-SE3-PLA

OPTION FOR HANGING ON RAILS



Example of industrial component (Ref. CIA-C12) with hanging option for fast attachment onto an universal rail. In this way, you can attach your various industrial components onto a grid in order to make wiring and testing easier. To order this option, simply add -FIX to the end of the reference.

Ex : CIA-C12-FIX



LIVING AREA WIRING KIT



Wiring kit for the main electrical equipment, type HOUSING in units, to complete an electrical installation similar to a 35m² apartment.

Each module has 4mm dual chamber safety terminals for the various connections. The kit is supplied with the wiring and architectural diagrams as well as instructions for the various components.

Your kit can be customised upon request. Please contact us.

ref. KT-2



This kit is also available with each industrial component fixed on a PVC plate (250mm high). In this version, all boxes of the wiring kit described above, are fixed on a PVC plate.

ref. KT-2PLA

The kit comprises

- 1 DB90 connection circuit breaker unit with 500mA residual current type
- 1 25A class AC two-pole 30mA residual current circuit breaker unit
- 1 40A class A two-pole 30mA residual current circuit breaker unit
- 1 2A C curve thermal magnetic circuit breaker unit
- 2 10A C curve thermal magnetic circuit breaker units
- 5 20A C curve thermal magnetic circuit breaker units
- 1 32A C curve thermal magnetic circuit breaker unit
- 1 230V single pole remote control switch unit
- 1 2000W staircase timer unit
- 1 2F manually controlled Off-peak contactor unit
- 5 viewing ports with 60W E27 Bulbs
- 2 230V colourless indicator lights
- 2 230V red indicator lights
- 1 movable convector on a stand with a power of 2000W- 230V
- 1 manual control unit for roller blinds
- 2 single switch units
- 2 two-way switch units
- 3 push button units
- 5 2P+E - 230V socket units
- 1 Set of safety leads in several colours and lengths to wire all components

COMPLETE KIT OF MYHOME COMPONENTS



- 1 Uni+ Neutral magnetothermal circuit breaker, caliber 2A.
 - 3 Uni+ Neutral magnetothermal circuit breakers, caliber 10A.
 - 1 Uni+ Neutral magnetothermal circuit breaker, caliber 16A.
 - 1 SCS 24V 600mA BUS power supply
 - 1 actuator for controlling a roller shutter
 - 4 actuators 2 relay outputs
 - 5 push buttons with 2 keys
 - 1 consumption indicator with 1 TI.
 - 1 audio/video web server for remote control
- MyHOME components via web pages or via the Portal MyHOME Webserver to download for free on Android® or Apple Store®
- 1 Wi-Fi switch
 - 100m of ICTA D16mm sheath
 - 100m of ICTA D20mm sheath
 - 4 reels of 100m of rigid 1.5mm² wire (Blue, Black, Red, G/J)
 - 3 reels of 100m of 2.5mm² rigid wire (Blue, Black, V/J)
 - 5 pots for drywall.
 - 1 set of jumpers for configuring the addresses of each component with numbered marking.

MY HOME
legrand

ref. KX-MH

AUTONOMOUS
WIFI NETWORK

TEACHING RESSOURCES
STUDENTS / TEACHER

EDUCATIONAL OBJECTIVES

- Discover the DOMOTIC environment of an electrical installation
- Discover and study the functions of a MyHome LEGRAND® Bus SCS home automation system
- Make electrical diagrams
- Create a parts list
- Analyze manufacturers' technical data sheets
- Carry out the configuration of the MH components
- Perform wiring and connection of electrical components
- Carry out the commissioning of the installation
- Carry out a WIFI network configuration for ordering on a tablet or Smartphone

Possible practical work

- Wiring of a My Home home automation electrical installation
- Realization of the settings of the various My Home components
- Creation of several operating scenarios
- Configuring the Wi-Fi Switch
- Control of the installation from a touch pad

KNX DISCOVERY KIT



This KNX gateway kit is the easiest way to connect a non-communicating standard installation to take local and remote control via the KNX network. Your installation can then be controlled via smartphone/tablet and can be enriched with various connected objects.

Thanks to its 4 "dry contact" type inputs and these relay outputs, this kit allows you to transform a model into a KNX communicating solution. The information will pass through the KNX bus to send it back to your Wiser for KNX supervision.

Kit supplied with a Wifi Switch allowing you to create a local network independent of your computer installation.

This kit does not require any KNX license because the number of participants is less than 5.



ref. KX-PASSKNX



EDUCATIONAL OBJECTIVES

- Discover the KNX environment of an electrical installation.
- Understand the specifications of a KNX electrical installation
- Make electrical diagrams
- Create a parts list
- Analyze manufacturers' technical data sheets
- Perform the configuration of KNX components
- Carry out the wiring and connection of the KNX components.
- Carry out the commissioning of the installation
- Supervise the installation
- Carry out a WIFI network configuration for control on a touch pad

Possible practical work

- Programming Via ETS of the configuration of the KNX gateway kit
- Supervision programming via Wiser for KNX
- Analysis of specifications
- Realization of wiring diagram
- Realization of a study according to specifications
- Installation of components
- Ethernet Network Setup

COMPRISES

- 1 KNX actuator with 8 relay outputs
- 1 KNX 320mA bus power supply
- 1 communication module power supply 24V
- 1 KNX communication module allowing to:
 - check the equipment in your home: lighting, heating, openings, etc.
 - create schedules and agendas (holidays, public holidays, etc.)
 - send notification e-mails in case of alert or fault
 - add wireless products for extensions
 - create logical functions
 - store and log data available in .csv format.
- 2 KNX universal interfaces, each containing 2 dry contact type inputs.
- 1 USB interface for programming on ETS with its USB
- 20m of KNX bus cable
- Wifi switch with a 3m Ethernet cord

COMPLETE KIT OF KNX COMPONENTS - CONNECTED HOUSE



- 1 KNX bus supply 320mA for 32 devices
- 1 programming interface / USB connection / KNX
- 1 set of KNX actuators allowing the management:
 - a convector
 - a rolling shutter
 - variable lighting
 - TOR outputs
- 6 KNX pushbuttons (3 x 4 keys and 3 x 2 keys)
- 1 KNX thermostat with display and keys (comfort mode, night mode, Eco mode, Temp °C setpoint)
- 1 ETS5 Lite software (1 license) for designing and configuring KNX system components.
- 1 KNX / IP Gateway Inside Control
- 1 energy meter 3 ways 230V / 16A
- 1 24VDC power supply for the KNX / IP gateway
- 1 30mA residual current circuit breaker
- 1 thermal-magnetic circuit breaker Unipolar + Neutral (2A)
- 2 thermal-magnetic circuit breakers Unipolar + Neutral (10A)
- 2 thermal-magnetic circuit breakers Unipolar + Neutral (16A)
- 100m of ICTA D16mm sheath
- 100m of ICTA D20mm sheath
- 4 coils of 100m of 1.5mm2 rigid wire (Blue, Black, Red, Yellow/Green)
- 4 coils of 100m of 2.5mm2 rigid wire (Blue, Black, Red, Yellow/Green)
- 100m of EIB KNX bus cable.
- 5 boxes of derivations.
- 1 NETGEAR WIFI Router configured to use a local Wi-Fi to the system (no connection required on the computer network or the Wifi of your building). This router can connect a tablet or smartphone on the KNX network giving the learner the possibility to measure consumption and remotely control the installation.



ref. KX-KNX



EDUCATIONAL OBJECTIVES

- Discover the DOMOTIC environment of an electrical installation
- Discover and study the functionalities of a home automation installation with a KNX bus
- Make electrical diagrams
- Create a parts list
- Analyze manufacturers' technical data sheets
- Perform the configuration of KNX components
- Perform wiring and connection of electrical components
- Carry out the commissioning of the installation
- Carry out a WIFI network configuration for control on a touch pad

Possible practical work

- Wiring of a home automation electrical installation equipped with the KNX bus
- Realization of the settings of the various KNX components
- Creation of several operating scenarios
- Configuring the Wi-Fi Switch
- Control of the installation from a touch pad

KNX BUS STUDY DEVICES KIT

This kit is a set of devices for studying and putting into service multi-brand KNX products.

The KNX devices offered are the most commonly used ones in the "intelligent home" domain.

The ETS Lite configuring software (20 participants max.) is supplied. Kit ready for installation in a modular panel (electrical protection to be provided).



ref. KI-KNX

The kit comprises

- 1 30V power supply for the bus.
- 1 USB interface for programming from a PC.
- 2 4-key pushbuttons with indicator light.
- 1 2-key pushbutton with indicator light.
- 1 presence detector.
- 2 switch actuators and roller blind actuator.
- 2 control actuators.
- 4 Bulkhead lights 230VAC.
- ETS Lite configuration software.

COMPLETE KIT TO STUDY RADIO TECHNOLOGY



ref. KX-DD

AUTONOMOUS WIFI NETWORK

TEACHING RESSOURCES STUDENTS / TEACHER

EDUCATIONAL OBJECTIVES

- Discover the home automation environment of an electrical installation
- Discover and study the functionalities of a Delta Dore radio home automation system
- Make electrical diagrams
- Create a parts list
- Analyze manufacturers' technical data sheets
- Carry out the configuration of the DD components
- Perform wiring and connection of electrical components
- Carry out the commissioning of the installation
- Carry out a WIFI network configuration for ordering on a tablet or Smartphone

Possible practical work

- Wiring of a Delta Dore home automation electrical installation
- Pairing of Delta Dore components
- Realization of the settings of the various Delta Dore components
- Creation of several operating scenarios
- Wi-Fi switch configuration
- Control of the installation from a touch pad

COMPOSITION

- 2 Uni+ Neutral magnetothermal circuit breakers, caliber 10A.
- 2 Uni+ Neutral magnetothermal circuit breakers, caliber 16A.
- 3 radio switches with 2 buttons (including 1 for rolling shutters)
- 4 radio receiver modules for lighting
- 4 mechanical switches.
- 4 radio transmitter modules.
- 1 roller shutter radio receiver module.
- 1 external impulse radio receiver
- 1 external dry contact radio receiver
- 4 radio transmitter modules.
- 1 Wi-Fi switch.
- 1 Tydom home automation radio/wifi interface for controlling DELTA DORE® components from a smartphone or touchscreen tablet. Application (only in french) to download for free on Apple store® and Android Store®.
- 100m of ICTA D1 6mm sheath + 100m of ICTA D20mm sheath
- 4 reels of 100m of rigid 1.5mm² wire (Blue, Black, Red, G/J)
- 3 reels of 100m of 2.5mm² rigid wire (Blue, Black, V/J)
- 12 pots for drywall.

COMMUNICATING WIRED ANTI-INTRUSION ALARM KIT



Réf. KX-12

TEACHING RESSOURCES STUDENTS / TEACHER

AUTONOMOUS WIFI NETWORK

Kit comprising the components of a wired alarm communicating via programming software. The image of the camera can be viewed on the screen of a smartphone or tablet via software that can be downloaded free of charge from download platforms.

- 1 battery-powered 8-zone alarm unit. Equipped with a USB port for connecting a PC via the configuration software provided.
- 1 battery-powered self-powered siren with flash.
- 1 code keypad with 2-line display configurable from the software or locally.
- 2 infrared detectors.
- 1 PAL/IP orientable color camera.
- 1 230V WIFI router.
- 20 meters of cable.
- 1.5 meters of chute.
- 50 meters of ICA sheath diam 20mm.

EDUCATIONAL OBJECTIVES

- Understand and set up anti-intrusion alarm management
- Understand the configuration and programming by software
- Understand an Ethernet IP network
- Set up an Ethernet IP camera and a WIFI router

Possible practical work

- Parameterization of the alarm center via the configuration software.
- Creation of an Ethernet IP network.
- Configuration of the PC and the IP camera on the Ethernet network.
- Setting up the WIFI router.
- Realization of the complete wiring.

RADIO ALARM STUDY KIT



- 1 2-zone radio central module.
- 1 outdoor siren module. (Reduced decibel level)
- 1 radio keypad module for receiving information and remote control, with LCD display, switching on and off. Full on and partial on 3 access codes: 1 master, 2 users. History of the last 200 events. System status information: in and out of service, status of detectors, etc. Siren test. System configuration.
- 2 infrared presence detector modules. Range 12m.
- 1 module with two detachable 4-key radio remote controls. Range 100 to 300m.

ref. KX-3

TEACHING RESSOURCES STUDENTS / TEACHER

AUTONOMOUS WIFI NETWORK

DELTA DORE
Smart is the new power

EDUCATIONAL OBJECTIVES

- Understand and configure anti-intrusion alarm management
- Understand and learn the programming of radio components
- Program the various components of an anti-intrusion alarm such as the control unit, the detectors, the keypad with informative code, the remote controls, the siren.
- Configure Delta Dore® components and the gateway dedicated to its operation
- Carry out the commissioning of the installation
- Set up a WIFI network for tablet control

Possible practical work

- Identification and functionality of each component
- Installation of components on the architectural plan of an apartment.
- Programming of the alarm center with a presence detector and remote control.
- Programming of the alarm center with addition of the informative keyboard and second presence detector.
- Programming of remote control of the alarm via the application
- Configuration of the wifi switch for the creation of the local network.
- Installation troubleshooting.

FIRE MANAGEMENT KIT - CENTRAL DAD



ref. KX-16

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure a DAD emergency exit management
- Understand how an optical smoke detector works.
- Understand how a manual call point works.
- Realize the wiring of components of a DAD emergency exit management
- Configure a DAD emergency exit management unit

Possible practical work

- Realization of the wiring diagram of an installation with DAD emergency exit management
- Realization of the complete wiring
- Study of the operation of the optical smoke detector and the manual trigger
- Configuration of the DAD emergency exit management unit
- Performing local maintenance

COMPOSITION

- 1 magneto thermal circuit breaker of 2A
- 1 aerosol can for detector test
- 1 marking evacuation block
- 1 autonomous DAD detector backed up
- 2 electromagnetic locks 24Vdc
- 2 automatic smoke detectors
- 2 bases for smoke detector
- 2 manual triggers
- 1 box 1 row of 13 modules
- 100m of H05V cable in 3G 0.75mm²
- 30m of unarmoured CR1-C1 fire cable 5G 1.5mm²
- 100m of 16mm ICA sheath
- 2m of gray trunking 40x90mm
- 1 junction box

WIRING KIT FOR A TYPE 4 WIRED FIRE ALARM



ref. KX-15

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure type 4 fire alarm management.
- Understand how an optical smoke detector works.
- Understand how a manual call point works.
- Communicate with stand-alone smoke detectors
- Carry out the wiring of components of a type 4 fire alarm
- Configure a fire alarm panel.

Possible practical work

- Realization of the wiring diagram of a fire alarm installation
- Realization of the complete wiring
- Study of the operation of the optical smoke detector and the manual trigger
- Parameterization of the fire panel
- Performing local maintenance

COMPOSITION

- 1 box 1 row 13 modules
- 1 2P curve C 2A circuit breaker
- 1 battery charger
- 20 m of CR1-C1 2x1.5mm² fire cable
- 20 m of CR1-C1 5G 1.5mm² fire cable
- 1 waterproof recessed pot
- 1 battery 24Vdc - 0.8AH
- 1 UPS-24Vdc power supply
- 2 electric locks for emergency exit opening 24Vdc
- 3 red manual triggers with distorting membrane. Supplied with reset key.
- 1 visual alarm diffuser for the hearing impaired
- 1 class B sound diffuser
- 2 independent fire detectors. Optical detector sensitive to all types of domestic fire.
Equipped with a test button and Audiolink technology which allows via the free application to download a complete diagnosis of the state of the detector on tablet or smartphone.
- 1 type 4 sector 2B fire alarm panel. Voltage presence, fire alarm, battery fault, test mode LEDs.
- 1 colorless, non-flammable aerosol for testing smoke detectors.
- 1 coil of 100m of corrugated tube diameter 20

AUDIO DOOR ENTRY KIT



ref. KX-L

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Install an audio intercom
- Wire an audio intercom
- Understand how a complete audio kit works
- Perform the configuration of an audio intercom
- Set up a complete audio kit

Possible practical work

- Installation of the indoor station
- Installation of the entry panel
- Installing the modular board
- Wiring of the complete audio kit
- Operation test of an audio intercom
- Configuring an audio intercom
- Tuning of the complete audio kit

COMPOSITION

- 1 IP54 protruding external entry phone terminal
- 1 internal entry phone
- 1 modular power transformer
- 1 2A thermal magnetic circuit breaker
- 1 8-module PVC box
- 1 branch box
- 1 10m Nylon needle
- 100m of 16mm-diameter ICO sheathing
- 25m of multi-pair cable

This kit requires a 24V AC electric door opener not included

DOOR OPENER

ref. KX-H

- 1 electric door opener to be flush-fitted
- 1 bell transformer
- 1 1P+N / 2 C trip circuit breaker
- 1 push-button
- 1 box of flush fittings for hollow wall



COMMUNICATING VIDEO DOOR ENTRY KIT



ref. KX-MC

TEACHING RESSOURCES
STUDENTS / TEACHER

AUTONOMOUS
WIFI NETWORK

EDUCATIONAL OBJECTIVES

- Understand and configure a communicating video door entry kit.
- Draw up the wiring diagram and the complete wiring of the system.
- Understand the configuration and programming of the remote connection.

Possible practical work

- Installation of a street panel and an indoor video intercom.
- Intercom settings.
- Programming of remote forwarding.
- Realization of the complete wiring.

COMPOSITION

- 1 IP54 surface-mounted street station.
- 1 7" indoor color video screen. Built-in Wi-Fi allowing communication via a local network with a tablet or smartphone (not supplied) using a free application that can be downloaded from Android® or Apple store®.
- Internal video clip memory of 10 seconds audio and video or recording by micro SDMC (not supplied).
- 1 modular 18V power supply.
- 1 2A magnetothermal circuit breaker.
- 1 PVC box with 13 modules.
- 1 junction box.
- 1 Nylon needle of 10m.
- 100m of 16mm diameter ICO sheath.
- 20m of multipair cable.

This kit requires a 24V AC electric door opener not included

DOOR OPENER

ref. KX-H

- 1 electric door opener to be flush-fitted
- 1 bell transformer
- 1 1P+N / 2 C trip circuit breaker
- 1 push-button
- 1 box of flush fittings for hollow wall



COMMUNICATING ACCESS CONTROL WIRING KIT



Programming and supervision via PC
with the supplied software

ref. KX-10

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure VIGIK® access management from the RESIDORG software.
- Understand the configuration and programming of a "Master" access card.
- Set the entry authorization of people according to several criteria.
- Draw up a wiring diagram and the complete wiring of the system.

Possible practical work

- Installation of an access control system
- Configuration of the VIGIK® access box from the RESIDORG software.
- Programming of VIGIK® control units with programming cards.
- Programming of user badges according to rights and time slots.
- Realization of the complete wiring.

COMPOSITION

- 2 VIGIK® control units for access management of 2 doors. Fully configurable by PC and programmable by card.
- 2 detector heads with badge recognition.
- 2 electronic sound buttons with Leds of the PMR type.
- 2 electric strikes mounted on hinges for opening simulation.
- 1 programming software.
- 5 Master programming cards.
- 5 User Badges.
- 1 modular power supply 12Vdc 4A
- 1 MIFARE encoder for badge programming
- 1 modular cabinet with 1 row of 13 modules
- 1 bipolar protection circuit breaker
- 1 plexo box
- 2 plastic boxes to adapt the VIGIK® detector heads
- 20 meters of cable.
- 2 meters of chute.
- 100 meters of ICA Ø20mm sheath.

CONTACTLESS ACCESS CONTROL WIRING KIT



ref. KX-14

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure the different access controllers
- Address access control issues for people with reduced mobility
- Discuss the different RFID badge technologies
- Discuss the interest of contactless access control
- Draw up the wiring diagram for the various elements.

Possible practical work

- Wiring and configuration of access control by facial recognition
- Wiring of access control by infrared push button and PMR sound
- Wiring and configuration of access control by code keypad + card
- Wiring and configuration of access control by remote control / radio receiver
- Wiring and configuration of access control by receiver + badge
- Wiring of access control by PMR contact bar
- Wiring of access control by infrared presence detector

COMPOSITION

- 2 portholes 230V
- 2 electric suction cups
- 1 infrared presence detector
- 1 radio receiver 2 relays
- 1 remote control, radio transmitter, 2 channels
- 1 PRM contact bar
- 2 PMR panels made up of a push button and an infrared detector with integrated buzzer.
- 1 door station with facial recognition intercom and its power supply
- 1 card reader + 125Khz RFID technology keypad + 3 cards + 1 manager + 1 programming remote control
- 1 13.56 MHz RFID technology badge reader + 3 badges + 1 manager + 1 programming remote control
- 1 cabinet with 2 rows of 13 modules
- 1 circuit breaker 2P 10A
- 1 circuit breaker 2P 2A
- 1 modular jack
- 1 power supply

HYBRID VIDEO SURVEILLANCE KIT



ref. KX-13D

ref. KX-13

withoiut dome camera

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure a set of video surveillance components.
- Wire an analog and IP hybrid network
- Produce electrical diagrams
- Carry out the wiring and physically connect various electrical components
- Produce a nomenclature of components and analyze manufacturer files
- Set up an Ethernet computer network.
- Carry out the commissioning of the installation
- Perform the dome camera settings (TAG-13D only)

Practical work

- Configuration of the recorder and the computer for connection to the web server.
- Cabling of a hybrid network
- Wiring of analog cameras
- Wiring of IP cameras
- Wiring of a dome camera
- Wiring of the recorder
- Creation of wiring diagrams
- Camera settings.
- Remote viewing settings
- Dome camera control (TAG-13D only)

Kit bringing together the components of an analog and IP video surveillance installation

- 1 XVR AHD video recorder, 8 analog video inputs and 8 8MP IP video inputs, HDD of 1TB special video surveillance. Integrated web server for configuration and video playback. Simultaneous viewing of images from 4 cameras on the monitor.
- 2 Analogue camera modules AHD / TVI / CVI / CVBS all-in-one color Day / Night, 2.8-12 mm varifocal optics, FULL-HD resolution (1080p), IP66 waterproof casing, 4 infrared LEDs with operating distance of 40 meters (Smart IR).
- 2 Day & Night all-in-one IP color camera modules, Starlight technology, 2.7 ÷ 13.5 mm varifocal motorized optics with Autofocus function, FULL-HD resolution (1080p) @ 30 fps, IP66 waterproof housing, 4 infrared LEDs with 40m operating distance (Smart IR).
- Day / Night all-in-one color network PTZ dome camera, 20x optical zoom, FULL-HD resolution (1080p) @ 30 fps, 4" waterproof IP66 casing, infrared LEDs with operating distance up to 150 meters (Smart IR). Controlled by mouse, Smartphone or tablet (only KX-13D)
- 1 18" LED monitor. HD resolution.
- 1 RJ45 switch.

COMMUNICATING MANAGER KIT FOR EMERGENCY LIGHTING UNITS



Kit composed of material allowing to control in a way centralized an installation of distributed security blocks in several areas.

Composition

- 1 modular box with 2 rows of 13 modules
- 2 meters of chute
- 30 meters of fire cable
- 4 coils of 100 meters of 1.5mm² flexible wire (black, red, blue, green/yellow)
- 1 set of protective circuit breakers including a differential
- 3 addressable ambient type LED BAES.
- 3 evacuation-type addressable LED BAES.
- 1 autonomous management unit with touch screen
- Equipped with TCP/IP link
- Equipped with dry contacts for fault return
- Comes with basic DCPS software
- 2 BAES multifunction remote control including "SATI report" and automatic repolarization which controls the switching on/off of the BAES.
- 3 portholes 230V.
- 1 wifi switch + 1 RJ45 cord of 3 meters.
- 1 key switch.
- 1 fault indicator.

ref. KX-17



TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Understand and configure emergency lighting management with SATI report.
- Understand and configure addressable emergency lighting management.
- Understand the difference between an ambient and an evacuation BAES.
- Carry out wiring of BAES components and a manager in SATI report configuration and in addressable configuration.
- Configure remote management from a computer.
- Configure a zone manager with touch screen from a computer.
- Configure addressable BAES in Zone Manager.

Possible practical work

- Realization of the complete wiring diagram of a BAES installation in "SATI report" configuration zones
- Realization of the complete wiring diagram of a BAES installation in addressable BAES configuration zones
- Realization of the complete wiring
- Study of the operation of an ambient and evacuation BAES during a power outage
- Configuration of the zone manager with its touch screen
- Carrying out the maintenance of the BAES according to the 2 configurations
- Remote configuration setting

HOME VDI KIT WITH COMMUNICATION UNIT



ref. KX-U

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Theoretical study of VDI network home components wiring
- Realization of different wirings.

Practical works

- Wiring of a VDI box
- Wiring of an RJ45 socket
- Wiring and connection of TV cable and RJ45 cable
- Installation of different types of wall outlets

Set of components for wiring, in GRADE3, of a home VDI system. Responds to the new multimedia needs of housing. Is based on the implementation of a star-shaped wired network, carrying computer, TV/SAT and telephone signals. The RJ45 sockets, wired directly to the VDI box, become universal. They can receive either one of the 3 desired signals: Voice (phone) Data (computer) Image (terrestrial TV). Wiring possible in partial or total unbundling.

Comprises

- 1 RJ45 TV cable/"F" plug, length 3m
- 10 Supports 4 "9mm pitches"
- 3 female screw connectors for 6.8mm TV cable
- 1 Hertzian/Satellite TV splitter 2 COAX 5-240MHz outputs
- 1 female TV socket type
- 1 TV plate
- 1 plastic plate with 3 horizontal location
- 3 plastic plates 1 horizontal location
- 50 meters of rigid residential cable used for a grade 3 4P very high speed V.D.I network
- 25 meters of rigid coaxial indoor TV aerial cable intended for connection for terrestrial or satellite distribution.
- 1 RJ11/RJ45 phone cable, 3m long
- 3 RJ45/RJ45 Grade 3 computer cables, 3m long
- 1 VDI unit mounted in the building technical duct with space for broad-band box + accessories
- 6 recessed pots 3 stations
- 6 RJ45 cat.6 UTP sockets
- 6 RJ45 cat.6 STP sockets
- 2.6 m GTL trunking with cover
- 16 RJ45 socket covers with 2-module label holder
- 6 recessed pots 1 station
- 100m of ICTA Standard Ø20mm conduit
- 1 micro-switch with 5 ports

EDUCATIONAL OBJECTIVES

- Install a GTL duct
- Set up a VDI box
- Install a modular box
- Arrange chutes

ref. KX-GTL

TEACHING RESSOURCES

Composition

- 1 trunking body 13 modules, technical housing duct 2.6m.
- 1 trunking cover 13 modules, technical housing duct 2.6m.
- 1 white surface distribution box with 3 rows of 13 modules.
- 1 communication box, useful for the distribution of TV, data, on each RJ45 socket, with slot for ADSL BOX and its accessories.
- 4 lengths of 2 meters of PVC trunking 40(h)*90(p) for routing cables of all kinds in new construction or renovation, residential or tertiary.

Content of the educational file

- Instructions and installation
- Technical notices

HOUSING TECHNICAL DUCT KIT



CONNECTED HEATING ENERGY MANAGEMENT KIT



ref. KX-RC

AUTONOMOUS
WIFI NETWORK

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Manage electric heaters and a hot water tank outlet via a connected radio manager
- Discover the energy management of electric heating, a roller shutter and connected lighting
- Discover and study the functionalities of a Radio home automation installation
- Produce electrical diagrams
- Produce a nomenclature of components and analyze the manufacturers' technical sheets
- Install electrical equipment, pass conductor cables, sheaths
- Carry out the wiring and physically connect the electrical components
- Carry out the configuration of the Radio components
- Carry out the commissioning of the installation
- Configure a WIFI network
- Remotely control the components from a Tablet or a Smartphone
- Carry out electrical repairs

Practical work

- Creation of the wiring diagram of a connected installation
- Wiring of the connected installation
- Parameterization of the heating manager
- Configuration of an Ethernet computer network
- Remote control of the installation from a Smartphone or Tablet

- Energy manager for electric heating with 1 to 3 zones
 - This energy manager allows you to save money automatically. For example by detecting the opening of your windows.
 - Freely program your energy manager for electric heating on a weekly basis to optimize your energy expenditure
 - Your energy manager for electric heating includes a load shedder. This allows the micro-cut of certain electrical devices such as the hot water tank in the event of electrical overconsumption due to the ignition of other devices.
 - Control of your electric heaters from your Calybox. Choose the program according to the time of day (Comfort, Eco, Frost protection, Off)
 - Frost protection of the heating when a window is open if you associate it with an opening detector.
- 2 radio contacts with opening intended to cut the convectors.
- 1 radio / IP gateway for WIFI communication.

- 1 WIFI router configured (local WIFI specific to the system).
- 1 data concentrator to read the live consumption of a circuit from the free TYDOM application.
- 1 outdoor temperature sensor and its control relay.
- 2 convectors with a power of 500W with pilot wire.
- 1 roller shutter of 500 x 500mm.
- 1 exterior lighting.
- A set of circuit breakers including a 30mA RCCB.
- 1 switch for lighting.
- 1 switch for rolling shutter.
- Rolls of cables, 100m of ICA sheath diam 20mm, junction boxes, necessary for wiring the assembly.
- Supplied with manufacturer's instructions and wiring diagram.

TABLET OPTION



ref. TAB-97

- Samsung® tablet
Minimum characteristics:
- WiFi 9.6 inch Full HD touchscreen
 - 1.3Ghz
 - 1.5GB RAM
 - 8GB storage

WIRING KITS FOR HOUSING UNITS



ref. KX-A2 complete kit

ref. KX-A2L eco kit

Delivered with detailed assembly instructions for each circuit developed, architectural, multi-line and single-line diagrams.

Composition du kit	KX-A2	KX-A2L
two-way switches	4	2
one-way switch	1	1
push-button	2	1
double push-button	1	1
differential switch class A bipolar 40A - 30mA	1	1
10A magnetothermal circuit breaker	2	1
16A magnetothermal circuit breaker	2	1
20A magnetothermal circuit breaker	1	1
32A magnetothermal circuit breaker	1	1
analog time switch	1	0
timer (1 to 7min)	1	1
plug	6	2
cable outlet	2	0
distribution box	1	1
230V remote control	1	1
Led tube	1	1
wall spotlight	1	0
recessed spotlight 12V	1	0
pothole + lamp	2	2
wall light + lamp	1	0
fluorescent tube	1	0
junction box + connectors	5	3
differential switch class AC bipolar 25A - 30mA	1	0
100m crown of 20mm ICA sheath	1	0
100m crown of 1.5mm ² cable (Red, Blue, Green-Yellow, Purple)	4	0
100m coil of 2.5mm ² cable (Red, Blue, Green-Yellow)	3	0
3 x 6mm ² cable	10m	0
flush-mounting box for hollow partition conforming to RT2012	20	15
10m nylon needle.	1	0
trunking + end piece + partition + junction	2.5m	2.5m

CMV WIRING

ref. KX-C

- 1 220V controlled mechanical ventilation (CMV) unit
- 2 80mm diameter suction slots
- 1 2-position switch
- 6 metres of 80mm-diameter PVC sheathing
- 1 2A thermal magnetic circuit breaker
- 1 Ø65 box to be flush-fitted

DOOR OPENER

ref. KX-H

- 1 electric door opener to be flush-fitted
- 1 bell transformer
- 1 1P+N / 2 C trip circuit breaker
- 1 push-button
- 1 box of flush fittings for hollow wall

This kit is perfectly compatible with Langlois commercial housing cells and spaces. We do not guarantee the mechanical adaptation on cells of other brands.



CUT-OFF DEVICE + CONVECTOR KIT



ref. KX-D

TEACHING RESSOURCES

Composition

- 2 750W wall convectors
- 2 16A thermal magnetic circuit breakers
- 1 cut-off device 2 outputs
- 3 cable outputs
- 100 meters of 20mm protective, insulating, pliable sheathing
- 100 meters of 1.5mm² cable Red / blue / green-yellow
- 1 auxiliary heater 600W
- 3 boxes to be flush-fitted Ø65
- 1 branch box

EDUCATIONAL OBJECTIVES

- Theoretical study of the wiring of a circuit with convector
- Theoretical study of the wiring of a circuit with convector with load shedding
- Realization of different wirings.

Practical work

- Wiring a convector
- Wiring of a convector circuit
- Wiring of a load shedder
- Installation of convectors

KITS OF ELECTRICAL EQUIPMENT & CONDUITS FOR SURFACE-MOUNTING

These kits are made up of electrical equipment, rigid tubes, flexible conduits, cabletray, for students to produce surface-mounted electrical installations. The kits are delivered without cables or electrical conductors.

Ref.	Designation	KI-ZDP1 Qty	KI-ZDP2 Qty
A	13-module modular panel, 1 sealed row	1	1
B	branch box 105 x 105 x 35mm	2	2
C	surface-mounting pushbuttons	4	2
D	socket outlets 230V 2P+E for surface mounting	4	2
E	metre of rigid tube, diameter 16 mm	15	6
F	metre of rigid tube, diameter 32 mm	15	6
G	sleeve for rigid tube, dia: 16mm	15	5
H	elbow for rigid tube, dia: 16mm	15	5
I	Ts for rigid tube, dia: 16mm	10	4
J	sleeve for rigid tube, dia: 32mm	15	5
K	elbow for rigid tube, dia: 32mm	15	5
L	Ts for rigid tube, dia: 32mm	10	4
M	box of 100 ties for rigid tubes 16/32mm	1	1
O	box of Instacable 100 ties for rigid tubes 16/32mm	1	1
P	DCL pack, complete surface-mounting fitting + B22 socket	2	-
Q	50-metre reel of flexible conduit, dia. 32 mm	1	1
R	Bulkhead lights without lugs for E27 lamp 60W max.	4	2
S	metre of Isofil cable tray 50 x 100 mm	6	3
T	fixing bracket for Isofil cable tray	15	5



KIT FOR THE VISIBLE WIRING OF A DOUBLE GARAGE WITH STOREROOM



All electrical components in this kit are surface mounted and facing out.

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Theoretical study of the wiring of the usual components of a garage
- Realization of different wirings.

Possible practical work

- Simple approach to circuit protections
- Wiring of a simple ignition and transplanting of the phases and neutrals
- Wiring a back and forth ignition
- Wiring of a lighting with timer - twilight switch - teleruptor
- Lighting wiring
- Realization of a socket circuit
- Supply of a radiator with integrated thermostat

Comprises	Ref. KX-S	Ref. KX-SL
Ø16 and 20mm rigid insulating tube	36m	21m
sleeves for Ø16 and 20mm rigid insulating tubes	10	5
elbows for Ø16 and 20mm rigid insulating tubes	20	10
T-fittings for Ø16 and 20mm rigid insulating tubes	6	4
clamps for Ø16 and 20mm rigid insulating tubes	100	100
pins for the clamps	100	100
sealed modular table - 13 modules	1	1
40A-30mA class A double pole differential circuit breaker	1	1
1P+N 10A - C circuit breakers	2	1
1P+N 16A -C circuit breaker	1	1
1P+N 20A - C circuit breakers	2	1
dusk-to-dawn switch	1	1
230V remote control switch	1	1
multi-function timer with switch off warning	1	1
surface-mounted two-way switches	2	1
surface-mounted double two-way switch	1	1
surface-mounted push-buttons	6	2
surface mounted 16A 2P+E sockets	7	2
Led waterproof luminaire	3	2
E27 porthole with LED bulbs	2	1
500W convector	2	1
visible DCL pack + E27 sockets + bulbs	2	2
100m crown of rigid cable in 1.5mm ² (blue, red, purple, green yellow)	4	0
100m crown of rigid cable in 2.5mm ² (blue, red, green yellow)	3	0
junction box	6	0
gutter	2m	2m
comb 1P+N 63A 13 modules	1	1

ELECTRICAL WIRING KIT FOR A FLAT WITH A SURFACE AREA AROUND 35M²



All electrical components in this kit are surface mounted and facing out.

TEACHING RESSOURCES

EDUCATIONAL OBJECTIVES

- Theoretical study of the wiring of the usual components of a 35m² apartment
- Realization of different wirings.

Possible practical work

- Simple approach to circuit protections
- Wiring of a simple ignition and transplanting phases and neutrals
- Wiring a back and forth ignition
- Wiring of a lighting with timer - remote switch
- Lighting wiring
- Realization of a socket circuit
- Power supply for a radiator fitted with a pilot wire by a central control
- Learning how to pass thread with needle

Comprises	Ref. KX-T	Ref. KX-TL
modular table with 2 rows of 13 modules	1	1
40A-30mA class A double pole differential circuit breaker	1	1
40A-30mA class AC double pole differential circuit breaker	1	0
1P+N 2A - C circuit breakers	2	0
1P+N 10A - C circuit breaker	1	1
1P+N 16A -C circuit breakers	4	1
1P+N 20A - C circuit breakers	4	1
1P+N 32A - C circuit breaker	1	0
230V remote control switch	1	1
contacteur à commande manuelle	1	0
contactor for off-peak hours	1	0
FIPO Timer for the convectors pilot wire	1	0
multi-function timer with switch off warning	1	1
switches	3	1
double two-way switches	2	2
cable outputs	3	0
push-buttons	3	2
16A 2P+E sockets	6	2
500W convectors	2	1
visible DCL packs + B22 sockets + bulbs	5	4
raceway with connections	3m	3
equipment boxes for dry partitions	22	10
100m coils of 1.5mm ² rigid cable in blue, red, violet, green yellow	4	0
100m coils of 2.5mm ² rigid cable in blue, red, green yellow	3	0
branch boxes	7	5
needle	1	0
100m coil of 20mm corrugated tube	1	0
comb 1P+ N 63A 13 modules	1	1
modular socket	1	0

BOXED COMPONENTS FOR STUDYING SOLAR ENERGY

These components are made safe in plastic boxes with transparent covers. They are perfectly visible and the cabling is facilitated by the different safety terminals Ø4mm. Each box is supplied with detailed instructions

OPTIONS

- Ref. SOL-200 Photovoltaic panel 200W on tilting foot with device for measuring the tilt angle (description P.146)
- Ref. SOL-CAB30 Connection cable for photovoltaic panels 30m 3G6mm² (description P.146)
- Ref. ACQUI-SOL Interface with 3 sensors and acquisition software to read the installation's electrical characteristics. (description P.129).
- Ref. DC10 Power supply DC 0 - 220V - 10A protected. Simulates the panels. (description P.147).
- Ref. SOL-ART12 Source of artificial sunlight. (description P.144)

SEALED SOLAR BATTERIES



ref. CIA-BAT24

- Lot of 2 sealed solar batteries 12V-12Ah.
- Separate cabling of the two sources for putting the 2 batteries in series or parallel.
- L x W x h: 280x190x130mm

LIGHTNING ARRESTER PROTECTION



ref. CIA-PRF

- Lightning arrester protection for 2-pole DC circuit - 500VDC.
- L x W x h: 180x80x90mm

INTERFACE FOR SAFETY TERMINALS



ref. CIA-BORN

- Interface unit for converting 2 photovoltaic type terminals into safety terminals 4mm.
- 32A Max.
- L x W x h: 105x80x90mm

MODULAR ENERGY METER



ref. CIA-CPT

- Single-phase modular energy meter 63A.
- Gauges key kWh/kW/Partial.
- Reset key.
- Resolution 0.1kW
- L x W x h: 170x140x100mm

PHOTOVOLTAIC SWITCH



ref. CIA-COM

- Photovoltaic switch 500VDC.
- 3-pole - 32A.
- Front operation control 90°
- Position: O/I
- L x W x h: 120x120x100mm

SOLAR CHARGE REGULATOR



ref. CIA-REG-C

- Solar charge regulator with LCD.
- Max current 20A.
- Operating voltage 12V or 24V.
- Input voltage range from 6.9 to 17.2VDC for 12VDC and from 17.3 to 43VDC for 24VDC
- 48VDC Max solar panel input
- Settings from a smartphone: battery and operating algorithms charging output with street light mode day / night mode
- Live data display (voltage, input / output power, etc.) or history via bar graph
- Protection against short circuits and overheating
- The display connected to the MPPT provides live viewing of system status information, including solar power in watts, battery voltage, charging current and more; to consult the history of values recorded continuously or of values over the last 30 days and configure the charge controller
- LxWxH: 200 x 200 x 130mm

NETWORK INVERTER



ref. CIA-OND05

- Network inverter 500W.
- Automatic synchronization on the network 230VAC-50Hz.
- Input on solar connector Male / Female coded
- 2 cables of 1 meter with polarized male & female solar connector to 4mm double well safety terminal to allow connection to the input safety plug.
- Output on 4mm safety terminal
- Network monitoring integrated into the box
- Kits of 2 forks, fitting tool adapted to the solar connector
- LxWxH: 176 x 243 x 71mm

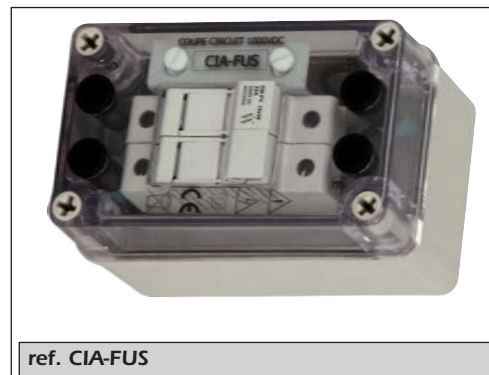
VOLTAGE CONVERTER



ref. CIA-CONV

- Pure sine-wave voltage converter 300W.
- Input voltage, on safety terminals, from 18.4 to 34VDC and 230VAC-50Hz +/- 3% output on 1P socket
- Output for one load only
- On / off button on the output side
- Short circuit output and ripple protection direct current too high
- LxWxH: 86 x 165 x 260mm

PHOTOVOLTAIC 2-POLE FUSE HOLDER



ref. CIA-FUS

- Photovoltaic two-pole fuse holder 10x38mm,
- 2-pole for DC.
- Fuse replacement without opening box
- Max: 1000VDC.
- L x W x h: 130x80x90mm
- Supplied without fuse cartridges gPV.
- Option Fuse gPV 10x38 1000V: Ref. SBT-FUS10

2-POLE CIRCUIT-BREAKER



ref. CIA-VDE

- Two-pole Photovoltaic circuit-breaker with EMS default current in compliance with Standard VDE0126.
- Adjustable without opening box
- Gauge 16A-30mA.
- Use voltage from 196 to 250VAC
- L x W x h: 170x140x100mm

PHOTOVOLTAIC INVERTER



ref. CIA-INV

- Photovoltaic inverter switch 500VDC.
- 6-pole - 32A.
- Front operation control 190°
- Position I/O/I
- L x W x h: 170x140x100

For instance :

2 x CIA-COM	1 x CHT-V6	6 leads 402S-R
1 x CIA-PRF	1 x CIA-SE0	15 leads 402S-N
1 x CIA-FUS	2 x CIA-MT37	10 leads 402S-B
4 x SBT-FUS12	2 x SOL-200	2 leads 404S-R
1 x CIA-OND05	1 x SOL-CAB30	6 leads 404S-N
3 x CIA-CPT		2 leads 404S-B
1 x CIA-BORN		4 leads TE-200
1 x CIA-VDE		

Tips and wiring diagrams provided

OPTION ACCROCHAGE SUR RAILS



Option for fast attachment onto an universal rail. In this way, you can attach your various industrial components onto a grid in order to make wiring and testing easier. To order this option, simply add -FIX to the end of the reference
Ex : CIA-VDE-FIX

1 x CIA-COM	1 x CIA-MT37
1 x CIA-BAT24	2 x SOL-200
1 x CIA-PRF	1 x SOL-CAB30
5 x CIA-FUS	15 leads 402S-R
12 x SBT-FUS12	15 leads 402S-N
1 x CIA-REG	2 leads 404S-R
1 x CIA-CONV	2 leads 404S-N
1 x CIA-BORN	2 leads TE-200

For instance : set of components for the study of the wiring of a solar energy system for isolated site using batteries.

Tips and wiring diagrams provided

SOLAR PUMP 24VDC - 3.5A



ref. CIA-POMP

- Self-priming
- Power supply on safety terminals

PHOTOVOLTAIC/WIND KIT FOR ENERGY RESTITUTION

Kit of photovoltaic components for the study of a solar installation with total or partial return of energy to the 230VAC-50Hz electrical network.



EDUCATIONAL OBJECTIVES

- Learn about a photovoltaic installation with energy feeding to the grid.
- Study the types of energy feeding to the grid, e.g. total or partial.
- Learn about and understand the photovoltaic elements present.
- Learn about and understand the safety elements present.
- Wire a photovoltaic installation with network restitution.
- Create the wiring of a photovoltaic installation.
- Take the electrical measurements of the different values.
- Study the efficiency and incidences related to the positioning of the solar panels.
- Study the use of a grid inverter and energy meter.

Proposed Practical Works

- Creation of the complete wiring diagram for feeding all the energy produced by the panels.
- Creation of the complete wiring diagram for feeding the non-consumed energy produced by the panels.
- Take the measurements of voltage, current and power of the solar panels.
- Take the measurements of the fed voltage, current and power.
- Calculation of the efficiency of the installation.

ref. KX-EDU

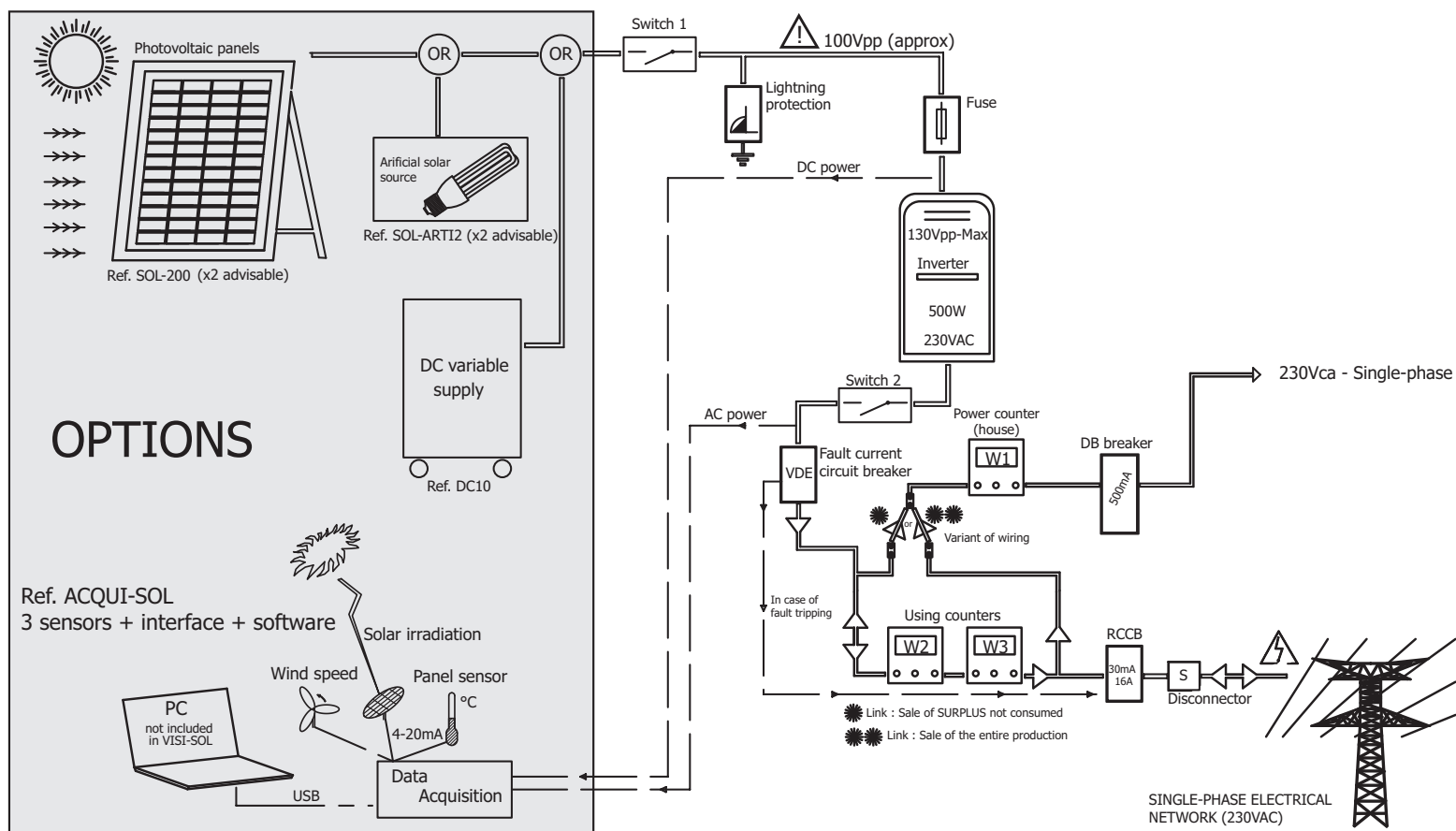
TEACHING RESSOURCES STUDENT AND TEACHER

COMPOSITION OF THE KIT

- 2 photovoltaic switches 0/1 - 32A/500VDC - 3 Poles.
 - 1 500VDC lightning arrester.
 - 1 photovoltaic fuse holder 1000VMax. 2 poles. 10x38mm.
 - 4 gPV 1000V photovoltaic fuse cartridges. 10x38mm.
 - 1 network inverter 500W.
Automatic synchronizatin on the 230VAC-50Hz network.
Input voltage from 65 to 130VDC.
Thermal protection integrated in the housing.
 - 3 single-phase 80A modular energy meters.
Measurement and visualization of total and partial energy.
Measurement of electrical parameters I,V,f, Powers, power factor. Resolution 10Wh, 10VARh.
 - 1 voltage control relay.
 - 1 switch disconnecter 25A - 5.5kW/400V.
 - 1 bipolar 30mA/16A differential circuit breaker.
 - 1 bipolar branch circuit breaker 500mA, 230 V AC, 15/30/45 A.
 - 1 male 2P+E plug.
 - 1 modular 230V 2P+E socket outlet
 - 1 set of 10mm² connection terminals.
 - 1 set of 4-6mm² photovoltaic connectors.
 - 1 sheet of 10 photovoltaic labels indicating the various safety operations.
 - 1 file on CD: detailed instructions for each component, wiring diagram as well as practical exercises.
- Works with panels with characteristics between 35 and 150VDC.

OPTIONS

- Ref. SOL-200 (2 panels recommended) 200W photovoltaic panel on tilting stand with protractor for measuring the angle of inclination.
- Ref. SOL-CAB30 Connection cable for photovoltaic panels 30m 3G6mm².
- Ref. EOLYS-500 450W three-phase wind turbine.
- Ref. ACQUI-SOL Interface with 3 sensors and acquisition software to record the electrical characteristics of the installation.
- Ref. DC10 DC power supply 0 - 220 volts - 10A protected. Simulates panels.
- Ref. SOL-ARTI2 Artificial solar source.
- Ref. HABITAT-2 Habitat panel in use on site with electrical network.



SIMILAR PRODUCT IN MODULAR SOLUTION



Set of photovoltaic modules (H-250mm) and solar panels for studying a solar installation with energy feeding to the 230V AC grid.

ref. QUICK-MPLUS

PHOTOVOLTAIC KIT FOR ISOLATED SITE



EDUCATIONAL OBJECTIVES

- Understand a photovoltaic installation such as an isolated site
- Study the energy chain (production, storage, use of a solar charge regulator for battery)
- Apprehend and understand the photovoltaic elements present
- Apprehend and understand the security elements present
- Wire a photovoltaic installation in an isolated site
- Carry out the wiring of a photovoltaic installation
- Carry out the electrical measurements of the different values
- Study the yield and the impact related to the positioning of the solar panels

Proposed Practical Works

- Creation of the complete wiring diagram.
- Perform parameter setting of the battery charge controller.
- Perform the measurements of voltage, current and power of the solar panels.
- Perform the measurements of voltage, current and power at output 24V DC.
- Calculation of the efficiency of the installation.
- Calculation of the charge/discharge time of the battery.

ref. KX-TEST-C



TEACHING RESSOURCES



Requires download in Play Store or Apple Store the free application "Victron Energy".

Display on tablet or Smartphone:

- Voltage - Current of the panel / Power (W)
- Voltage - Current of the battery / Charge current
- On-Off state charge

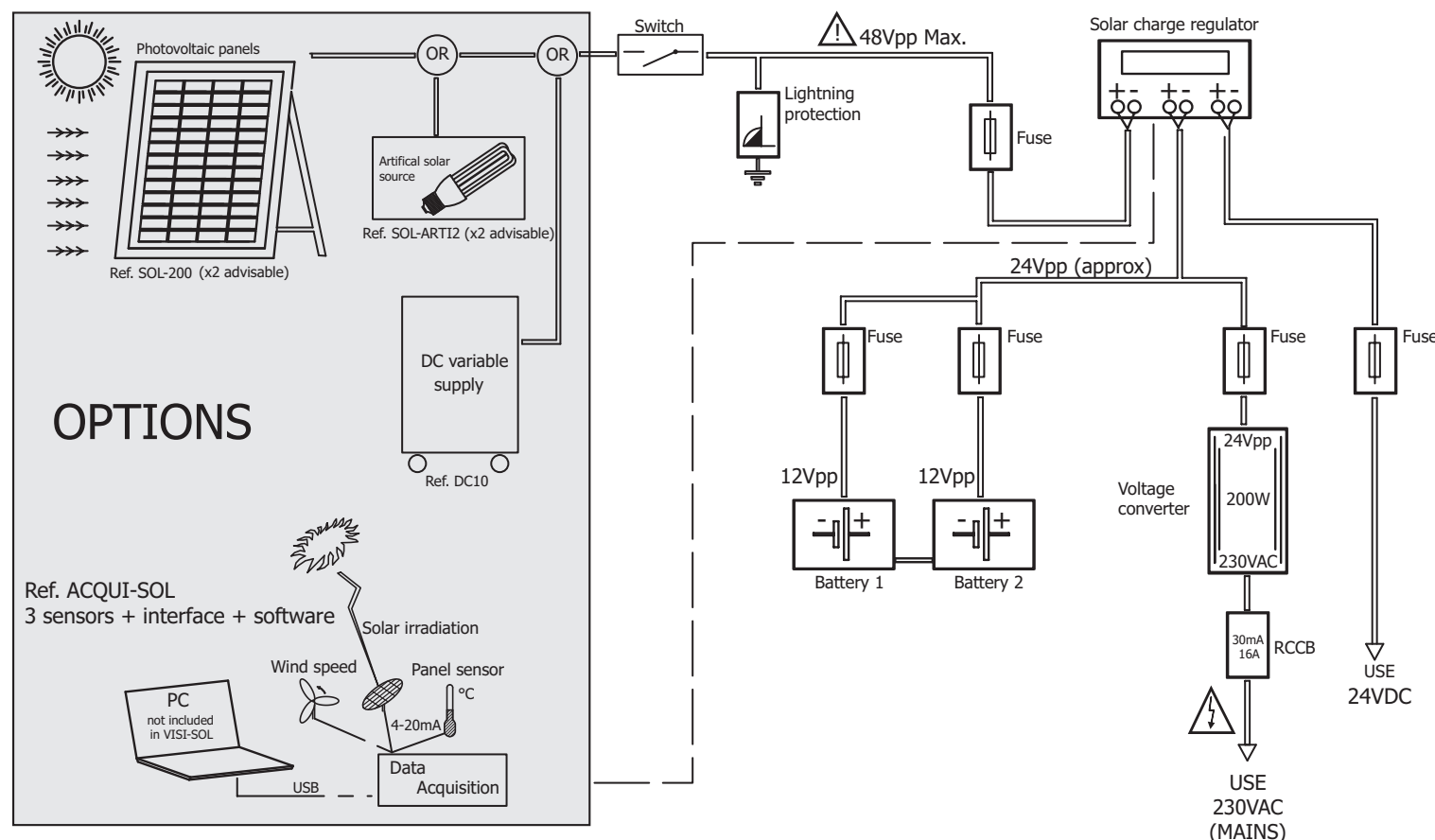
- Apprehend a photovoltaic installation of isolated site type.
- Apprehend and understand the photovoltaic elements involved.
- Perform wiring of a photovoltaic system.
- Perform the electrical measurements of the different values.
- Study the efficiency and incidences of solar panels positioning.
- Study the energy system (production, storage, charge, discharge).
- Study the use of a solar charge controller for batteries.

COMPOSITION DU KIT

- 1 photovoltaic switch 0/1 - 32A/500VDC - 3 Poles.
 - 1 500VDC lightning arrester.
 - 1 pure sine voltage converter 50Hz- 24/230VAC of 120VA. Self-protection by resettable thermal fuse
 - 5 photovoltaic fuse holders 1000VMax. 2 poles. 10x38mm.
 - 12 gPV 1000V photovoltaic fuse cartridges. 10x38mm.
 - 2 sealed solar batteries of 12VDC - 14Ah
 - 1 bipolar 30mA/16A differential circuit breaker.
 - 1 bipolar 3A circuit breaker.
 - 1 undervoltage coil
 - 1 emergency stop
 - 1 male 2P+E plug.
 - 1 solar charge controller communicating via Bluetooth 24V/15A with display indicating:
 - battery charging
 - the intensity provided by the solar panels
 - battery charge current
 - the current consumed by the load circuit
 - battery voltage
 - 1 set of 10mm² connection terminals.
 - 1 set of 4-6mm² photovoltaic connectors.
 - 1 sheet of 10 photovoltaic labels indicating the various safety operations.
 - 1 file on CD: detailed instructions for each component, wiring diagram as well as practical exercises.
- Works with 75VDC maximum specification panels (not supplied).

OPTIONS

- Ref. SOL-200 (2 panels recommended) 200W photovoltaic panel on tilting stand with protractor for measuring the angle of inclination.
- Ref. SOL-CAB30 Connection cable for photovoltaic panels 30m 3G6mm².
- Ref. ACQUI-SOL Interface with 3 sensors and acquisition software to record the electrical characteristics of the installation.
- Ref. DC10 DC power supply 0 - 220 volts - 10A protected. Simulates panels.
- Ref. SOL-ART12 Artificial solar source.
- Ref. HABITAT-3 Habitat panel in use on an isolated site.



SIMILAR PRODUCT IN MODULAR SOLUTION



Set of photovoltaic modules (H-250mm) and solar panels for studying a solar installation on an isolated site.



ref. QUICK-NPLUS

Sockets on the back of the console for connecting the modules



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