

# KITS & COMPONENTS

## Kits for housing units

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## Components for housing units

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## Components & industrial kits

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## Quick-Elec Concept

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



# ELECTRICAL KITS FOR HOUSING UNITS

## Wiring kits for housing units



### BASIC KIT

ref. KX-A2

- 4 two-way switches
- 2 push-buttons
- 2 16A circuit breakers
- 1 32A circuit breaker
- 1 analogue timer switch
- 2 cable outputs
- 1 230V remote control switch
- 1 wall-mounted spotlight
- 2 viewing ports + lamps
- 1 fluorescent tube
- 5 branch boxes with connections
- 1 residual current switch - A class - 40A bipolar - 30mA
- 1 residual current switch - AC class - 25A bipolar - 30mA
- 100 meters of 20mm protective, insulating, pliable sheathing
- 100 meters of cable 1.5mm<sup>2</sup> Red / blue / green-yellow / purple
- 100 meters of cable 2.5mm<sup>2</sup> Red / blue / green-yellow
- 10 meters of cable 3 x 6mm<sup>2</sup>
- 20 boxes of flush fittings for hollow wall (16Ø65; 4Ø40)
- 1 10m nylon needle.
- 2.5m of raceway + end fitting + partition + connection
- Detailed assembly instructions with diagrams.
- 1 one-way switch
- 1 double push-button
- 1 20A circuit breaker
- 1 timer (1 to 7 mins)
- 6 sockets
- 2 10A thermal magnetic circuit breakers
- 1 distribution box
- 1 ceiling light
- 1 built-in 12V spotlight
- 1 wall fitting + lamp



### LIVING ROOM

ref. KX-B

- 1 TV socket
- 1 push-button
- 10m TV cable
- 10m phone cable
- 1 telephone socket
- 1 set of door bell
- 1 2A thermal magnetic circuit breaker



### 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

## Electrical wiring kit for an apartment with a surface area around 35m<sup>2</sup>



All electrical components in this kit are flush mounted.

### ref. KX-T

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

## Video kit for electrical door opener



### ref. KX-M

- 1 IP54 protruding external entry phone terminal
- 1 internal black and white video entry phone
- 1 modular power transformer
- 1 2A thermal magnetic circuit breaker
- 1 13-module PVC unit
- 1 branch box
- 1 10m Nylon needle
- 100m of 16mm-diameter ICO sheathing
- 20m of multi-pair cable

*This kit requires a 24V AC electric door opener.  
You will find this electric door opener in the KX-H kit.*

## Audio kit for electrical door opener



### ref. KX-L

- 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.  
You will find this electric door opener in the KX-H kit.*

# ELECTRICAL KITS FOR HOUSING UNITS

## Heating power management kit



ref. KX-R

- 1 power controller
  - weekly programming of 8 heating areas with pilot wire
  - adjustment to the nearest minute
  - copy/paste function for simpler programming
  - programmable absences of between 1 and 99 days
  - Optional control based on external temperature
  - Single-phase load shedding
  - Control of 2 relay outputs
  - 230V power supply
- 2 radio break contacts designed to switch off the convectors
- 1 external temperature probe
- 1 telephone transmitter associated with a telephone & an automatic switchboard unit:
  - communicates with the controller
  - voice assistance & interphone dialogue.
  - indicates the temperature of the part
  - allows the roller-blind, heating and lighting to be controlled via the telephone.
- 2 500W convectors with pilot wire
- 1 1200 x 800mm electric roller-blind
- 1 external light
- 1 modular table
- A set of circuit breakers, including a 30mA residual current unit
- Control switches for the roller-blind and lighting
- Rolls of cables, 100m of 20mm-diameter protective, pliable insulating sheathing and branch boxes, required for wiring the assembly
- Supplied with instructions & diagrams

## Cut-off device + convector kit



ref. KX-D

- 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 1.5mm<sup>2</sup> cable Red / blue / green-yellow
- 1 auxiliary heater 600W
- 3 boxes to be flush-fitted Ø65
- 1 branch box

## Kit for the visible wiring of a double garage with storeroom



ref. KX-S

- 36m of Ø16 and 20mm rigid insulating tube.
- 10 sleeves for Ø16 and 20mm rigid insulating tubes
- 20 elbows for Ø16 and 20mm rigid insulating tubes
- 6 T-fittings for Ø16 and 20mm rigid insulating tubes
- 100 clamps for Ø16 and 20mm rigid insulating tubes
- 100 pins for the clamps
- 1 sealed modular table
- 1 row of 13 modules
- 1 40A-30mA class A double pole differential circuit breaker
- 2 1P+N 10A - C circuit breakers
- 1 1P+N 16A - C circuit breaker
- 2 1P+N 20A - C circuit breakers
- 1 dusk-to-dawn switch
- 1 230V remote control switch
- 1 multi-function timer with switch off warning
- 2 surface-mounted two-way switches
- 1 surface-mounted double two-way switch
- 6 surface-mounted push-buttons
- 7 surface mounted 16A 2P+E sockets
- 3 36W fluorescent tubes
- 2 60W-E27 viewing ports
- 2 500W convectors
- 2 visible DCL packs + B22 sockets
- 2m of raceway
- 6 branch boxes
- 7 100m coils of 1.5mm<sup>2</sup> rigid cable in blue, red, violet, green yellow, and in blue, red, green yellow for 2.5mm<sup>2</sup> rigid cable.
- supplied with wiring diagram and instructions.

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

## Code access control kit

ref. KX-P

- 1 protruding case into which the code is programmed directly via the keypad. Relay outputs
- 1 power supply
- 1 electric door opener
- 1 2A thermal magnetic circuit breaker
- 1 8-module PVC box / 1 branch box / 1 10m Nylon needle
- 20m of multi-pair conductor
- 100m of 16mm-diameter ICO sheathing



## Swipe card access control kit

ref. KX-N

- 1 unit
- 1 vandal-proof swipe card reader to be flush-fitted
- 20 application swipe cards
- 1 power supply
- 1 2A thermal magnetic circuit breaker
- 1 8-module PVC unit / 1 branch box / 1 push-button
- 1 box of flush fittings
- 1 10m Nylon needle
- 100m of conductor 0.75mm<sup>2</sup> / 100m of 16mm-diameter ICO sheathing



## Access control using swipe cards & digicode



ref. KX-2

control of 2 access points using swipe cards and 1 access point using digicode.

- 1 differential circuit-breaker 16A/30mA
- 1 2P 4A-C circuit breaker
- 1 VIGIK 8-module power supply. 230V AC Bus output 27V DC.
- 1 VIGIK unit for swipe card control for 2 access points.
- 1 swipe card encoder + access control software. USB output to PC.
- 6 VIGIK encodable swipe cards
- 1 code keypad for surface mounting. Power supply 24V DC. Code can be set.
- 1 power supply 24V DC - 2.2A.
- 2 electric door openers with magnetization 24V DC.
- 1 electric seal 24V DC.
- 3 surface-mounted pushbuttons.
- 20 metres of shielded cable 5 x 0.60.

The swipe card programming software supplied enables:

- the access to each door to be set.
- the access authorizations of users to be set according to times and days of the week.
- user and administrator swipe cards to be set according to their access authorization level.

## Video surveillance + 500Gb recorder kit



ref. KX-VID17

- Digital color video recorder with 4 channels, 500GB SATA HDD, H264 compression, 4 alarm inputs and 1 relay output, integrated Ethernet card for your network connection.
- 17" TFT LCD with BNC connection
- 4 color cameras with CCD 1/3". 18 Infrared LEDs for night vision integrated, high degree of protection IP68 for indoor and outdoor use, equipped with a protective visor and an adjustable mounting foot.
- 4 220/240V power supply - 12VDC for camera
- 4 cables of 20 meters for connecting the cameras to the recorder
- 100 meters of 16mm duct ICA
- 1 nylon needle (10 meters)
- Detailed technical instructions

# ELECTRICAL KITS FOR HOUSING UNITS

## Anti intrusion alarm kit



### ref. KX-K

- 1 230V alarm unit
- 1 coded lock
- 2 IR motion sensors
- 1 alarm contact under entrance mat
- 2 sets of magnetic contacts for doors and windows
- 1 flashing light 12V
- 1 siren 12V
- 1 spare battery
- 1 8-module box
- 1 set of blanking pieces
- 1 nylon needle 10m
- 1 2A medium voltage circuit breaker
- 50m of reinforced cable 5x0.6mm<sup>2</sup>
- 100m of 16mm protective, pliable insulating sheathing
- 2m of raceway
- Assembly instructions

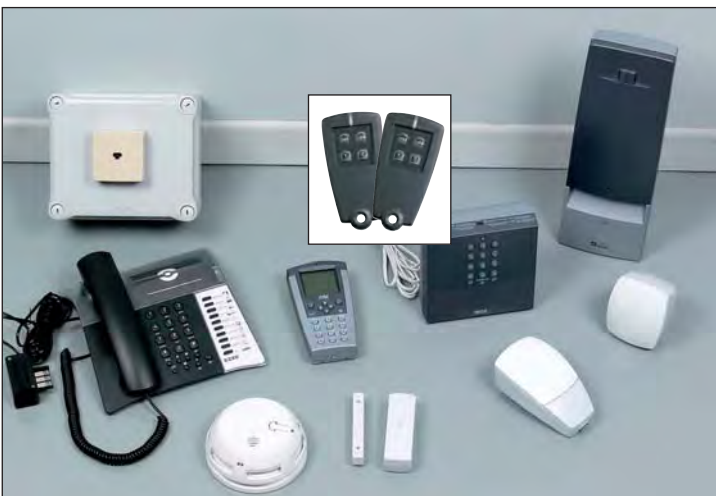
## Anti intrusion alarm kit



### ref. KX-KFIL

- 1 2-area wired unit, 4 loops with control keypad, built-in siren & phone transmitter
- 1 wired keypad with vocal code for the control of the intruder protection
- 1 infrared sensor detecting the changes in infrared radiation produced by body movement in a detection area of 90°
- 1 dual-technology with infrared detection analyzing the change of infrared radiation emitted during a movement, and hyper frequency detection analyzing the movement speed of a person.
- 1 opening universal contact, protected, white
- 1 internal siren
- 1 optical smoke sensor (built-in buzzer)
- 50m of wire
- 100m of 16mm protective, pliable insulating sheathing
- 1 10m nylon needle
- Supplied with detailed manufacturer's instructions

## Wireless anti-intrusion alarm kit



### ref. KX-KSF2

- 1 radio unit fitted with a siren which can be disabled. 4 programmable tones (intrusion, fire, technical and emergency).
  - 1 radio keypad for receiving information and remote control, with LCD display: activation and deactivation. Fully on and partially on. 3 access codes: 1 master, 2 users. Log of the last 200 events. Information about the system status: activated and deactivated, open doors, etc. Siren test. System configuration. Allocation of sensors to partially on.
  - 1 infrared sensor. 12m range (90°)
  - 1 dual technology intrusion sensor: infrared + microwave frequency 12m range (90°).
  - 2 break contacts for protecting access points (doors and windows, etc.)
  - 1 optical smoke detector (Integrated buzzer)
  - 1 telephone transmitter, which is associated with a telephone and an automatic switchboard unit, carries out all the alarm transmission and reception functions. Voice assistance and interphone dialogue. 4 programmable telephone numbers. Message which can be personalised. Built-in keypad for activating and deactivating monitoring and for programming telephone numbers.
  - 2 radio remote controls. 4 keys. A range of 100m to 300m.
- All components are fitted with alkaline batteries ensuring an autonomy of several years. Supplied with detailed manufacturer's instructions.

## Fire door management kit - DAD

ref. KX-G



- 1 fire central alarm DAD
- 1 automatic smoke detector
- 2 manual triggers
- 1 illuminated evacuation unit
- 1 magnetic vacuum 12V/24V
- 1 aerosol spray for the smoke detector test
- 1 thermal magnetic circuit breaker
- 100m of 16mm-diameter ICO sheathing
- 30m of MXE cable
- 100m of cable 3x 0.75mm<sup>2</sup>
- 2m of electrical distribution raceway
- 1 branch box
- Assembly instructions

## New concept Quick-Elec See Pages 65 to 69



## Emergency lighting units control kit

ref. KX-41



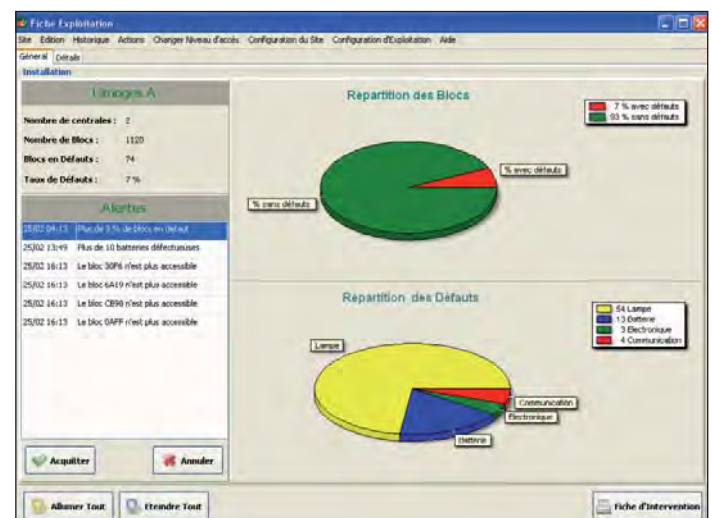
KX-41 is an emergency lighting unit control kit with two operating methods: addressable, self-contained or powered from a central source 48V DC.

*Components for operating from a central source 48V DC:*

- 2 LED 'EVACUATION' lighting units
- 2 LED 'MOOD' lighting units
- 1 modular remote control for switching lighting units on and off
- 1 switching unit controlling the 'MOOD' lighting units
- 1 central power source 48V DC/160W, equipped with sealed batteries, 4 fuse outputs, digital display of operating voltage, drain current, mains presence indicator lights, battery operation, battery charging and faults.

*Components for operating self-contained units:*

- 1 addressable, LED 'MOOD' self-contained emergency lighting unit (SELU), with information transfer to PC.
- 1 addressable, LED 'EVACUATION' self-contained emergency lighting unit (SELU), with information transfer to PC.
- 1 addressable, 'TWO-FUNCTION' LED self-contained emergency lighting unit (SELU), with information transfer to PC.
- 1 modular BTI URAVISION interface for ETHERNET linking between the SELU network and computer
- 1 SELU monitoring program with faulty units reported to PC screen



# ELECTRICAL KITS FOR HOUSING UNITS

## Home VDI Kit with Communication Unit



ref. KX-U

- All components for the GRADE 3 wiring of a home VDI (voice, data, image) system. Satisfies new multimedia requirements for the home Based on the implementation of a star-wired wire network, and which carries computer, TV/SAT and telephone signals. The RJ45 sockets, wired directly into the VDI unit, become universal. They can receive any of the 3 desired signals: Voice (telephone) Data (Computer) Image (terrestrial TV) Wiring possible with partial or complete unbundling.
- 1 communication unit with patch, GRADE3
  - 1 internal termination device (DTI connexion box)
  - 1 telephone distributor
  - 1 kit to fasten equipment on the grid
  - 1 modular Terrestrial/ satellite TV distributor
  - 1 modular broadband filter
  - 1 set of GRADE3 RJ45 leads in 50cm and 3m lengths
  - 1 set of RJ11/RJ45 telephone leads and RJ45/Type 'F' TV leads
  - 10 RJ45 wall sockets GRADE3
  - 2 TV/SAT wall sockets
  - 1 ETHERNET switch 5 ports
  - 25 metres of 75 Ohms TV /SAT co-axial cable
  - 50 metres of cable 4 pairs GRADE3 900MHz
  - 1 set of equipment flush fittings for dry partitions.
  - 1 100m coil of Ø20mm corrugated sheath

## Computer wiring kit

- 4 230V inverter system sockets
- 4 ISDN RJ45 connectors
- 2 16A circuit breakers
- 1 mini switch
- 1 telephone socket
- 1 PVC box
- 1 UDI mosaic distributor
- 9 boxes of flush fittings
- 2 branch boxes
- 1 10m nylon needle
- 2 metres of raceway
- 4 red plastic polarising slots
- Assembly instructions
- 40m of multi-pair computer cable
- 10m of multi-pair telephone cable
- 100m of 20mm protective, pliable insulating sheathing
- 100m of cable 2.5mm<sup>2</sup> Red / blue / green-yellow
- 5 RJ45 leads (1.5m)



ref. KX-F



Solar kits & components  
See Pages 138 - 141





## Living area wiring kit



Wiring kit for the main electrical equipment, type HOUSING in units, to complete an electrical installation similar to a 35m<sup>2</sup> 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

### 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

# ELECTRICAL KITS FOR HOUSING UNITS

## KNX bus study devices kit



This kit is a set of devices for studying and putting into service SCHNEIDER® and HAGER® multibrand 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 per make).
- 1 2-key pushbutton with indicator light.
- 1 presence detector.
- 1 4-output switch actuator.
- 1 2-output switch actuator.
- 1 2-output control actuator.
- 1 1-output control actuator.
- 1 2-output roller blind actuator.
- 4 Bulkhead lights 60W – 230VAC.
- ETS Lite configuration software.

## Additional KNX modules (compatible with our KNX system - See P. 153)

### KNX HEATING CONTROL LOT

- 2-key pushbutton module with indicator light.
- Thermostat module with programming screen + keys.
- 2-output switch actuator module.
- Resistive load module 320W – 230VAC + indicator light.

ref. DOMO-1



### SMARTPHONE CONTROL LOT

- InSideControl gateway module with power supply
- WiFi switch module

The InSideControl gateway links the KNX installation to the IP network (LAN).

Up to 5 smartphones / tablets can control the installation using the InSideControl "App/HD App, available for IOS and Android.

The gateway can be used as access interface to the bus (e.g. for ETS programming).

The functionalities of the application are configured with the InSideControl Builder software supplied. Smartphones or tablets communicate with KNX devices by WiFi.

The Smartphone and the InSideControl App/HD App are not supplied with the lot.

ref. DOMO-3



### KNX TOUCH SCREEN CONTROL LOT

The touch screen is used to view the states and control the KNX functionalities

- 7" touch screen (17.8cm) 65000 colours.
- Power supply 230VAC 50-60Hz.
- USB port
- LAN interface (10/100 Mbit/s)

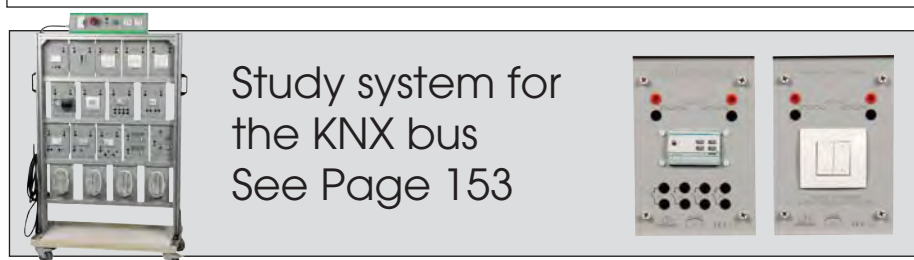


ref. DOMO-2

### HEAT AND LIGHT SENSOR LOT

- Hager 4-output switch actuator module
- Schneider heat and light sensor module

ref. DOMO-4



Study system for  
the KNX bus  
See Page 153

## 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. CIA-EM - Page 56).



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



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

ref. CIA-T24



ref. CHT-SP24

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. CHT-P4

2P + E socket 16A/250V-AC. Dim. 150 x 73 x 57mm.



ref. CHT-FLUO

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



ref. CHT-V10

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-VOLET

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



ref. CHT-V5

White light 230VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

ref. CHT-V54

White light 24VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

ref. CHT-V6

Red light 230VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

ref. CHT-V64

Red light 24VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

ref. CHT-V7

Green light 230VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

ref. CHT-V74

Green light 24VAC - Lamp 5W - Dim. 150 x 73 x 57mm.

# ELECTRICAL KITS FOR HOUSING UNITS

## Production equipment (settings & controls accessible without opening the boxes)

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 hardware 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	Instantaneous residual current circuit protection switch 25A - 30mA Classe AC	4	125x125x100mm
CIA-ID65	Instantaneous residual current circuit protection switch 40A - 30mA Classe AC	4	125x125x100mm
CIA-ID66	Instantaneous residual current circuit protection switch 40A - 30mA Classe A	4	125x125x100mm
CIA-ID67	Instantaneous residual current circuit protection switch 63A - 30mA Classe A	4	125x125x100mm
CIA-MT46	Modular circuit breaker Multi 9 Déclit 1 pole + E, 2 A curve C	4	130x80x85mm
CIA-MT47	Modular circuit breaker Multi 9 Déclit 1 pole + E, 10 A curve C	4	130x80x85mm
CIA-MT48	Modular circuit breaker Multi 9 Déclit 1 pole + E, 16 A curve C	4	130x80x85mm
CIA-MT49	Modular circuit breaker Multi 9 Déclit 1 pole + E, 20 A curve C	4	130x80x85mm
CIA-MT50	Modular circuit breaker Multi 9 Déclit 1 pole + E, 25 A curve C	4	130x80x85mm
CIA-MT51	Modular circuit breaker Multi 9 Déclit 1 pole + E, 32 A curve C	4	130x80x85mm



ref. CIA-DB500



ref. CIA-ID66



ref. CIA-MT49

## Control equipment

Ref.	Characteristics	Terminals	Dimensions
CHT-B3	Push button 10A/250V-AC	2	150x73x57mm
CHT-B4	Double push button 10A/250V-AC	3	150x73x57mm
CHT-C1	2 way switch 10A/250V-AC	3	150x73x57mm
CHT-S2	Simple switch 10A/250V-AC	2	150x73x57mm
CHT-S3	Double switch 10A/250V-AC	3	150x73x57mm
CHT-R5	Control for roller shutter Up - Down 10A/250V-AC	3	150x73x57mm
CHT-EM	Radio transmitter for lighting or roller shutter control. For changing the mechanical action of a switch to radio waves. Very simple setting. Powered by integral button battery. Requires radio receiver (see CHT-REVO page 55).	6	130x80x85mm



ref. CHT-B3



ref. CHT-S3



ref. CHT-R5



ref. CHT-S2

## Management equipment (settings & controls accessible without opening the boxes)

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 $\cos \varphi=1$	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-DIV72	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-DIV9	Single phase consumption indicator. For showing the number of kilowatt-hours consumed by part of an electrical installation and especially intended for heating and hot water circuits. Digital display and adjustment button on front. Power supply 230 V - 50 Hz. Nominal I from 2 A to 30 A resistive. Electrical energy supplier remote data bus input. Dry contact input HP/HC	8	125x125x100mm
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 <sub>max</sub> : 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

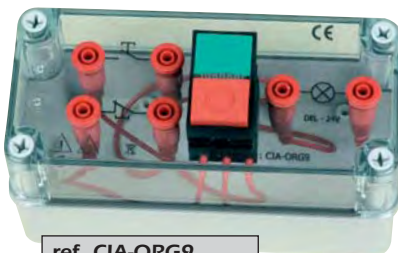


Industrial automation components (settings & controls accessible whitout opening the boxes)



## 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	Trigger action emergency stop pushbutton - NC contact	Turn to release
CIA-ORG6	Trigger action emergency stop pushbutton - NC contact	Key to release
CIA-ORG7	Double headed pushbutton NO+NC	/
CIA-ORG8	ON pushbutton OFF pushbutton, 24V LED	3 units in 1 box
CIA-ORG9	Double headed pushbutton NO+NC	With pilot light 24V
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	Pilot light with green LED	24V– 50 Hz
CIA-ORG14	Pilot light with red LED	24V– 50 Hz
CIA-ORG15	Pilot light with white LED	24V– 50 Hz
CIA-ORG16	Pilot light with yellow LED	24V– 50 Hz
CIA-ORG17	Pilot light with blue LED	24V– 50 Hz



## OPTION FOR HANGING COMPONENTS

HANGING ON RAILS.  
SEE PAGE 61



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 3-pole	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.

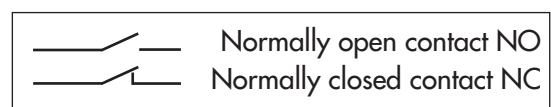
### AUXILIARY CONTACT BLOCKS FOR CONTROL CIRCUITS (10A MAX)

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

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



ref. CIA-C212



ref. CIA-C12



ref. CIA-RT40



ref. CIA-R31



ref. CIA-R22



ref. CIA-MT92



ref. CIA-MT38



ref. CIA-MT21

# INDUSTRIAL COMPONENTS

Industrial automation components (settings & controls accessible without opening the boxes)

## 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.



ref. CIA-T6



ref. CIA-ID92

## 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	Auxiliary
CIA-SE0	Emergency stop switch	3	25A	/
CIA-SE1	Emergency stop switch	4	25A	/
CIA-SE3	Emergency stop switch	4	25A	1NO



ref. CIA-SE0



ref. CIA-T24

## 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 disconnecter	without cartridge fuse
CIA-DIV2	3-pole + neutral fuses switch disconnecter	without cartridge fuse
CIA-DIV3	bridge, single pole (4 diodes)	35A
CIA-DIV4	Diodes bridge, 3-phase (6 diodes, Graetz bridge)	50A

Other voltage upon request.



ref. CIA-DIV1



ref. CIA-DIV4

## Starter & retarder



This unit starts up and decelerates squirrel-cage asynchronous, single-phase and three-phase motors smoothly with a low current. All settings can be performed without opening the unit. These settings are: acceleration time, deceleration time and torque. Lamps indicate the "On" and "rated speed" operating statuses.

- Supply voltage: 400V three-phase
- Control: On/Off operated using a built-in push-button.
- Acceleration adjustment: from 1.1 to 5 seconds
- Deceleration adjustment: from 0 to 5 seconds
- Torque adjustment: from 20% to 65% of the breakaway torque of the direct motor
- Maximum current: 6A

ref. DEMELEC



**THERMAL-MAGNETIC CIRCUIT-BREAKERS FOR MOTOR**

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

Other voltage upon request.



**MOBILE POWER SUPPLY BOX**

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



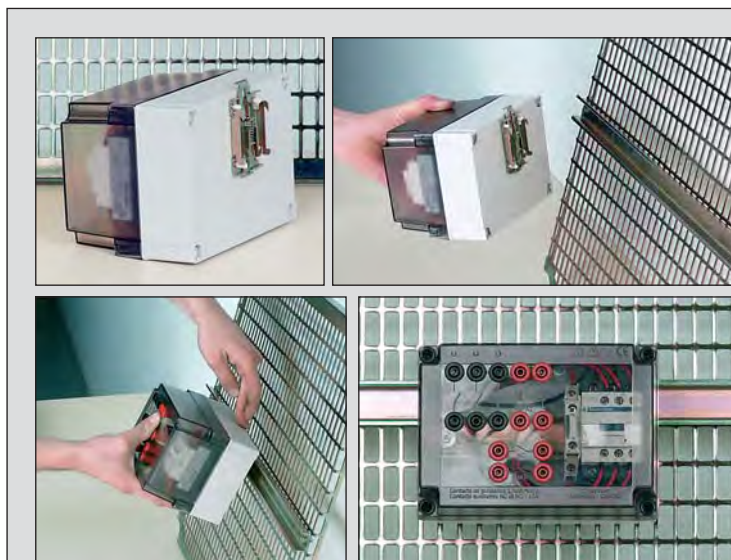
**BENCHTOP MOTORS**

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

**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 2.5mm<sup>2</sup> conductor can be done through the torus. The secondary of the current transformer is wired on 2 safety sockets 4mm.

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



**OPTION FOR HANGING ON RAILS**

Example of industrial component (Ref. CIA-C12) with hanging option for fast attachment onto a universal rail. In this way, you can attach your various industrial components onto a grid in order to make wiring and testing easier. This option is available for all components on pages 55 to 61. To order this option, simply add -FIX to the end of the reference.

**Ex : CIA-C12-FIX Plus value**

## Source switching kit



ref. KI-COMS

Despite the 125A current supported by the reversing switch, and in order to prevent damage to the attached components (terminals and fuse holders, etc), the charging current must not exceed 16A.

**A pedagogical manual comprising diagrams, properties and instructions relating to each component is supplied with the kit.**

This industrial kit comprises a motorised source switch and control accessories used for switching from one power source to another. One of them is deemed «NORMAL» and the other "EMERGENCY». The latter is used if the former experiences an outage. The main application is to provide an uninterrupted power supply in case of mains network fail. This switch (or reverser) is often built into the low-voltage master distribution board cabinets.

Switching from the normal source to the emergency source is performed manually (using the palm switch) or automatically (using a control module).

The control module detects the absence of the normal source and controls the switch which activates the emergency source. Lamps show the status of the switch.

### COMPRISES

- 1 motorised reversing switch with three stable positions (I-0-II), in charge switching.
  - Sectioning by means of fully visible power cut-off
  - Electrical control of position by means of potential-free dry contacts
    - emergency manual control
    - with padlock
    - 4-pole, 125A, 400V network, 3P+N+E
- 1 automatic control module for source switch
  - DIN modular case
  - relay output for control of the reversing switch
  - display + keys on the front for programming
- 1 600 x 500mm detachable wiring grid
- 5 4-pole fuse holders
- 1 auto/manual switch
- 1 3-position switch (source1-0-emergency source)
- 3 220V lamps
- 2 plastic cases for the switches and lamps
- 1 set of connection terminals
- 1 set of HARTING® industrial connectors for connection to the control components, lamps and charge.

## Asynchronous motor start-up kit



ref. KI-BASE Basic kit required

Male and female HARTING® 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 disconnecter
- 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
- 16 clip-on guides
- 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 HARTING industrial connectors for connecting the controls and motor from the frame.

## 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:

- 1 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
- 1 USB cable and the SoMove® software.
- 1 GV2 motor circuit-breaker.
- 1 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:

- 1 Schneider Altivar ATV32 controller for 1500W rotary machines. Single-phase mains power supply 230V AC 50-60 Hz. 3 x 230V AC outputs.
- 1 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.
- 1 USB cable and the SoMove software.
- 1 GV2 motor circuit-breaker.
- 1 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:

- 1 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
- 1 USB cable and the STARTER software.
- 1 GV2 motor circuit-breaker.
- 1 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

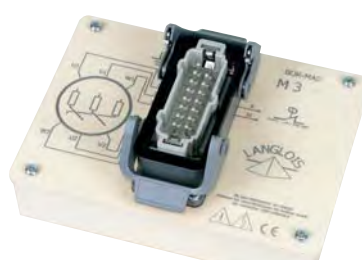


The KT-1 kit can be completed by a fan.

- 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 HARTING® connector.



*Bottom view*

## 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.

### 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.

ref. KT-1

### FAN OPTION



*Protection grid removed for photo purposes only*

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



**QUICK-ELEC**

## **NEW CONCEPT QUICK-ELEC**



### **THE NEW QUICK-ELEC CONCEPT IS A MODULAR TEACHING SOLUTION PERFECTLY SUITED TO ELECTRICAL ENGINEERING COURSES**

The frames (3 models available) are made of light and sturdy anodized aluminium sections. Equipped with a power supply panel, they connect directly to the 230V mains on a 2P+E socket.

The different modules (H 250mm) are very easy to position on the rail system. Cabling is carried out using 4-mm safety leads.

**DISCOVER THE NEW CONCEPT ON PAGES 66 TO 69**

## Choice of frames



ref. MODULO-1

- Wheeled frame.
- Takes 20 modules (W-166mm x H-250mm)
- Dimensions: H-1610 x W-940 x D-500mm



ref. MODULO-2

- Wheeled frame.
- Takes 20 modules (W-166mm x H-250mm)
- Wood shelf 1500 x 350mm, with easy height adjustment
- Dimensions : H-2040 x W-1620 x D-650mm



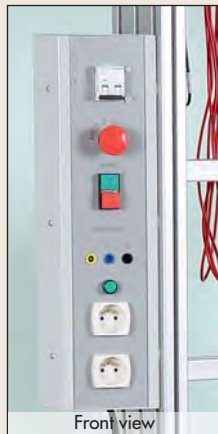
ref. MODULO-3

- Frame for attaching to a table. (table not supplied)
- Takes 24 modules (W-166mm x H-250mm)
- Dimensions (without table): H-1100mm x W-1500 x D-500mm
- Depth adjustable using 2 slides attached to your table. Horizontal travel 250mm.

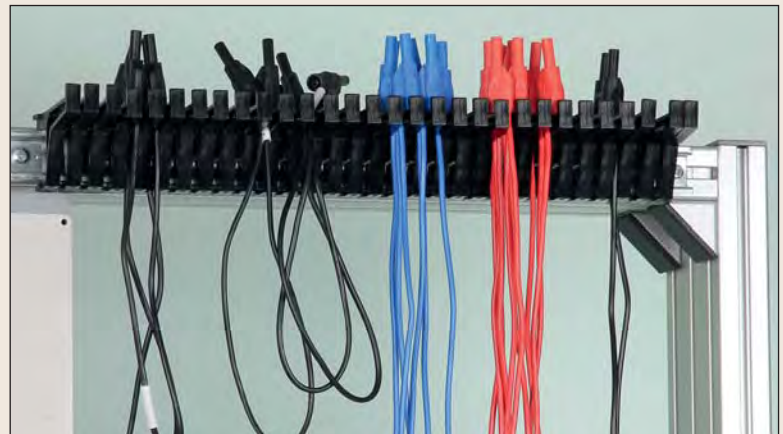
## Common elements to the three frame models



Rear view



Front view



### Power supply panel

Front:

- 1 16A circuit-breaker (30mA residual current circuit breaker as an option)
- 1 Emergency stop button
- 1 Pushbutton + ON indicator light
- 1 Mains output 230V+E on 4-mm safety terminals
- 2 Mains sockets 2P+E 230VAC

Rear:

- 10 Mains sockets 2P+E 230VAC

### Rack for leads

- Length: 50cm.
- 30 fingers.
- The assembly can be moved longitudinally over the whole width of the frame.
- Positioned at the back of the frame.

## Options compatible with MODULO frames



### SCREEN/KEYBOARD SUPPORT

- Screen support arm
- 3 rotation points on 2 ball joints
- Supports screens up to 12kg
- With shelf for keyboard and mouse

ref. **QUICK-ECRAN**

### CAPACITIVE LOAD

- Adjustable from 0 to nominal power
- 6 switches
- Jumpers for coupling
- Power 0.5 or 2 or 4kVAR

ref. **QUICK-CH05 (0.5KVAR)**

ref. **QUICK-CH20 (2KVAR)**

ref. **QUICK-CH40 (4KVAR)**



*The loads are designed to be easily removed from the frame.*



### CENTRAL UNIT SUPPORT

- Wire mesh 45x45mm
- Cabling space to rear
- Epoxy paint
- Dimensions: 400x400x195mm

ref. **QUICK-UC**

### RESISTIVE LOAD

- Adjustable from 0 to nominal power
- 6 switches
- Jumpers for coupling
- Power 0.5 or 2 or 4kW

ref. **QUICK-RHP05 (0.5KW)**

ref. **QUICK-RHP20 (2KW)**

ref. **QUICK-RHP40 (4KW)**



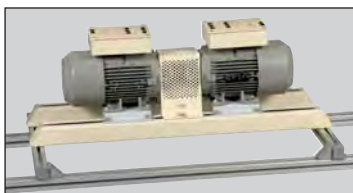
### WIRING FRAME

Equipped with:

- 1 Omega rail 300mm
- 1 set of 20 terminals 6mm<sup>2</sup>
- 1 box equipped with 20 safety terminals Ø4mm
- Dimensions 500x350mm

The frame can be removed instantly without tools.

ref. **QUICK-GRIL**



### GUIDE RAILS

- Rails for rotating machines.
  - The distance between the rails can be adjusted from 70 to 380mm
  - Dimension: Length 900mm
- Supplied with sliding nuts.

ref. **QUICK-RGA**

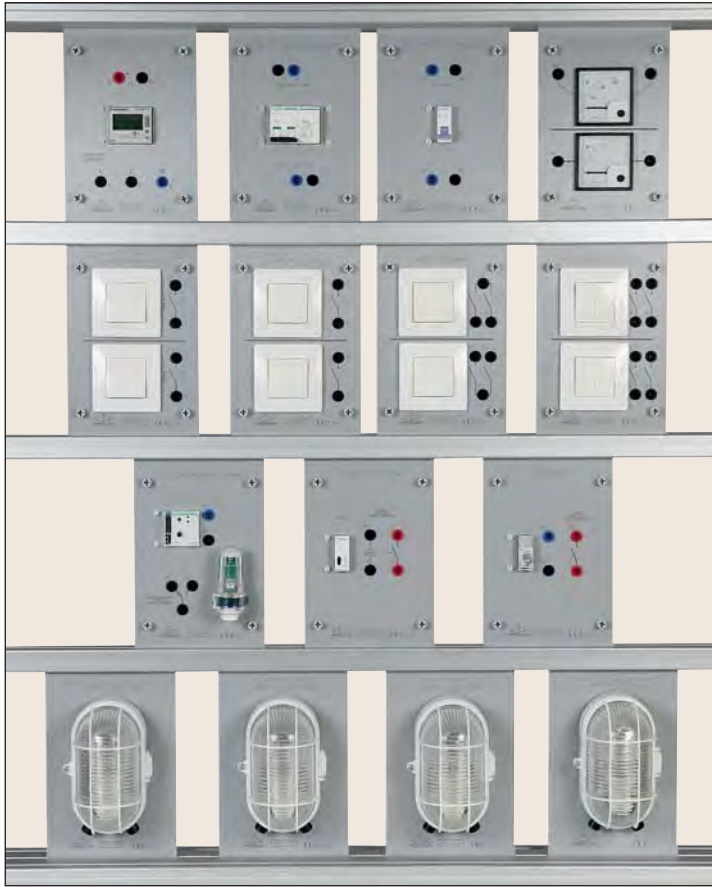


### STORAGE CABINET FOR MODULES

Takes at least 80 modules.

SEE PAGE 44  
REF. HB58

## Study of different wiring for lights



### EDUCATIONAL OBJECTIVES

- Study of house wiring diagrams.
- Study and operation of a single lighting circuit.
- Study and operation of a double lighting circuit.
- Study and operation of a two-way circuit.
- Study and operation of a remote control switch circuit
- Study and operation of a timer circuit.
- Study and operation of a dusk switch circuit.
- Study and operation of an energy meter.

TEACHING RESOURCES STUDENT & TEACHER

### Proposed Practical Works

- Creation of house lights wiring diagrams.
- Creation of different light wiring such as single, double, two-way, timer, remote control, dusk switch.
- Creation of energy meter wiring.
- Creation of reading of light power consumption.

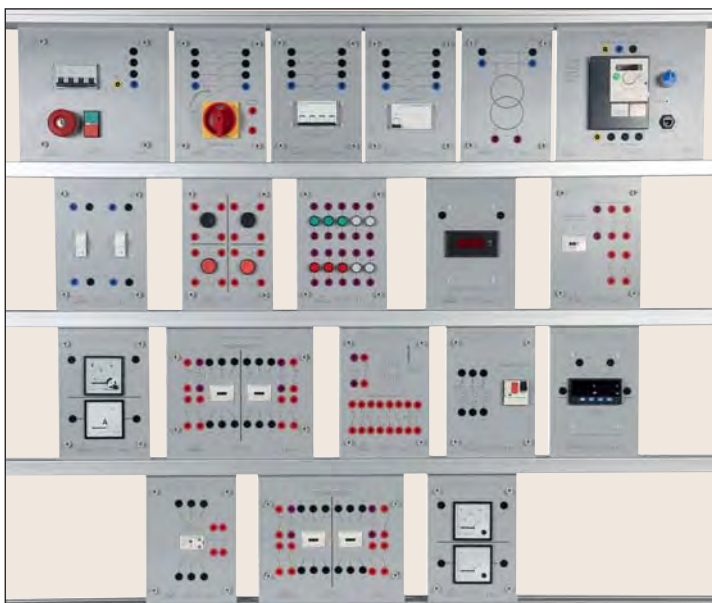
ref. QUICK-A

Set of modules for studying the different types of wiring of lights.  
The modules are cabled using safety leads Ø4mm.

### Comprises

- 1 Module – Two pushbuttons
- 1 Module – Two-way switch
- 1 Module - Two single lighting switches
- 1 Module – Two double lighting switches
- 1 Module – Single phase energy meter 63A
- 1 Module – Circuit-breaker 1P+E 16A
- 1 Module – Residual current circuit-breaker 30mA
- 1 Module – Timer, coil 230VAC-50Hz
- 1 Module – Remote control switch, coil 230VAC-50Hz
- 1 Module – Dusk switch + photocell
- 1 Module – Analogue ammeter 2.5A and Analogue voltmeter 250VAC
- 4 Modules – Bulkhead lights 230VAC-40W
- 1 set of safety leads for carrying out the different practical works.

## Study of wirings for starting asynchronous motors



### EDUCATIONAL OBJECTIVES

- Study of wiring diagrams for starting asynchronous motors.
- Study and operation of direct start-up.
- Study and operation of direct start-up with reversal of the direction of rotation.
- Study and operation of star/delta start-up.
- Configuration of a speed controller with software.
- Study and operation of start-up with speed controller.
- Using a digital wattmeter, ammeter and voltmeter.

TEACHING RESOURCES STUDENT & TEACHER

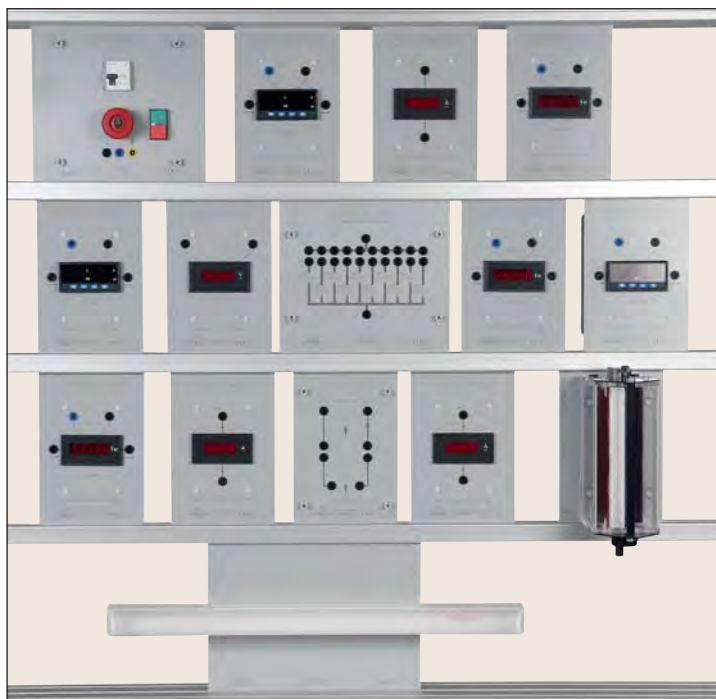
### Proposed Practical Works

- Creation of the wiring diagrams of different types of motor start-up.
- Creation of the different wirings of motor start-ups such as direct, direct with reversal of the direction of rotation, star/delta, with speed controller.
- Configuration of the speed controller using the SOMOVE software from Schneider
- Reading of the currents and voltages at the terminals of the asynchronous motor.
- Calculation of the absorbed power.

ref. QUICK-C



## Study of power factor rectification



### EDUCATIONAL OBJECTIVES

- Study of the power factor.
- Study of the powers.
- Demonstrate the advantage of rectifying power factor on the kWh cost

TEACHING RESOURCES STUDENT & TEACHER

### Proposed Practical Works

- Study of an industrial lighting installation using a fluorescent tube: Readings of current, power and voltage in each energy transmission line.
- Creation of the Fresnel diagram using active and reactive powers.
- Study of pure inductance in order to determine the capacitor battery to be installed.
- Study of resonance, max/min current.

ref. QUICK-L

Set of modules for studying the  $\cos \phi$  rectification of an electrical installation. The modules are cabled using safety leads  $\varnothing 4\text{mm}$ . Compatible load 230V-5A Max.

### Comprises

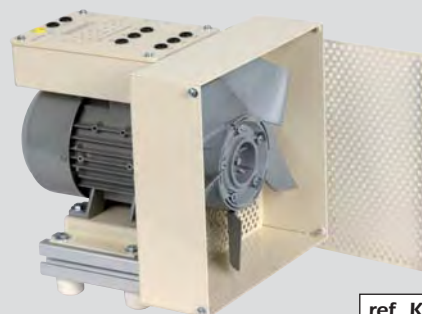
- 1 Module – Distribution of single-phase voltage 230VAC-50Hz
- 3 Modules – Digital ammeters 5A
- 1 Module – Digital voltmeter single-phase 230VAC
- 3 Modules – Digital multifunction displays 230VAC-5A. Displays of P/U/I/Power factor.
- 3 Modules – Reactive power 230VAC-5A.
- 1 Module for load connection
- 1 Module – battery of 10 capacitors 0.1 to 41 $\mu\text{F}$  with jumpers.
- 1 Module – safety inductance, variable from 0.1 to 1.4H - 2A
- 1 Module – Fluorescent tube 230VAC-18W
- 1 set of safety leads for carrying out the different practical works.

Set of modules for studying the different types of wiring for starting asynchronous motors. The modules are cabled using safety leads  $\varnothing 4\text{mm}$ . Compatible with asynchronous motors 400/690V 1500W max.

### Comprises

- 1 Module – Distribution of three-phase voltage +E 400V-50Hz
- 1 Module – Emergency stop
- 1 Module – 2 two-pole cut-out devices
- 1 Module – Four-pole magneto-thermal circuit-breaker 4A D-curve
- 1 Module – Residual current four-pole switch 30mA
- 1 Module – Three-pole magneto-thermal circuit-breaker, motor support
- 1 Module – Four-pole isolating switch
- 1 Module – Transformer 230V/24VAC-50Hz 120VA
- 1 Module – Four pushbuttons
- 1 Module – 10 indicator lights 24VAC-50Hz
- 1 Module – Reversing contactor 24VAC-50Hz with 2NO+2NC
- 2 Modules – Contactors 24VAC-50Hz with 2NO+2NC
- 1 Module – Timed contactor 24VAC-50Hz
- 1 Module – Thermal relay
- 2 Modules – Analogue voltmeter (400V) and ammeter (10A) displays.
- 2 Modules – Digital wattmeter displays.
- 1 Module – Speed controller 1.5kW power supply and three-phase 400V output.
- 1 set of safety leads for carrying out the different practical works.

### FAN OPTION



ref. KT-1M

*Protection grid removed for photo purposes only*

QUICK-C can be completed by a fan.

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