North America ELKO ep

Product Overview & Application Examples

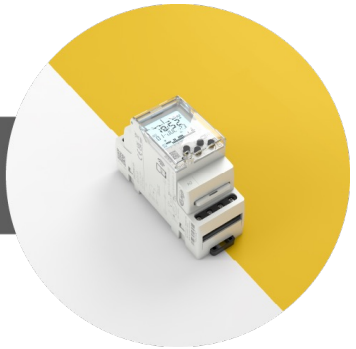
Time Relays

Monitoring Relays

Auxiliary Relays

Installation Contactors

Power Supplies



Digital Time Switches

c UL us LISTED

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Time Relays

CRM-91H/UNI

Multifunction time relay
10 functions,
time range 0.1s – 10days,
1x16A changeover

CRM-181J/UNI

Single-function time relay
1 function,
time range 0.1s – 100h,
1x16A changeover

CRM-2T/UNI

Star / Delta time relay
1 function,
time range t1: 0.1s - 100days, t2: 0.1-1s,
2x16A changeover

PTRM-216KP/UNI

Multifunction time relay with potential-free control input
11 pin octal socket,
10 functions,
time range 0.05s – 30days,
2x16A changeover

CRM-2H/UNI

Asymmetric flasher
2 functions,
time range 0.1s - 100days, 1x16A changeover

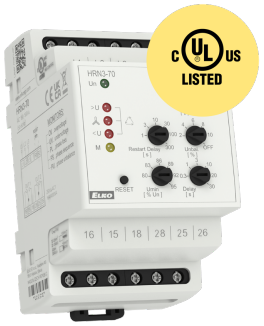
Monitoring Relays

HRN3-80

Voltage monitoring relay in 3P
Selectable range 208-480V,
adjustable time delay 0.3-30s,
2 outputs

PRI-51

Current monitoring relay
1-phase, range 0.1-1/2/5/8/16A AC,
adjustable delay



HRN3-70

Voltage monitoring relay in 3P
Selectable range 190-500V,
adjustable time delay 0.3-30s,
2 outputs

PRI-32

Current monitoring relay
1-phase, range 1-20A AC

Auxiliary Relays

VS116U
Power relay
1x16A changeover,
1-module

VS308U
Power relay
3x8A changeover
1-module

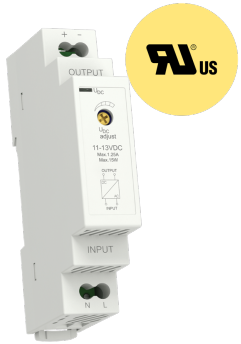
Installation Contactors

VS120
Installation contactor
1x20A NO/NC

VS363
Installation contactor
3x63A NO

Power Supplies

PS3M
Power supply
DC 12V/54W
DC 24V/60W



PS1M
Power supply
DC 12V/15W
DC 24V/15W

PS4M
Power supply
DC 12V/85W
DC 24V/92W

PS2M
Power supply
DC 12V/24W
DC 24V/30W

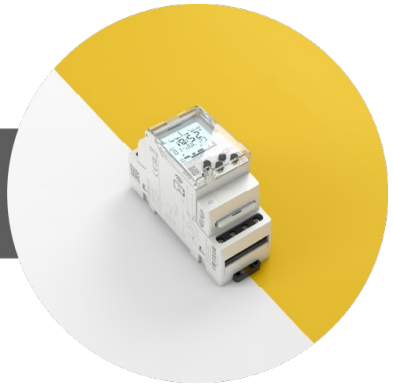
PS6M
Power supply
DC 12V/135W
DC 24V/150W

SHT-13

Multifunction digital time switch

SHT-13/1
SHT-13/2

Digital Time Switches



- All programs in one device (daily, weekly, yearly and astronomical)
- UNIversal supply voltage in the range of AC/DC 24 – 240 V (AC 50-60 Hz)
- Simple setting after the first start-up
- User-replaceable battery to back up the set time during power outages
- Built-in web server for setup and control via Wi-Fi connection
- Time synchronization through NTP server (require internet connection)
- Possibility of permanent connection to the local network
- New well-arranged display with white backlight
- ASTROnomic program: manual entry of coordinates or selecting from one of more than 500 preset cities
  - selection of days of the week
  - astro interrupt function (night break): controls the sunrise/sunset times and compares them with the set OFF/ON times
  - high position accuracy thanks to two decimal places in latitude/longitude
- One/two channel design (each with an operating hours counter)
- Pulse/cycle output mode
- Transition of summer/winter time – AUTO or OFF
- Sealable transparent front panel cover
- PIN code protection against unauthorized changes
- Wireless firmware update – current version 1.46

ELKO ep North America

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CRM-91H/UNI

Multifunction time relay
10 functions,
time range 0.1s – 10days,
1x16A changeover

Multifunction time relay for universal use in automation, control and regulation or in house installations.

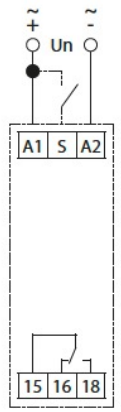
Comfortable and well-arranged function and time-range setting by rotary switches.

Multifunction red LED flashes or shines depending on the operating status.

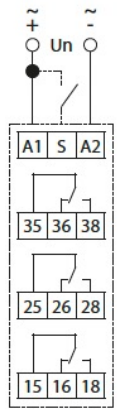
AC/DC 24-240V CONTROL VOLTAGE

Connection

CRM-91H



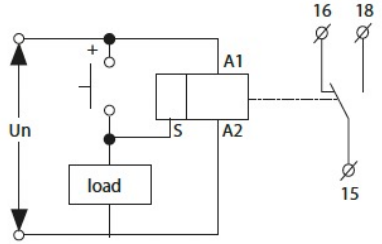
CRM-93H



CRM-93H:
The potential difference between the supply terminals (A1-A2), output contact 2 (25-26-28) and output contact 3 (35-36-38) must be a maximum of 250V AC rms/DC.

Possibility to connect load onto controlling input

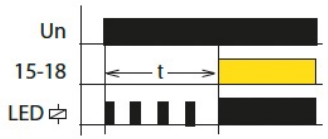
It is possible to connect the load (e.g.: contactor) between terminals S-A2, without any interruption of correct relay function.



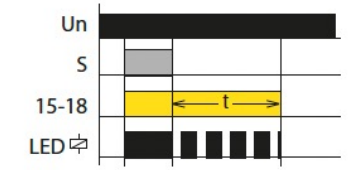
Indication of operating states

Examples of signaling

Function a



Function e



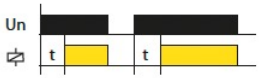
North America ELKO ep

c UL us LISTED E308660

CRM-91H/UNI

Multifunction time relay
10 functions,
time range 0.1s – 10days,
1x16A changeover

a



ON DELAY

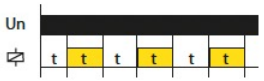
When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.

b

INTERVAL ON

When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelfstate. Trigger switch is not used in this function.

c



FLASHER - OFF first

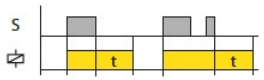
When input voltage U is applied, time delay t begins. When time delay t is complete, relay contacts R change state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.

d

FLASHER - ON first

When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.

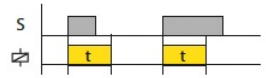
e



OFF DELAY

Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.

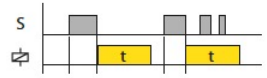
f



SINGLE SHOT

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.

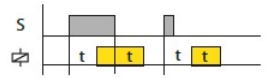
g



SINGLE SHOT falling edge

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the relay contacts R return to their normal condition unless the trigger switch S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger switch S at a rate faster than the preset time will cause the relay contacts R to remain closed. If input voltage U is removed, relay contacts R return to their shelf state.

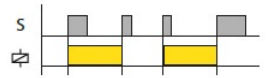
h



ON/OFF DELAY

Input voltage U must be applied continuously. When trigger switch S is closed, time delay t begins. When time delay t is complete, relay contacts R change state and remain transferred until trigger switch S is opened. If input voltage U is removed, relay contacts R return to their shelf state.

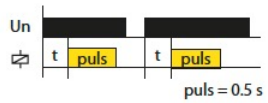
i



MEMORY LATCH

Input voltage U must be applied continuously. Output changes state with every trigger switch S closure. If input voltage U is removed, relay contacts R return to their shelf state.

j



PULSE GENERATOR

Upon application of input voltage U, a single output pulse of 0.5 seconds is delivered to relay after time delay t. Power must be removed and reapplied to repeat pulse. Trigger switch is not used in this function.

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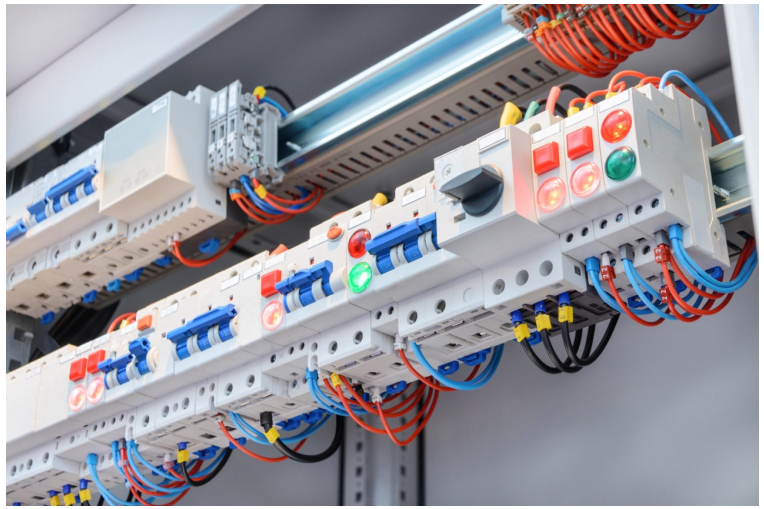
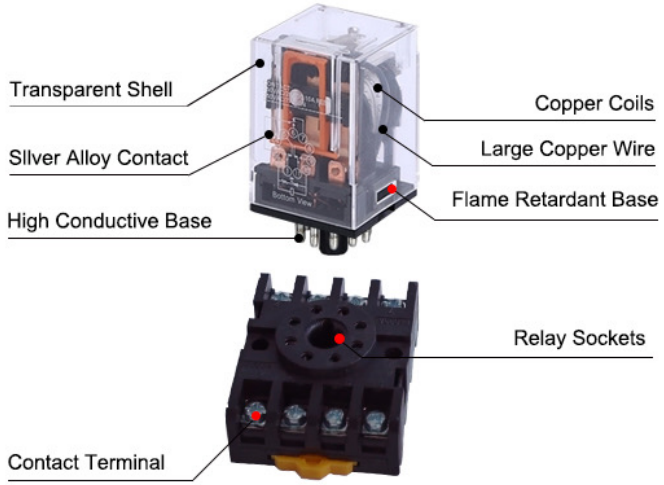
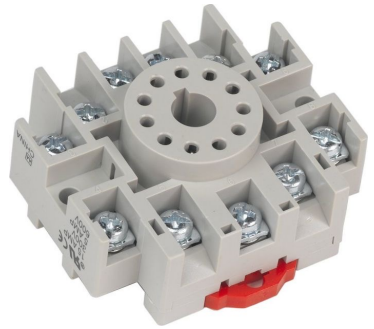
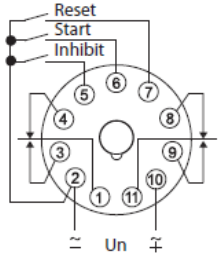
Time Relays

DIN mounted / 8 pin / 11. pin





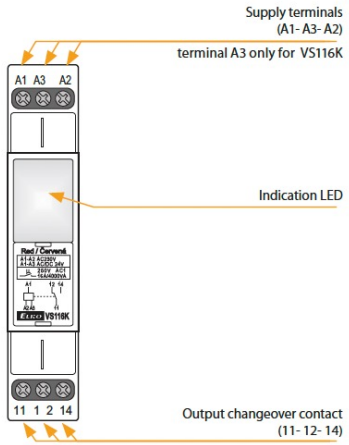




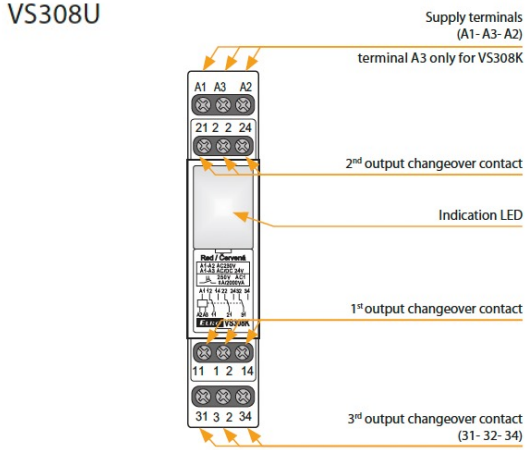
Auxiliary Relays

AC/DC 24-240V CONTROL VOLTAGE

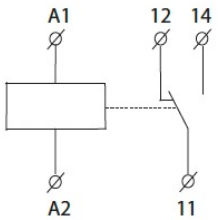
VS116U



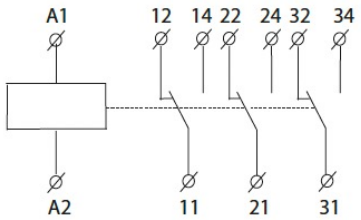
VS308U



VS116U



VS308U



VS116U

Power relay
1x16A changeover,
1-module

VS308U

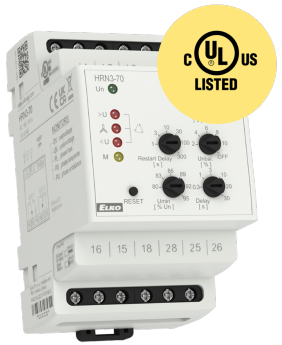
Power relay
3x8A changeover
1-module

Application examples

Monitoring Relays

HRN3-80

Voltage monitoring relay in 3P
Selectable range 208-480V,
adjustable time delay 0.3-30s,
2 outputs



HRN3-70

Voltage monitoring relay in 3P
Selectable range 190-500V,
adjustable time delay 0.3-30s,
2 outputs

Detects overvoltage, undervoltage, window, phase sequence

- Detects Voltage in UPS cabinet to switch from utility power to batteries
- Detects overvoltage in a control panel circuits to disconnect and protects other components
- Detects undervoltage to stop a process a prevent unexpected stop and failure
- Detects correct phase order to prevent motor running wrong direction
- Detects balanced 3 phases to prevent motor from overheating

Application examples

Monitoring Relays

PRI-51

Current monitoring relay
1-phase, range 0.1-1/2/5/8/16A AC, adjustable delay
Monitoring of current by built-in transformer, 7 ranges
Supply and output as PRI-32, difference from PRI-32: direct monitoring and finer ranges
higher sensitivity = better accuracy

PRI-32

Current monitoring relay
1-phase, range 1-20A AC
Monitoring by current transformer (wire through an opening, galv. separated, no heat loss), adjust. current 1-20 A
Multivoltage AC 24-240 and DC 24 V,
Output 8 A changeover
Current transformer is a part of the product

Heating bars in sliding rails, heating cables, indication of current flow controlling of 1-phase motor consumption

- Detects current flow – indicates operation of a heating cable
- Detect no current flow – indicates a failure of a heating cable
- Indicates operation of a single-phase motor in an automated process – logistic center, airport conveyor belt
- Monitors function of a light bulb (sport field, street lighting, mall, office building, elevators, public garage...

Time Relays

CRM-91H/UNI

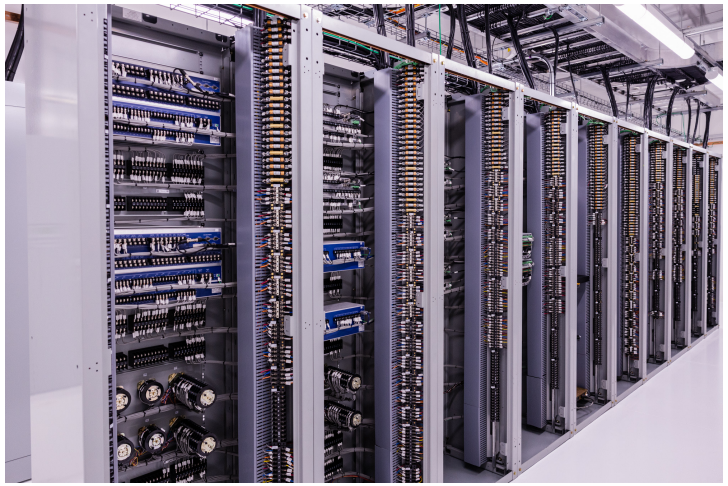
Multifunction time relay
10 functions,
time range 0.1s – 10days,
1x16A changeover

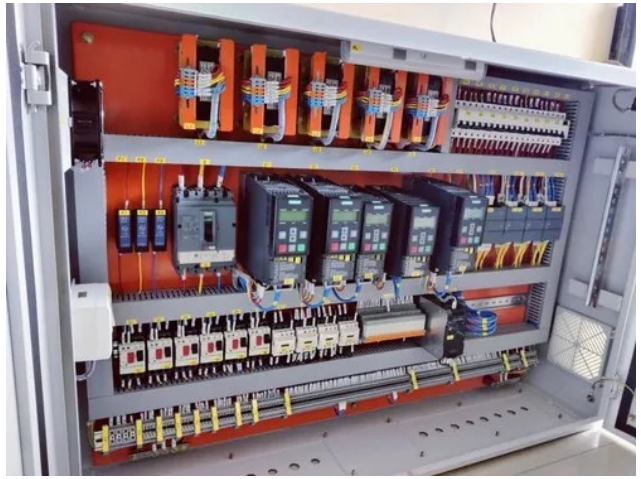
Application examples

- Flashing light control (time on, time off)
- Engine auto start control
- Furnace safety purge control
- Motor soft-start delay control
- Conveyor belt sequence delay

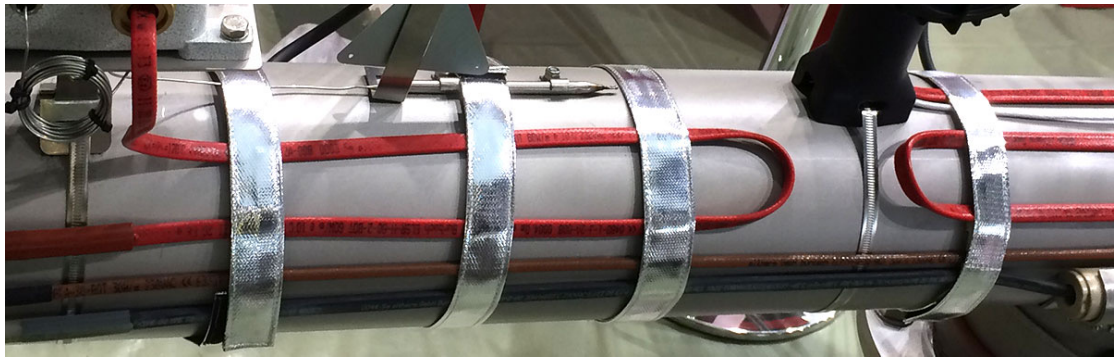
Application examples

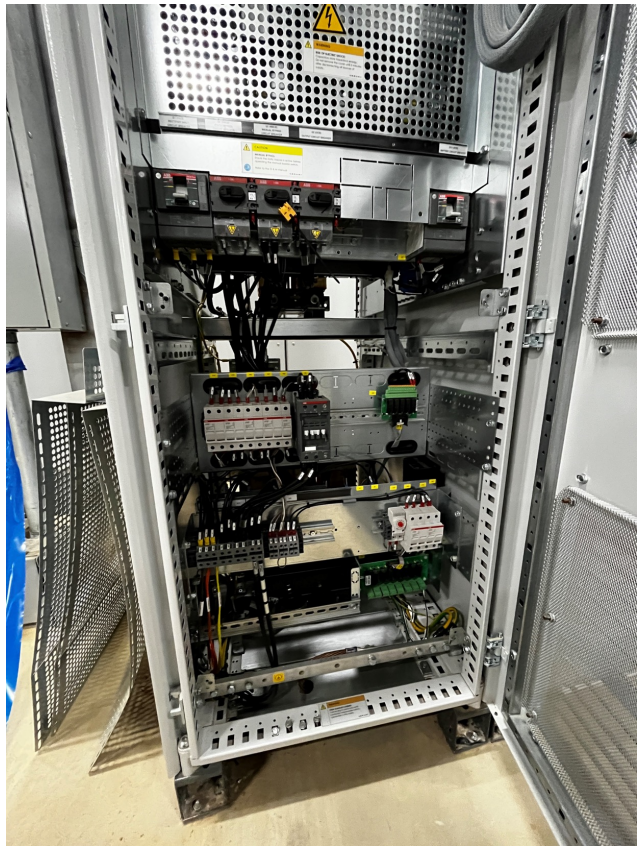
- **Electrical Panel production**
- Lighting
- Industrial Heating and Cooling Systems
- Wind and solar power generation
- Telecommunications Infrastructure
- Mining
- Heavy industry





Application examples

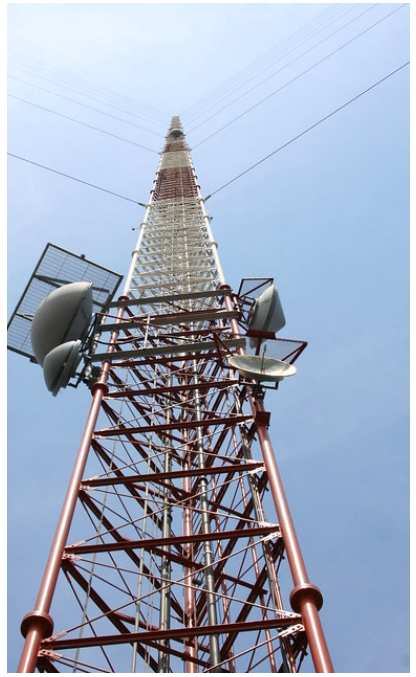


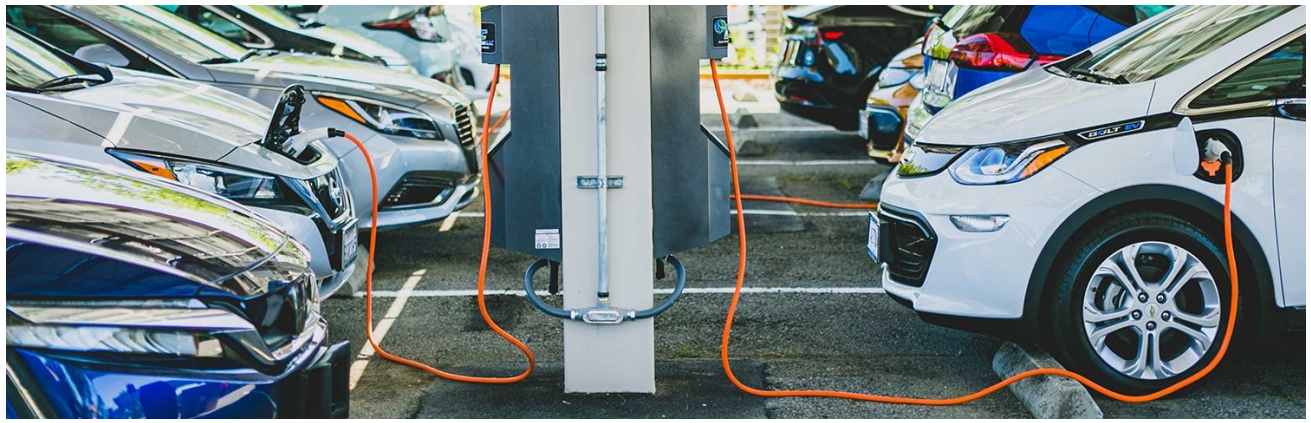


Application examples

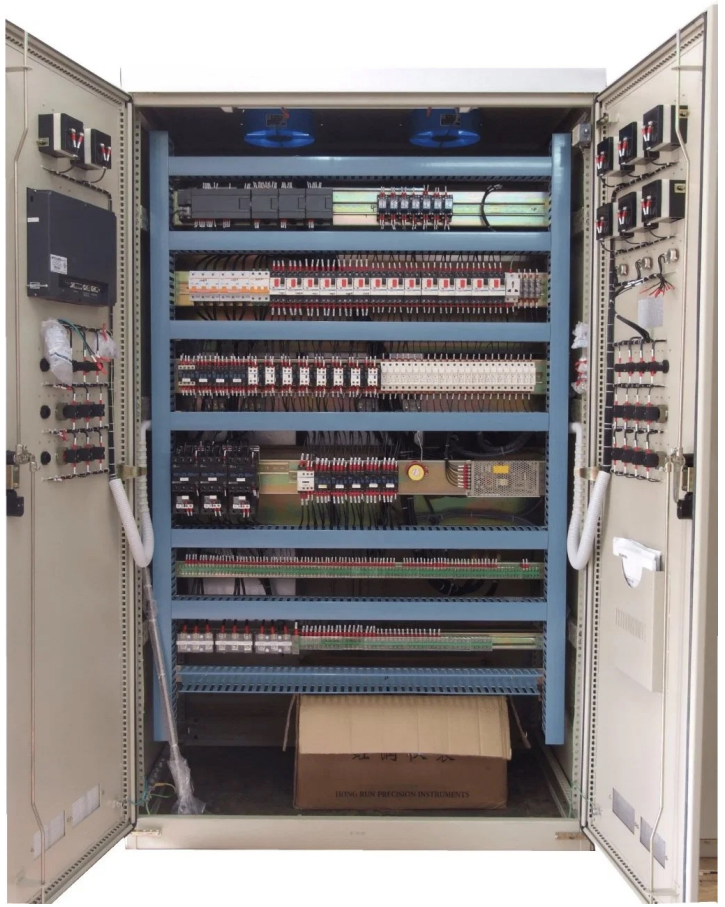
Application examples

- **Electrical Panel production**
- Water Treatment and Management Systems
- EV charging systems
- Manufacturing plants
- Logistic centers, warehouses
- Telecommunications Infrastructure



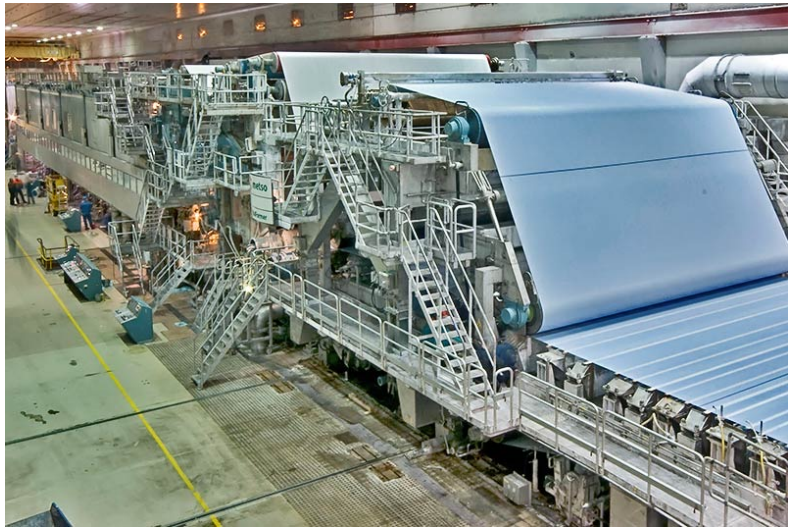


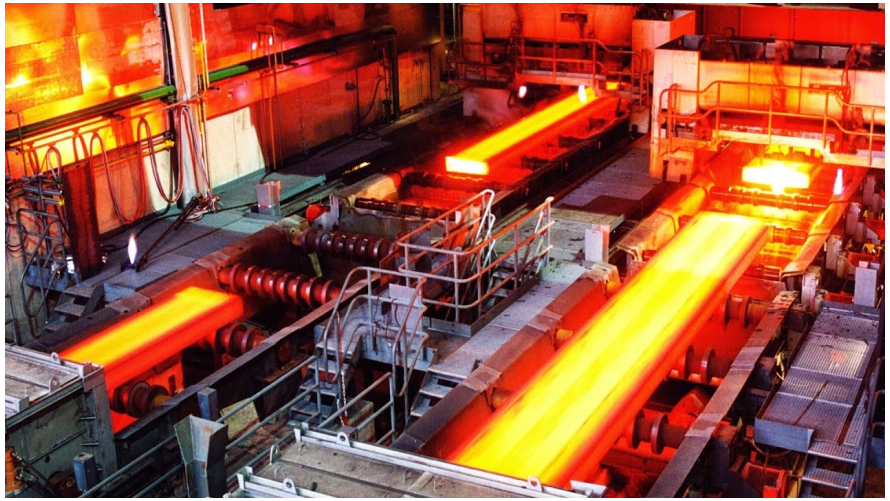
Application examples



Application examples

- **Electrical Panel production**
- Pulp and paper
- Metal mills
- Marine and offshore applications





Application examples

- E-HOUSE production shops
- Mining sites
- Oil and gas plants and stations, refineries
- LNG terminals, compressor stations

Refinery

Oil field pump station

Mine site E-house

North America ELKO ep

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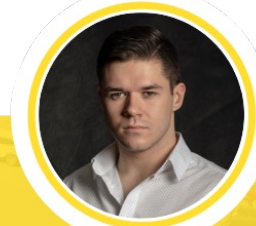

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