

# Automation and control solution



## What makes up a safety application?

Input

Logic

Output



# Soft Starters



- Rated Operational Current: 4A to 200A
- Motor rating: 1.5kW to 110kW
- Application: Pumps, Fans and small conveyer belts
- Features: Compact design, High torque, Long service intervals, reduced operating cost

- Rated Operational Current: 37A to 1000A
- Motor rating: 18.5kW to 560kW
- Frame Size: 5
- Application: 3Ph inductive loads, Transport and conveying system, Pumps, Solid state switching of Pumps in extreme environments of chemical plants and filling stations, Fan drives
- Features: Compact design, Noiseless, reduces wear on V belts in fan drives, Advance function for sophisticated applications



# Variable Frequency Drives

## PowerXL™ DE1/DE11 variable speed starters



- Performance Range:
  - > 0.25kW to 2.2kW at 230V
  - > 0.37kW to 7.5kW at 400V
- Features:
  - > Trip-Free-Design ensures maximum machine availability
  - > Out-Of-The-Box-commissioning without parametrization
  - > Suitable for use in ambient temperature upto 60°C
  - > Compact width of 45mm
  - > IP20
- Communication: CANopen available in DE11

## PowerXL™ DC1 variable frequency drives - Compact machinery drive



- Motor Ratings: 0.37kW to 22kW
- Operating voltage: 115V to 400V
- Application: Simple pumps, fans and conveyor belts
- Features:
  - > Fast commissioning with 14 basic parameters
  - > Ambient temperature upto 50°C without derating
  - > Integrated EMC filters, breaking transistor and PI controller
  - > IP20 and IP66
  - > Integrated communication: CANopen and Modbus RTU
  - > DC braking and voltage boost

## PowerXL™ DA1 variable frequency drive- Advanced machinery drive



- Motor Ratings: 0.75kW to 250kW
- Operating voltage: 235V, 400V and 525V
- Features:
  - > Simple programming
  - > Ambient temperature upto 50°C without derating
  - > Integrated EMC filters and breaking transistor
  - > Integrated communication: CANopen and Modbus RTU (Optional field bus connections)
  - > Safe Torque Off
  - > V/F control, vector SL and CL, PM motors, BLDC motors, SynRel motors

## PowerXL™ DG1 variable frequency drive- General purpose drive



- Motor Ratings: 0.75kW to 160kW (6 frame size)
- Operating voltage: 235V, 400V and 525V
- Dual rating: 110% (Variable torque) and 150% (constant torque) overload
- Features:
  - > Can be used from -30°C to 50°C without derating
  - > Integrated EMC filters, breaking chopper and DC link choke (5%)
  - > Safe Torque Off
  - > Integrated communication: Modbus RTU and TCP, Backnet MSTP and Ethernet IP (Optional field bus connections)
  - > IP21 and IP54
  - > Flexibility in configuration and selection of I/O modules

## High Performance Series



- Wide range: 1hp to 2000HP
- Robust design - proven 500,000 hours MTBF
- Increased micro-processing power (4 times more CPU capability)
- High resolution analog inputs
- Speed and torque loop capability

# M22- Pilot Devices

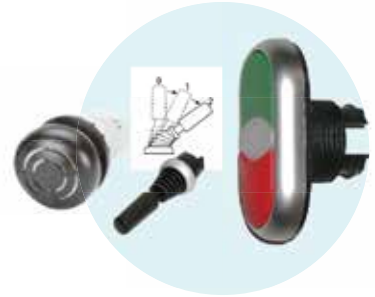
## Standard Offering



- Pushbuttons
- Selector switches
- Mushroom head pushbuttons
- Emergency stops
- Pilot lights
- Control stations

## Extended Offering

- Double pushbuttons (NEMA 4X / 13)
- Joysticks (2-step operation)
- Communicating devices – ASi
- Buzzers



## Unique (New) Offering



- Four- way pushbuttons
- Palm switches
- Bulkhead interfaces – USB, RJ45

## Key Features

- Field convertible selector switches and pushbuttons
- Custom laser engraving available for many products
- Stackable contact blocks
- Spring cage terminal blocks
- Exclusive LED offering



# CAM & Selector Switches



- Rotary switch T:
  - > Current range: 10A to 315A
  - > Rating: 6.5kW to 132kW with AC23@400V/415V
  - > Features: Flexible, Compact and Modular design
- Switch-Disconnecter P:
  - > Range: P1 up to 32A, P3 up to 100A, P5 up to 315 A
  - > Features: Contacts are positively opened on de-energization
  - > Used as switch disconnecter with or without emergency stop, ON/OFF switches as maintenance, manual override or safety switches

# Limit Switches



## Features

- Modular, Plug-in style system ( head and body)
- Positive Opening Contacts
- Plastic and Metal versions
- Electronic Safety Position provides analog output
- Screw and Cage Clamp® connections
- Operating heads can be rotated 90° to suit specific direction of operation

## Standards and Certifications

- Safety Function by positive opening contacts per IEC/EN 60947-5-1 up to category 4 per EN 954-1
- TUV-Rheinland Certified for Functional Safety (LSE Models)
- CSA® Certified
- UL Listed
- CE

# Interlock Switches



## Features

- Industry-standard enclosure sizes
- Miniature DIN models have a five-way adjustable head
- Full-size DIN models have four-way adjustable head
- Door-Flap and door-hinge safety switches available
- Fully safety rated interlocking devices per EN 1088

## Standards and Certifications

- Positive Opening NC Contacts per EN 60947-5-1
- CSA® certified
- UL® Listed
- CCC
- SUVA CAN
- BG-Prutzert
- Totally Insulated

# Safety Relays

## ESR5:



- Multi-voltage version 24V-230V AC/DC for flexible application range
- The optimal solution for each function: One device per function
- Proven safety technology and Rapid diagnosis
- Immediate (stop category 0) or delayed (stop category 1) stopping
- Positively actuated contacts (EN 50205)
- Redundant and Slim design: Compact body just 22.5mm wide
- Accurate indication of supply voltage, inputs and enable paths
- Coded removable terminal blocks, error-free and ease of use

## ES4P:

- All in one: safety and control relay
- TUV approved safety function block
- With and without display: also additional standalone connected via RS232
- Local and remotely expandable via integrated easyNet interface
- 14 inputs, 4 safety transistor and 1 relay output or 4 safety relay output
- 4 test signals



# Control Relays



## Easy500: For small scale applications with up to 12 I/O

- 1 circuit per relay: direct circuit diagram entry possible
- Functions as multi-function timing relays, impulse relays, counters, analog value comparators, week and year time switch, value entry and display
- Connection possible with Ethernet

## Easy700: For medium scale applications with up to 40 I/O

- All functions as easy500
- Local and remote expansion for flexibility
- Connection possible with Profibus, CANopen, DeviceNet and Ethernet



## Easy800: For large open and close loop tasks with up to 328 I/O

- All functions as easy700
- Digital and analog expandability
- Additional functions like PID controller, Pulse width Modulation, high speed counters etc...
- Integrated communication via easyNet
- Communication: Profibus, CANopen, DeviceNet and Ethernet

# HMI and PLC



## HMI with touch display:

- Display size: 3.5" to 15"
- Front: Standard and Stainless steel version available
- Display type: TFT mono and TFT colour, LCD colour
- Processor: 32 bit RISC, 200MHz & 400MHz
- Memory: 32MB, 64MB

## XN300 Remote I/O:

- Digital input: 4 to 20
- Digital output: 8 to 16
- Analog input and output modules



## XC152 Compact PLC and XC100 and XC200 Modular PLC

- OS: windows CE5
- Processor: RISC CPU, 32 bit, 400MHz
- Ethernet interface and connectable to all protocols
- Memory: 64MB
- SD card

# Smartwire DT



- Simplified wiring (Reduced wiring efforts)
- Reduced space
- Easy assembly
- Zero errors

# Eaton brand heritage



.....and Many More



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# About **EAT•N**

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