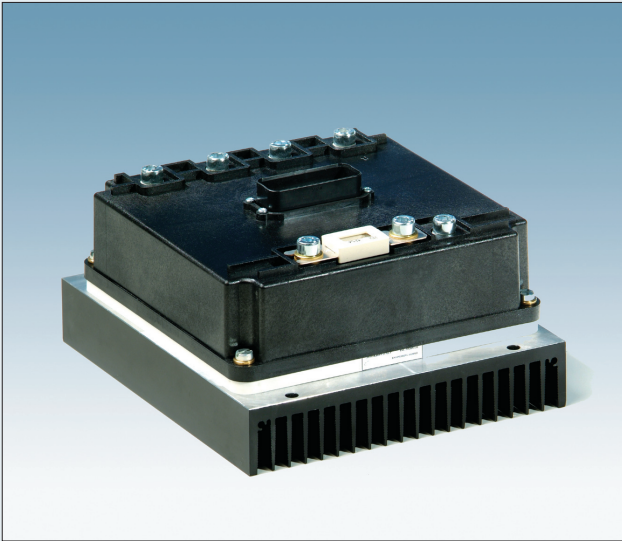


A C C O N T R O L L E R S
T Y P E A E S



Iskra Avtoelektrika d.d.



GENERAL

The unit is a combination of a three phase controller for AC induction motors, for the traction and DC controller for DC pump motors.

According to various clients' technical requirements three different controllers were developed.

CONTROLLER FEATURES

- State of the art design for control PC board and MOSFET power stage
- Control is performed using proprietary Flux Vector control algorithm running on dedicated motion control DSP microcontroller
- Space Vector Modulation is used for increased efficiency
- Smooth acceleration from zero to full speed
- 4 quadrant mode operation
- Adjustable field weakening (top speed) is possible
- Hold in stop position when zero speed is requested
- Max starting and braking torque (also in stand still) is possible according to phase current limits
- Truck speed dynamics can be set by reprogramming controller parameters
- Speed loop regulation gives the opportunity for small speed differences between loaded and unloaded truck (difference in weight can be 1:3)
- Very smooth operation is performed at low motor speeds (up to 30% of the nominal motor speed)
- Direction inversion is performed softly to avoid load sliding off the forks
- CANOpen protocol built-in
- RS232 communication is used for reprogramming controller parameters by PC or hand held console
- Controllers are designed to meet UL requirements
- Controllers are designed to meet EMC requirements

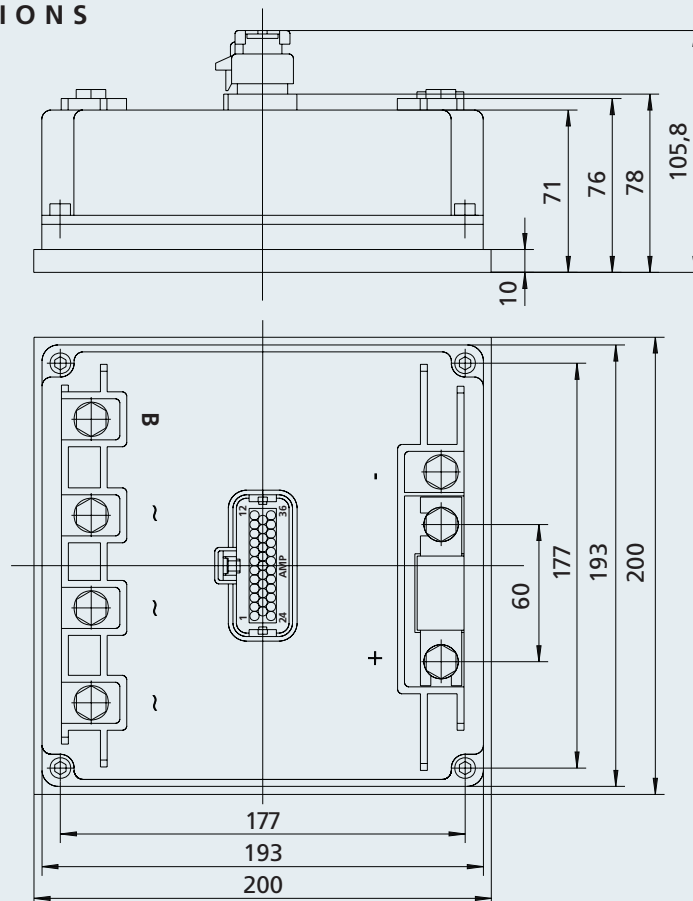
SOME OF POSSIBLE CONTROLLER FEATURES REGARDING CLIENTS' REQUIREMENTS

- May have selectable sets of drive modes (rabbit, standard, turtle...)
- Programmable maximum current limit for traction motor
- Programmable maximum current limit for hydraulic motor
- Current limit and timeout for hydraulics at the predetermined maximum current
- Proportional lowering valve controlled by a variable current driver
- Diagnostics via handheld programming console, built-in status indicator or PC
- Internal reverse polarity protection (fuse or main contactor must be used)
- Continuous diagnostics during operation, microprocessor power-on self test
- Output drivers short circuit protected and built-in coil spike protection provided
- Positive battery connection for all inputs
- Fully protected outputs
- Internal and external software watchdog circuits
- IP rating IP54

MAIN TECHNICAL DATA

TYPE	AES H24V300/180A T/H 5/1	AES H24V350/300A T/H 5/1	AES H24V450/300A T/H 5/1	AES H48V 300/350A T/H 5/1
GENERAL DATA				
Supply Voltage, Rated	24V	24V	24V	48V
Ambient Temperature Operating Range	-20°C < Tamb < 45°C	-20°C < Tamb < 45°C	-20°C < Tamb < 45°C	-20°C < Tamb < 45°C
Controller Temperature Operating Range	-20°C < Tc < 95°C	-20°C < Tc < 95°C	-20°C < Tc < 95°C	-20°C < Tc < 75°C
TRACTION PART				
Max. Phase Current (RMS)	5sec 330A	5sec 380A	5sec 480A	5sec 320A
Max. Phase Current (RMS)	2min 300A	2min 350A	2min 450A	2min 300 A
Operating Mode S2	60min 150A	60min 175A	60min 175A	60min 150 A
Operating Frequency	10 kHz	10 kHz	10 kHz	10 kHz
HYDRAULIC PART				
Max. Current (DC)	5sec 200A	5sec 330A	5sec 330A	5sec 370A
Max. Current (DC)	2min 180A	2min 300A	2min 300A	2min 350A
Operating Mode S2	60min 100A	60min 150A	60min 150A	60min 175A
Operating Frequency	10 kHz	10 kHz	10 kHz	10 kHz

OUTLINE DIMENSIONS



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