



### Application

Electropneumatic brake control system EPZSH-a is used in winding machines equipped with pneumatic weight-loaded, non-totalizing drives of a brake with lever based force transfer system. EPZSH-a enables two-variant safety braking. Selection of safety braking direction is automatic and depends on value and direction of overweight motion.

EPZSH-a is produced in three sizes that depend on the size of braking system driver installed in a machine:

- EPZSH-1 a – for systems which total displacement of manoeuvring cylinders does not exceed 1.5 dm<sup>3</sup> (e.g.. HOP-I)
- EPZSH-3a – for systems which total displacement of manoeuvring cylinders does not exceed 10 dm<sup>3</sup> (e.g.. 2xHOP-III)
- EPZSH-a – for systems which total displacement of manoeuvring cylinders does not exceed 20 dm<sup>3</sup> (e.g.. 2xHOP-V)

### System design

Electropneumatic brake control system EPZSH-a is made of the following basic elements:

- pneumatic equipment cabinet +L1,
- electrical equipment cabinet +L2 (supply, control and protection elements),
- control elements system that control operation of the brake drive actuators.

Pneumatic part of the electropneumatic control system of EPZSH-a brake is installed in cabinet +L1, where pneumatic control elements are installed. The bottom part of the cabinet houses blow-out collector, then pneumatic elements of air preparation (filters, lubricators, reducers), executive pneumatic control valves (electropneumatic distributors, safety valves, pressure proportional regulator, pneumatic pressure regulators, logic valves) and control and measuring elements (pressure transducers, measurement connectors, pressure connectors). Front and back doors of the cabinet are glazed to facilitate observation of the system operation. Heating system installed in the cabinet controlled by thermostat provides maintenance of optimum temperature. The cabinet is also equipped with lighting system. The electrical equipment cabinet +L2 houses logic controller and power supplies. Electrical equipment of the electropneumatic brake control system includes connectors that control braking status and admissible stroke of cylinder pistons as well as location of weights of the brake drives.

### Main features of the system

The system allows:

- manoeuvring braking – in manual, automatic control, in remote start-up mode and after emergency stop using a drive,
- safety braking – using one of two different braking moment values, selected depending on the value and direction of overweight,
- advancing approximation of brake drives callipers,
- performing functional test of the device,
- performing a test of settings of lead and residual pressure,

- performing static brake test,
- performing any trials and tests from the level of device visualization.

### Conditions of work and application parameters

Electropneumatic brake control system EPZSH-a meets the requirements of the Decision of the Minister of Economy 1) of 20 December 2005 on essential requirements put before safety machines and elements, 2) introducing Directive 98/37/EC (Journal of Laws 05.259.2170).

supply voltage	230 V AC 50 Hz with UPS
ambient temperature	5 ÷ 40°C
working medium	air
maximum total displacement of manoeuvring cylinders	depending on version up to 20 dm <sup>3</sup>

### Charakterystyka techniczna

maximum working pressure	0.8 MPa
air filtering accuracy	manoeuvring cylinder – 40 mm; safety cylinder – 5 mm; control air – 0.3 mm
heating power	2 x 0.3 kW 230VAC
recommended viscosity of oil in lubricators	ISO VG 32
total weight (EPZSH-a)	approx. 540 kg (+L1); approx. 300 kg (+L2)
dimensions EPZSH-a (+L1)	width: ≈ 2000 mm; depth: ≈ 800 mm; height: ≈ 2000 mm
dimensions EPZSH-a (+L2)	width: ≈ 1200 mm; depth: ≈ 600 mm; height: ≈ 2000 mm