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INDEX CARD

Electric fire-proof battery locomotive type ELA-44 / 1,2,3

Electric fire-proof locomotive type **ELA-44 / *** is designed for transporting materials, machines and devices and for transporting people in underground mines in workings classified as "a", "b" or "c" methane explosion hazard and class "A" or "B" of the coal dust explosion hazard.

The locomotive type **ELA-44 / *** can operate in the ambient temperature not exceeding 40°C and relative humidity up to 100%.

The ELA-44 / * type locomotive consists of the following components:

- main body of the locomotive,
- two service cabins with bumpers,
- two wheel sets with a gear and engine,
- flameproof intrinsically safe desk box OISP --- installed in each cabin,
- fireproof box of SFIS inverters and controllers,
- explosion-proof battery of reinforced construction, type SBS-4W or SBS-4WŻ.



The design of the ELA-44 / * battery-powered electric locomotive depends on the track gauge:

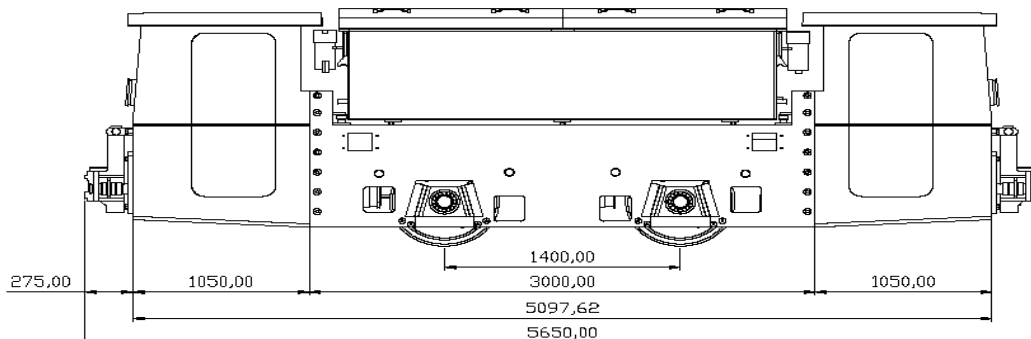
ELA-44 / 1,2,3 locomotive series and type designation:

Type	Track gauge a [mm]	Locomotive width b [mm]
ELA-44/1	550-600 mm	1050 mm
ELA-44/2	620-750 mm	1100 mm
ELA-44/3	780-900 mm	1250 mm

Technical parameters:

Dimensions [length x height x width]	5650 x 1650 x 1050 - 1250 mm
Wheelbase	1400 mm
Hourly power	2x22 kW = max 44 kW
Continuous power	20 kW
Hourly speed	3 m/s (10,8 km/h) 5 m/s (18 km/h) –maximum possible speed
Continuous speed	2,8 m/s (10,2 km/h)
Continuous tractive effort	14 kN
Hourly tractive effort	20 kN
Mass	13700-14 000 kg (5500 kg battery SBS-4W (or SBS-4WŻ)+ locomotive depending on the execution)
Gear	1:12
The diameter of the wheels D	560 mm
The smallest radius of curvature of the track	15 m
Battery voltage and capacity	144 V, SBS-4W --- 840 Ah; (SBS-4WŻ --- 760Ah)

Electric fire-proof battery locomotive type ELA-44 / 1,2,3



Description of the mechanical structure of the locomotive:

The ELA-44 / 1,2,3 battery-powered electric locomotive consists of three parts connected with each other by means of bolts. These are the main body and two service cabins. This solution facilitates the transport of the locomotive to the underground of the mines. The booths have OISP control panels, URO-1 flameproof reflectors, flameproof horns and other equipment. The main body consists of the chassis and drive (two wheel sets with gear and engine), hydraulic (brake) system, SFIS gearbox. A rechargeable battery of the SBS-4W or SBS-4WZ type is mounted on the main body.



Description of the locomotive's electrical system:

The electric system of the locomotive consists of the following components:

- flameproof intrinsically safe console box OISP (2 pcs),
- Joystick housing with Joystick (2 pcs.),
- universal flameproof reflector type URO-1 (4 pcs.),
- point reflector type RP-100 (2 pcs.),
- electric buzzer type KBB-052 (2 pcs.),
- flameproof box of SFIS inverters and controllers (1 pc.),
- explosion-proof battery of reinforced construction type SBS-4W or SBS-4WZ (1 pc. + 1 reserve),
- three-phase electric motors of the drive, type dSKg 180 L4-EP-f (2 pcs.),
- dSLg 90 L4-f hydraulic pump motor (1 pc.)
- operator identification system as well as locomotive speed and time recording system.

Description of the braking system of the locomotive

The entire braking system of the locomotive will consist of three completely independent braking systems. These are:

- hydraulic brake - emergency,
- electric brake - electric braking by motors with energy return to the battery,
- mechanical brake - parking.

Certificate:

The ELA-44/1 or 2 or 3 locomotive has a certificate of compliance No. : **OBAC14CZ / ATEX0611X of 09/12/2014** with Annex 4 to the certificate of 19/12/2017, which are issued by **the Center for Testing, Attestation and Certification OBAC Sp. z o. o.** in Gliwice. The locomotive also has the OBAC / 0611 / MD / 14 certificate of 09.12.2014 for compliance with the requirements of Directive 2006/42 / EC (Machinery Directive) and the PN-EN 1889-2 + A1: 2010 standard for the mechanical part. The Electric Battery Locomotive of the ELA-44/1 or 2 or 3 type is marked with:

