

## ELECTRICAL BRANCH REQUIREMENTS

### 1. Availability of electric power:

- Drive units and heating technological equipment – 690V AC
- Basic lighting – 400/230V AC,
- Emergency lighting – 220V DC,
- Control voltage for power carrying circuits – 220V DC,
- Plug-in sockets 1 and 3 phases – 400/230V AC,
- Heating circuits for heating pipelines and anti-condensation heaters (instrumentation and control equipment, electric motors) – 400/230V AC,
- Control and measurement instruments (AKPiA) – 24V DC
- Fans, fans of foreign cooling systems, air- conditioning and others – 400/230V AC.

### 2. Requirements for electric drives:

- Execution – ordinary for operation outside an Ex zone or Ex in the explosive zone
- Power – 3x690V,
- Frequency – 50 Hz,
- Engine protection degree – IP54 or higher,
- Insulation class – F,
- Work – S1,
- Efficiency – IE3,
- Relative humidity – 95%,
- Climate performance – U,
- Hull: cast iron,
- Bearing cover: cast iron,
- Legs: cast iron,
- Junction box: cast iron,
- Box rotation possibility: 4x90° or 2x180°,
- Selection of the painting system according to PN-EN ISO 12944-1 – M or H,
- Environment: C5-I.

**Note:**

- ✓ ***Engines should come equipped with thermistors to avoid overheating,***
- ✓ ***For motors to be operated with an inverter, a system of external cooling and motor design for frequency converter operation.***

### 3. Requirements for the lighting installation:

- Execution – ordinary for operation outside an Ex zone or Ex in the explosive zone,
- Luminaries used are to be completely equipped and wired,
- Supply voltage: 230 V AC,
- Supply voltage for emergency lighting 220V DC,
- Protecting rating: I or II,
- Connection: terminal block with clamps  $\geq 2.5 \text{ mm}^2$ ,
- Enclosure material: polyester resin enhanced with glass fibre  
Lampshade material: polymethylmethacrylate (PMMA) or tempered glass,
- Protection rating:  $\geq \text{IP65}$ ,
- Cable inlets matched to power cables used,

- Lighting source: LED modules (exchangeable)
- Colour temperature: 4,000K
- Luminous efficacy of the luminaire: 120 lm/W,
- CRI – colour rendering index :  $\geq 80$
- Ambient temperature: from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Longevity of the luminaire:  $> 70,000\text{h}$  L80B10
- Mounting plate: galvanised steel sheet with powder paint
- Clams: stainless steel
- Mounting bracket to be attached to the steel structure
- A boom made of galvanised steel tube  $\phi 50$ , protected with paint used for galvanised surface,  $h=2.5\text{ m}$ , attached to the railing of the platform, ambient atmosphere – C5-I

#### 4. Requirements for local control cassettes:

- Execution – ordinary for operation outside an Ex zone or Ex in the explosive zone,
- Local control cassettes are made of polyester and reinforced with glass fibre; they are fully equipped
- Cassette equipment: signal LED lights (green – downtime, red – work), bi-stable switch (green – start) locked push button (red – stop), in reasonable cases instead of optic signals ammeter

#### 5. Requirements for power and control cables, grounding installation and lightning rod, and other in compliance with:

- General requirements for the construction of new and the modernisation of existing production installations in the electric discipline – technical attachments to contracts