| جمعية رجال الأعمال المصريين الأفارقة |
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| التاريخ: 2 / 12 / 2025 |
| صادر: EABA / A / GP 1134 |

مشهرة برقم 11455\2021

# السادة أعضاء جمعية رجال الأعمال المصريين الأفارقة المحترمين

استكمالًا للجهود المستمرة والعلاقات المتميزة التي تربط جمعية رجال الأعمال المصريين الأفارقة بشركائها الاستراتيجيين، وحرصًا على تعزيز التعاون مع الجهات الخارجية ، فقد ورد الينا دعوة من سفارة بيلاروسيا في مصر للتعرّف على شركة Polesieelectromash، إحدى الشركات الرائدة في تصنيع المحركات الكهربائية في جمهورية بيلاروس ،علمًا بأن الشركة تُعد من أبرز الشركات المتخصصة في إنتاج المحركات الكهربائية غير المتزامنة ثلاثية الطور وأحادية الطور من سلسلةAIR ، بالإضافة إلى المضخات الغاطسة الطاردة المركزية لمعالجة المياه الملوّثة، وقطع الغيار، ومنتجات الحديد الزهر بمختلف أنواعها ،وتسعى الشركة إلى فتح آفاق تعاون جديدة مع شركاء في شمال أفريقيا والشرق الأوسط، في دعم فرص التجارة والاستثمار بين مصر والدول الصديقة.

مرفق المنشور

وتفضلوا بقبول فائق الاحترام،

الأمين العام لجمعية
رجال الأعمال المصريين الأفارقة

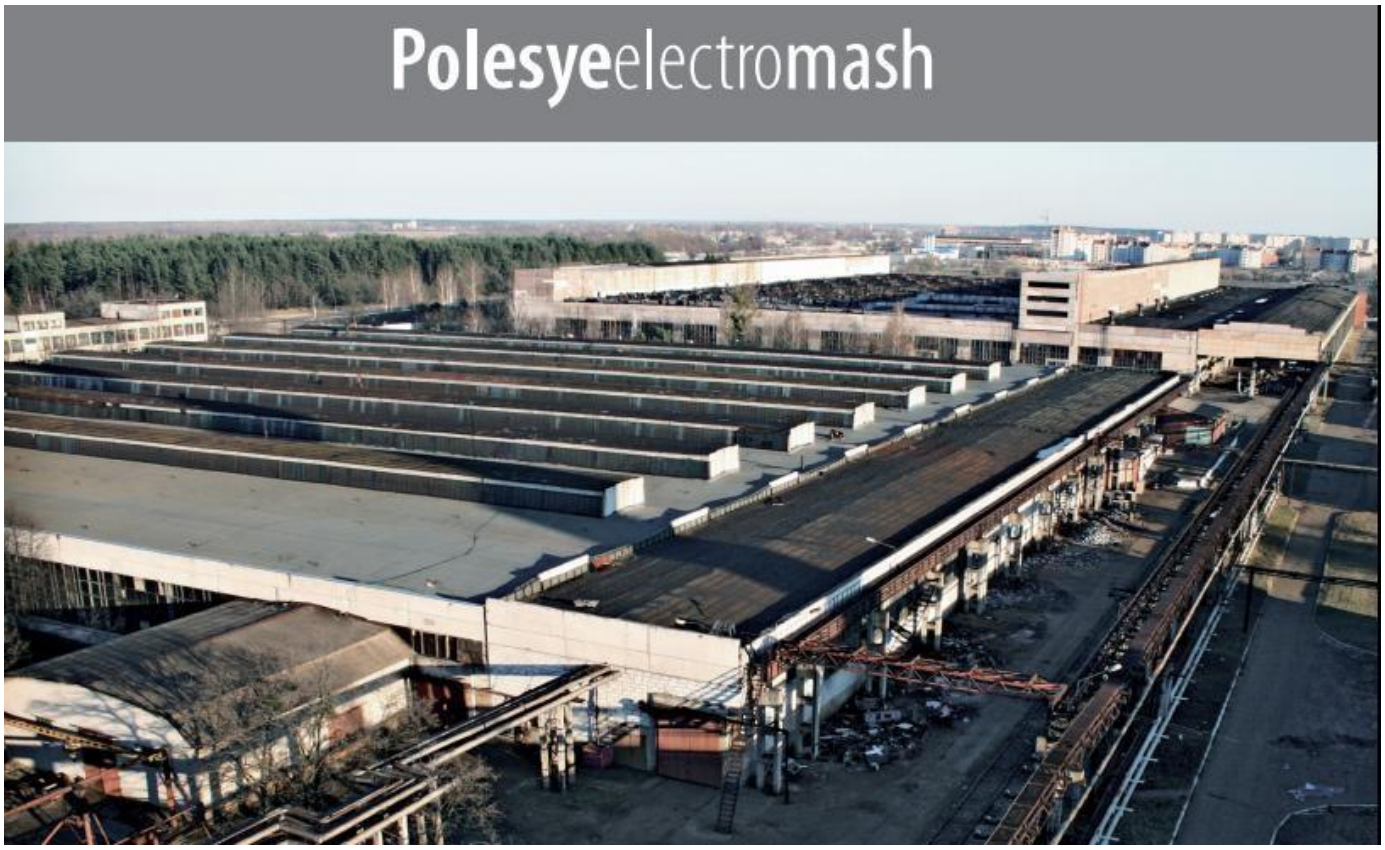
مصطفي الامير

م/ مصطفي الامير

رئيس مجلس إدارة جمعية
رجال الأعمال المصريين الأفارقة

د/ يسري الشرقاوي

جمعية رجال الأعمال المصريين الافارقة
مشهرة برقم ٦٧٧٩ لسنة ٢٠٢٠
Egyptian African Businessmen's Association
6779/2020




**Dear colleagues and prospective partners!**

Open joint-stock company “Polesyeelectromash” invites your cooperation!

Our enterprise was founded in 1975 and it is one of the leading producers of electric motors in Belarus Republic. A long period of development allowed us to create a large industrial enterprise, to concentrate intellectual potential, to prepare qualified personnel, to lay the foundation of technically advanced production process. In 2012 “Polesyeelectromash” became a member of “Belarusian metallurgical holding company”.

The enterprise manufactures: three-phase asynchronous motors, single-phase asynchronous motors, special purpose motors, AIRCH-series (new!) motors for electric rail turnout point machines, household purpose cast iron electric hot plates, household centrifugal pumps, centrifugal submersible wastewater pumps, cast iron stoves and , non-ferrous castings.

2AIR80-100-series IE2-efficiency class asynchronous motors were designed. On the average the coefficient of efficiency of these motors is 5% higher than of those that are now serially produced. The introduction of energy efficient motors will provide: a reduction of energy consumption due to higher coefficient of efficiency, a reduction of energy consumption by reducing installed capacity required to operate the equipment with energy-efficient electric drive. (new!)

AIVR-series explosion-proof induction motors with an axis of rotation 80-90mm were designed and put into serial production. For the first time in Belarus explosion-proof motor is made in a cast iron housing which considerable increases its safety and reliability. The motors are designed to operate as electric drive for external and internal installations of dangerously explosive types of production of chemical, gas, oil refinery and others allied industries (new!).

Our technically advanced enterprise “Polesyeelectromash” enables us to manufacture products with modern technical features and high functionality. We guarantee quality, reliability, safety.

Polesyeelectromash

| ELECTRIK MOTORS<br>**Asynchronous АИР series** | | |
|---|---|---|
| | kw | rpm |
| АИР71 А2 | 0,75 | 3000 |
| АИР 71 В2 | 1,1 | 3000 |
| АИР 71 А4 | 0,55 | 1500 |
| АИР 71 В4 | 0,75 | 1500 |
| АИР 71 А6 | 0,37 | 1000 |
| АИР 71 В6 | 0,55 | 1000 |
| АИР 80 А2 | 1,5 | 3000 |
| АИР 80 В2 | 2,2 | 3000 |
| АИР 80 А4 | 1,1 | 1500 |
| АИР 80 В4 | 1,5 | 1500 |
| АИР 80 А6 | 0,75 | 1000 |
| АИР 80 В6 | 1,1 | 1000 |
| АИР 90 L2 | 3,0 | 3000 |
| АИР 90 LB2 | 4,0 | 3000 |
| АИР 90 L4 | 2,2 | 1500 |
| АИР 90 LB4 | 3,0 | 1500 |
| АИР 90 L6 | 1,5 | 1000 |
| АИР 90 LA8 | 0,75 | 750 |
| АИР 90 LB8 | 1,1 | 750 |
| АИР 100 S2 | 4,0 | 3000 |
| АИР 100 S4 | 3,0 | 1500 |
| АИР 100 L4 | 4,0 | 1500 |
| АИР 100 L6 | 2,2 | 1000 |
| АИР 100L2 | 5,5 | 3000 |
| АИР 112М2 | 7,5 | 3000 |
| АИР 112М4 | 5,5 | 1500 |
| АИР 112МА6 | 3,0 | 1000 |
| АИР 112МВ6 | 4 ,0 | 1000 |
| АИР 112МА8 | 2,2 | 750 |
| АИР 112МВ8 | 3 ,0 | 750 |
| **Multispeed electric motors** | | |
| АИР 80 А4/2 | 1,12 | 1500 |
| | 1,5 | 3000 |
| АИР 90 L4/2 | 2,2 | 1500 |
| | 2,65 | 3000 |
| АИР 90 L6/4 | 1,32 | 1000 |
| | 1,6 | 1500 |
| АИР 90 L8/4 | 0,8 | 750 |
| | 1,32 | 1500 |
| АИР 100 S8/4 | 1,0 | 750 |
| | 1,7 | 1500 |
| **For unit construction pump drive** | | |
| АИР 80 А2Ж | 1,5 | 3000 |
| АИР 80 В2Ж | 2,2 | 3000 |
| АИР 80 В4Ж | 1,5 | 1500 |
| АИР 90 L2Ж | 3,0 | 3000 |
| АИР 90 L4Ж | 2,2 | 1500 |

| **For reduction gears** | | |
|---|---|---|
| АИР90 L2 P3 | 3,0 | 3000 |
| АИР90 L4 P3 | 2,2 | 1500 |
| АИР90 L6 P3 | 1,5 | 1000 |
| АИР90 LA8 P3 | 0,75 | 750 |
| АИР90 LB8 P3 | 1,1 | 750 |
| **Motors with the greater slip** | | |
| АИРС 80 А2 | 1,9 | 3000 |
| АИРС 80 В2 | 2,5 | 3000 |
| АИРС 80 А4 | 1,32 | 1500 |
| АИРС 80 В4 | 1,7 | 1500 |
| АИРС 80 А6 | 0,75 | 1000 |
| АИРС 80 В6 | 1,25 | 1000 |
| АИРС 90 L2 | 3,5 | 3000 |
| АИРС 90 LB2 | 4,8 | 3000 |
| АИРС 90 L4 | 2,4 | 1500 |
| АИРС 90 LB4 | 3,2 | 1500 |
| АИРС 90 L6 | 1,7 | 1000 |
| АИРС 90 LA8 | 0,9 | 750 |
| АИРС 90 LB8 | 1,2 | 750 |
| АИРС 100 S2 | 4,8 | 3000 |
| АИРС 100 S4 | 3,2 | 1500 |
| **AIR-series single-phase motors** | | |
| АИРЕ 71 А2 | 0,55 | 3000 |
| АИРЕ 71 В2 | 0,75 | 3000 |
| АИРЕ 71 С2 | 1,1 | 3000 |
| АИРЕ 71 А4 | 0,37 | 1500 |
| АИРЕ 71 В4 | 0,55 | 1500 |
| АИРЕ 71 С4 | 0,75 | 1500 |
| АИРЕ 80 А2 | 1,1 | 3000 |
| АИРЕ 80 В2 | 1,5 | 3000 |
| АИРЕ 80 С2 | 2,0 | 3000 |
| АИРЕ 80 С2/S6 | 2,2 | 3000 |
| АИРЕ 80 D2 | 2,2 | 3000 |
| АИРЕ 80 А4 | 0,75 | 1500 |
| АИРЕ 80 В4 | 1,1 | 1500 |
| АИРЕ 80 С4 | 1,5 | 1500 |
| АИРЕ 90 L2 | 2,2 | 3000 |
| **AIS-series three-phase motors** | | |
| АИС 90 S2 | 1,5 | 3000 |
| АИС 90 L2 | 2,2 | 3000 |
| АИС 90 S4 | 1,1 | 1500 |
| АИС 90 L4 | 1,5 | 1500 |
| АИС 90 S6 | 0,75 | 1000 |
| АИС 90 L6 | 1,1 | 1000 |
| АИС 100 L2 | 3,0 | 3000 |
| АИС 100 LB2 | 4,0 | 3000 |
| АИС 100 LA4 | 2,2 | 1500 |
| АИС 100 LB4 | 3,0 | 1500 |
| АИС 100 L6 | 1,5 | 1000 |
| АИС 100 LA8 | 0,75 | 750 |
| АИС 100 LB8 | 1,1 | 750 |

| **AIS-series multi-speed motors** | | |
|---|---|---|
| АИС 90 S4/2 | 1,12 | 1500 |
| | 1,5 | 3000 |
| АИС 100 LA4/2 | 2,2 | 1500 |
| | 2,65 | 3000 |
| АИС 100 LA6/4 | 1,32 | 1000 |
| | 1,6 | 1500 |
| АИС 100 LA8/4 | 0,8 | 750 |
| | 1,32 | 1500 |
| **AIVR-series explosion-proof asynchronous motors** | | |
| АИВР 80А2 | 1,5 | 3000 |
| АИВР 80А4 | 1,1 | 1500 |
| АИВР 80А6 | 0,75 | 1000 |
| АИВР 80В2 | 2,2 | 3000 |
| АИВР 80В4 | 1,5 | 1500 |
| АИВР 80В6 | 1,1 | 1000 |
| АИВР 90 L2 | 3,0 | 3000 |
| АИВР 90 LB2 | 4,0 | 3000 |
| АИВР 90 LA4 | 2,0 | 1500 |
| АИВР 90 L4 | 2,2 | 1500 |
| АИВР 90 LB4 | 3,0 | 1500 |
| АИВР 90 L6 | 1,5 | 1000 |
| АИВР 90 LA8 | 0,75 | 750 |
| АИВР 90 LB8 | 1,1 | 750 |
| АИВР 90 L4/2 | 2,2/2,65 | 1500/3000 |
| АИВР 90 L6/4 | 1,32/1,6 | 1000/1500 |
| АИВР 90 L8/4 | 0,8/1,32 | 750/1500 |
| **Motors for electric drive axial-flow fan in livestock buildings and poultry premises (poultry houses)** | | |
| АИРП 80А6 | 0,37 | 1000 |
| АИРП 80В6 | 1,1 | 1000 |
| АИРП 80С6 | 0,75 | 1000 |
| **Motors for railroad electric point machines** | | |
| АИРЧ80В4 | 0,55 | 1500 |
| АИРЧ80В6 | 0,3 | 1000 |
| **Energy-efficient motors** | | |
| 2AIR80A2 | 1,5 | 3000 |
| 2AIR80B2 | 2,2 | 3000 |
| 2AIR80A6 | 0,75 | 1000 |
| 2AIR80B6 | 1,1 | 1000 |
| 2AIR90L2 | 3,0 | 3000 |
| 2AIR90L4 | 2,2 | 1500 |
| 2AIR90L6 | 1,5 | 1000 |
| 2AIR100S2 | 4,0 | 3000 |
| 2AIR100L2 | 5,5 | 3000 |
| 2AIR100S4 | 3,0 | 1500 |
| 2AIR100L4 | 4,0 | 1500 |
| 2AIR100L6 | 2,2 | 1000 |

## .Key to Symbols

| xxx | x | xxx | x | x | xxxx | xx | xxxx |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

**1 – Series name:**
A – Asynchronous
И – developed within Interelectro framework
B – explosion-proof
P or C – binding of power capacity to dimensional linkage according to PC3031-71 or CENELEC – DOCUMENT 28/64 standards
П – for microclimate control systems in poultry and livestock buildings Ч
– for railways

**2 – Electric modifications:**
C – with increased slip;
B – built-in;
E – single-phase with a two-phase winding; 3E
– single-phase with a three-phase winding.

**3 – Dimension – rotation axis height, mm:** 71, 80, 90, 100, 112

**4 –S, M, L – Setting-out size according to frame length**
No letter – unified setting-out sizes for stators A, B, C, D.

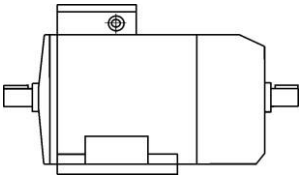
**5 – Center hub length for stators A, B, C, D**
Lack of a letter means that at the setting-out size given (S or L, M), only one central hub length is installed.

**6 – Number of engine poles:** 2, 4, 6, 8, 4/2, 6/4, 8/4.

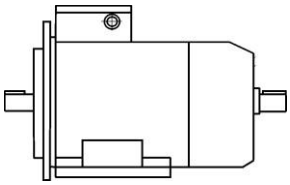
**7 – Structural variations**
Б –with built-in temperature protection;
РЗ – for motor-reducers;
Ж – for monoblock pumps;
П – increased accuracy ;
C – agricultural applications
X2 – chemical modification.

**8– Climatic modification:** У1**,** У2, У3, У5, Т2, УХЛ2, УХЛ4, according to all-Union standard 15150.

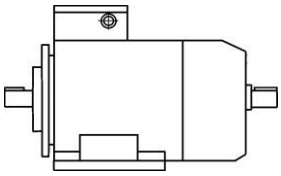
## .MOUNTING TYPE MODIFICATIONS



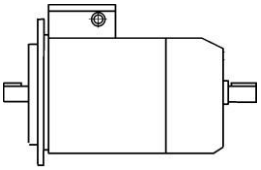
IM 1081(1082)
B3



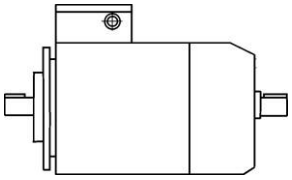
IM 2081(2082)
B35



IM 2181(2182)
B34



IM 3081(3082)
B5



IM 3681(3682)
B14

## 3. EXECUTION DEPENDING ON THE DEGREE OF PROTECTION

**IP 54, IP 55** according to all-Union standard 15150.
First digit is **5** – motor case is dust resistant Second digit is **4** – water splash protection.
**5** – water sheet protection.

## 4. ORDER OF ELECTRICAL MOTORS

To ensure a quick and high-quality execution of your order, please note the following motor specifications on the application from:
– type;
– power kW;
– rotating speed, rpm;
– standard voltage, V;
– network frequency, Hz;
– climatic version
– type of fastening;
– execution depending on the degree of protection;
– special requirements (if necessary).
Example: Motor АИР90L4У3, 380 V, 50 Hz, IM1081, IP54 (power capacity – 2,2 kW, 1500 rpm).

## 5. ASYNCHRONOUS ELECTRICAL MOTORS OF AIR SERIES

### 5.1. Asynchronous three-phase electrical motors of general-purpose modification

Designed for bundling with electric drives of different machinery in all industry and agriculture branches.

Developed for ac network. Power frequency: 50 and 60 Hz, 220-600V voltage, IP54 seal rating (by the order IP55), F insulation class.

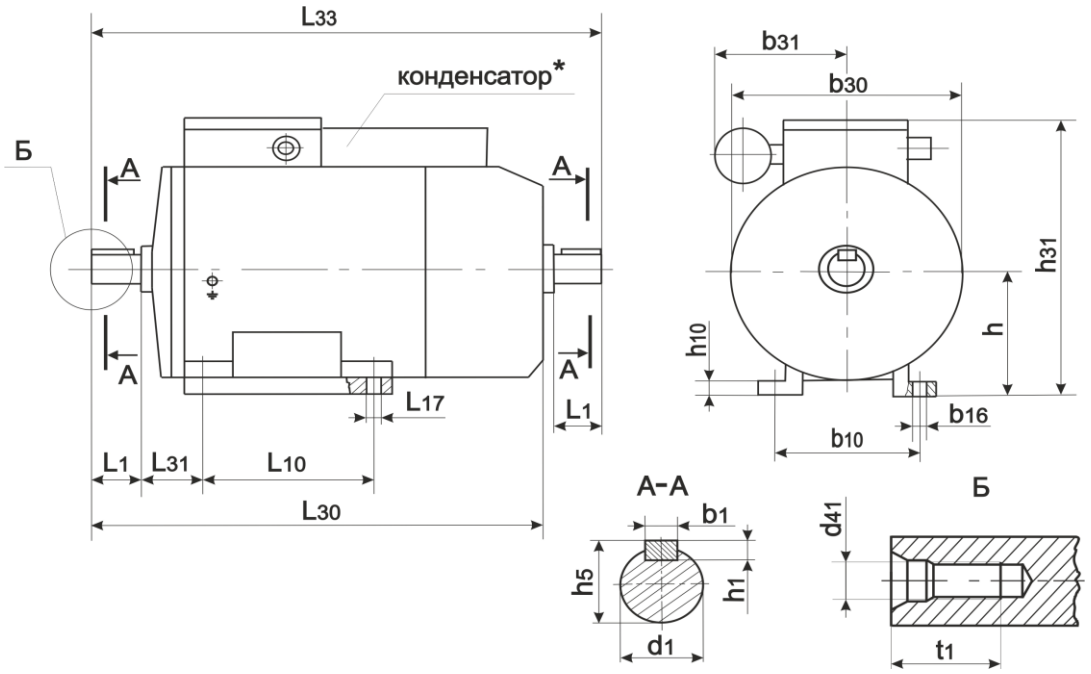
- Following motor modifications are possible: with in-built temperature
- protection (Б); of particular accuracy (П); chemically resistant (Х2); climatic modification:
-
-

mperate climate (У2, У3, У5), cold-temperate (УХЛ2, УХЛ4), tropical (Т2), according to all-Union State Standard 15150

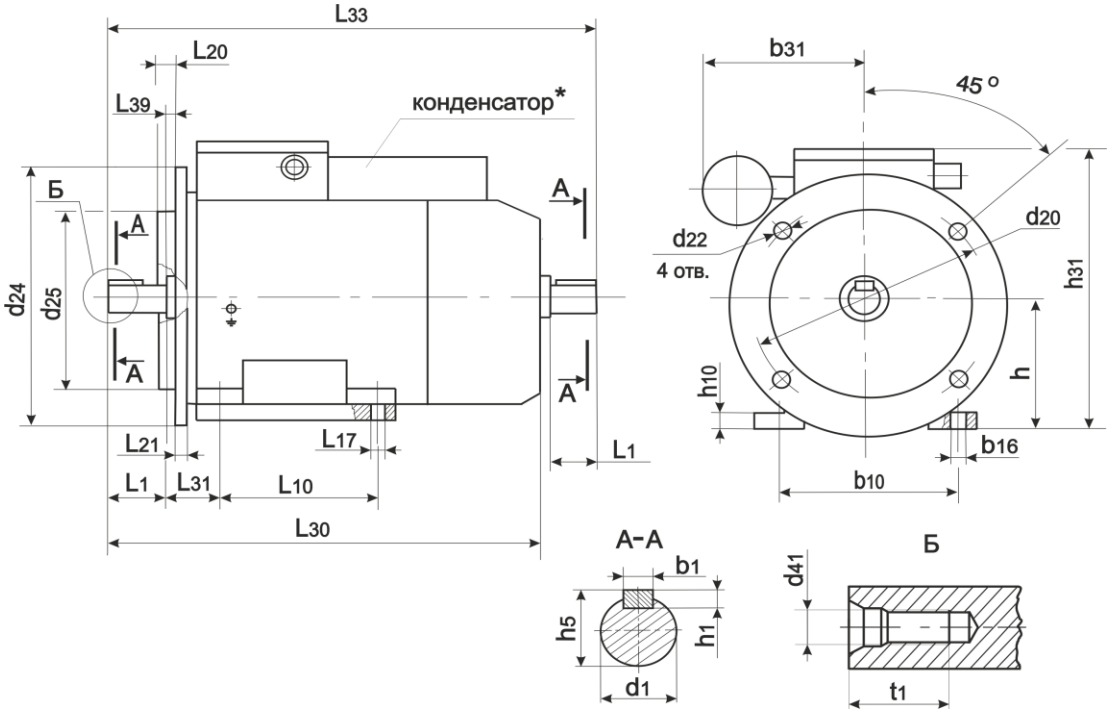
Motor overall and linkage dimensions are given in Figure A and Table 1.

Electrical parameters and masses (for IM1081 fulfillment) are given in Table 2.

Figure A




Modification IM108X




Modification IM208X, IM218X, IM308X, IM368X

(* for single-phase motors only)

Table 1

| Size index | | АИР 71<br>АИРЕ 71 | АИР 80A<br>АИРС 80A<br>АИРЕ 80A | АИР 80B<br>АИРС 80B<br>АИРЕ 80B<br>АИРЕ 80C<br>АИРЕ 80D | АИР 90<br>АИРС 90<br>АИРЕ 90 | *АИР 100S<br>*АИРС 100S | *АИР 100L | АИР 100L | АИР 112M |
|---|---|---|---|---|---|---|---|---|---|
| Overall (maximall) | | | | | | | | | |
| L30 | | 272,5 | 296,5 | 320,5 | 337 | 347 | 367 | 412 | 462 |
| L33 | | 316,5 | 350 | 374 | 390 | 410 | 430 | 466 | — |
| b30 | | 160 | 180 | 180 | 200 | 200 | 200 | 212 | 212 |
| b31 | | 115 | 115 | 115 | 115 | — | — | — | — |
| h31 | | 188 | 204,5 | 204,5 | 230 | 240 | 240 | 258,5 | 270,5 |
| h37 | | 117 | 124,5 | 124,5 | 140 | 140 | 140 | — | — |
| Linkage | | | | | | | | | |
| L1 | | 40 | 50 | 50 | 50 | 60 | 60 | 60 | 80 |
| L10 | | 90 | 100 | 100 | 125 | 112 | 140 | 140 | 140 |
| L17 | | 7 | 10 | 10 | 10 | 12 | 12 | 12 | 12 |
| L31 | | 45 | 50 | 50 | 56 | 63 | 63 | 63 | 70 |
| L39 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| b10 | | 112 | 125 | 125 | 140 | 160 | 160 | 160 | 190 |
| b16 | | 10 | 12 | 12 | 12 | 16 | 16 | 16 | 16 |
| h | | 71 | 80 | 80 | 90 | 100 | 100 | 100 | 112 |
| d1 | | 19 | 22 | 22 | 24 | 28 | 28 | 28 | 32 |
| d41 | | M6 | M8 | M8 | M10 | M10 | M10 | M10 | M12 |
| t1 | | 16 | 19 | 19 | 22 | 22 | 22 | 22 | 28 |
| d20 | IM2081,IM2082<br>IM3081,IM3082 | 165 | 165 | 165 | 215 | 215 | | 215 | 265 |
| | IM2181;IM2182<br>IM3681;IM3682 | 85;115 | 100; 115; 130 | 100; 115; 130 | 115; 130 | 115; 130; 165 | | 130 | 130; 165 |
| d22 | IM2081;IM2082<br>IM3081;IM3082 | 12 | 12 | 12 | 15 | 15 | | 15 | 15 |
| | IM2181;IM2182<br>IM3681;IM3682 | M6; M8 | M6; M8; M8 | M6; M8; M8 | M8; M8 | M8; M8; M10 | | M8 | M8; M10 |
| d24 | IM2081;IM2082<br>IM3081;IM3082 | 200 | 200 | 200 | 250 | 250 | | 250 | 300 |
| | IM2181;IM2182<br>IM3681;IM3682 | 105; 140 | 146; 146;160 | 146; 146; 160 | 140; 164 | 140; 164; 200 | | 180 | 156; 211 |
| d25 | IM2081;IM2082<br>IM3081;IM3082 | 130 | 130 | 130 | 180 | 180 | | 180 | 230 |
| | IM2181;IM2182<br>IM3681;IM3682 | 70; 95 | 80; 95;110 | 80; 95; 110 | 95; 110 | 95; 110; 130 | | 110 | 110; 130 |
| Справочные | | | | | | | | | |
| L20 | IM2081;IM2082<br>IM3081;IM3082 | 3,5 | 3,5 | 3,5 | 4,0 | 4,0 | | 4,0 | 4,0 |
| | IM2181;IM2182<br>IM3681;IM3682 | 2,5; 3,0 | 3,0; 3,0; 3,5 | 3,0; 3,0; 3,5 | 3,0; 3,5 | 3,0; 3,5; 4,0 | | 3,5 | 3,5 |
| L21 | | 10 | 10 | 10 | 12 | 12 | | 14 | 15 |
| b1 | | 6 | 6 | 6 | 8 | 8 | | 8 | 10 |
| h1 | | 6 | 6 | 6 | 7 | 7 | | 7 | 8 |
| h5 | | 21,5 | 24,5 | 24,5 | 27,0 | 31 | | 31 | 35 |
| h10 | | 8 | 9 | 9 | 10 | 12 | | 12 | 12 |

* Motors with reduced overall dimensions

Table 2

| Electric parameters | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Type | P, kW | Standard rotating frequency, rpm | Coef. of efficiency, % | cos φ | Iп/Iн | Mп/Mn | Mmax/Mn | Mmin/ Mn | Mass,kg |
| АИР 71 А2 | 0,75 | 3000 | 77,0 | 0,8 | 6,0 | 2,6 | 2,7 | 1,6 | 10,2 |
| АИР 71 В2 | 1,1 | 3000 | 78,0 | 0,8 | 6,0 | 2,2 | 2,4 | 1,6 | 10,5 |
| АИР 71 А4 | 0,55 | 1500 | 71,0 | 0,71 | 5,0 | 2,3 | 2,4 | 1,8 | 9,7 |
| АИР 71 В4 | 0,75 | 1500 | 74,0 | 0,78 | 5,0 | 2,5 | 2,6 | 2,4 | 10,2 |
| АИР 71 А6 | 0,37 | 1000 | 66,0 | 0,63 | 4,5 | 2,1 | 2,3 | 1,6 | 9,2 |
| АИР 71 В6 | 0,55 | 1000 | 69,0 | 0,68 | 4,5 | 1,9 | 2,2 | 1,6 | 10,8 |
| АИР 80 А2 | 1,5 | 3000 | 82,0 | 0,85 | 6,5 | 2,2 | 2,6 | 1,8 | 13,3 |
| АИР 80 В2 | 2,2 | 3000 | 83,0 | 0,87 | 6,4 | 2,1 | 2,6 | 1,8 | 15,9 |
| АИР 80 А4 | 1,1 | 1500 | 75,0 | 0,81 | 5,0 | 2,2 | 2,4 | 1,7 | 12,8 |
| АИР 80 В4 | 1,5 | 1500 | 78,5 | 0,80 | 5,3 | 2,2 | 2,4 | 1,7 | 14,7 |
| АИР 80 А6 | 0,75 | 1000 | 71,0 | 0,63 | 4,0 | 2,1 | 2,2 | 1,6 | 12,5 |
| АИР 80 В6 | 1,1 | 1000 | 75,0 | 0,74 | 4,5 | 2,2 | 2,3 | 1,8 | 16,2 |
| АИР 90 L2 | 3,0 | 3000 | 84,5 | 0,85 | 7,0 | 2,3 | 2,6 | 1,7 | 20,6 |
| АИР 90 LB2 | 4,0 | 3000 | 86,5 | 0,86 | 7,5 | 2,0 | 2,4 | 1,6 | 23,4 |
| АИР 90 L4 | 2,2 | 1500 | 81,0 | 0,83 | 6,0 | 2,0 | 2,6 | 2,0 | 19,7 |
| АИР 90 LB4 | 3,0 | 1500 | 81,5 | 0,81 | 6,5 | 2,0 | 2,4 | 1,7 | 24,1 |
| АИР 90 L6 | 1,5 | 1000 | 76,0 | 0,72 | 5,0 | 2,0 | 2,3 | 1,9 | 20,6 |
| АИР 90 LA8 | 0,75 | 750 | 72,5 | 0,71 | 4,0 | 1,5 | 2,0 | 1,5 | 19,5 |
| АИР 90 LB8 | 1,1 | 750 | 76,0 | 0,72 | 4,5 | 1,5 | 2,2 | 1,5 | 22,3 |
| АИР 100 S2 | 4,0 | 3000 | 86,5 | 0,86 | 7,5 | 2,0 | 2,4 | 1,6 | 23,6 |
| АИР 100 S4 | 3,0 | 1500 | 81,5 | 0,81 | 6,5 | 2,0 | 2,4 | 1,7 | 25,8 |
| АИР 100 L4 | 4,0 | 1500 | 83,1 | 0,80 | 7,0 | 2,1 | 2,4 | 1,6 | 26,1 |
| АИР 100 L6 | 2,2 | 1000 | 78,0 | 0,74 | 6,0 | 1,9 | 2,2 | 1,6 | 25,1 |
| АИР 100L2 | 5,5 | 3000 | 87,5 | 0,88 | 7,5 | 2,1 | 2,4 | 1,6 | 31,0 |
| АИР 112М2 | 7,5 | 3000 | 87,5 | 0,89 | 7,5 | 2,0 | 2,2 | 1,6 | 37,0 |
| АИР 112М4 | 5,5 | 1500 | 85,0 | 0,86 | 7,0 | 2,0 | 2,5 | 1,6 | 38,5 |
| АИР 112МА6 | 3,0 | 1000 | 83,0 | 0,72 | 6,0 | 2,0 | 2,2 | 1,6 | 35,9 |
| АИР 112МА8 | 2,2 | 750 | 77,2 | 0,73 | 4,6 | 2,1 | 2,5 | 1,4 | 35,3 |
| АИР 112МВ6 | 4 | 1000 | 84,5 | 0,75 | 6,0 | 2,0 | 2,2 | 1,6 | 41 |
| АИР 112МВ8 | 3,0 | 750 | 76,5 | 0,72 | 4,4 | 2,1 | 2,4 | 1,4 | 40 |

.2.

**Energy-efficient motors**

2AIR80, 2AIR90, 2AIR100 energy-efficient motors went into serial production at the enterprise in 2013. They are intended for different electric motor driven mechanisms of all the branches of industry and agricultural complex. The motors are powered by alternating current sources such as from power grid. (They are designed to operate from AC power).

Electric motors IE2 efficiency-class according to STB IEC 60034-30-2011. The nominal values of the motors' main parameters are shown in Table 3

Table 3

| Type | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | Efficiency | cos φ | Mп/Mn | Mmax/Mn | Mmin/Mn | Iп/Iн |
|---|---|---|---|---|---|---|---|---|---|
| 2AIR80A2 | 1,5 | 3000 | 81,3 | 2 | 0,89 | 2,2 | 2,6 | 1,8 | 6,5 |
| 2AIR80B2 | 2,2 | 3000 | 83,2 | 2 | 0,90 | 2,1 | 2,6 | 1,8 | 6,4 |
| 2AIR80A6 | 0,75 | 1000 | 75,9 | 2 | 0,67 | 2,1 | 2,2 | 1,6 | 4,0 |
| 2AIR80B6 | 1,1 | 1000 | 78,1 | 2 | 0,69 | 2,2 | 2,3 | 1,8 | 4,5 |
| 2AIR90L2 | 3,0 | 3000 | 84,6 | 2 | 0,90 | 2,3 | 2,7 | 2,0 | 7,0 |
| 2AIR90L4 | 2,2 | 1500 | 84,5 | 2 | 0,84 | 2,7 | 2,8 | 2,2 | 7,2 |
| 2AIR90L6 | 1,5 | 1000 | 80,3 | 2 | 0,76 | 2,6 | 3,0 | 2,4 | 6,0 |
| 2AIR100S2 | 4,0 | 3000 | 85,8 | 2 | 0,93 | 2,5 | 3,5 | 2,0 | 8,3 |
| 2AIR100L2 | 5,5 | 3000 | 87,0 | 2 | 0,94 | 2,4 | 3,2 | 1,65 | 8,4 |
| 2AIR100S4 | 3,0 | 1500 | 85,7 | 2 | 0,78 | 2,5 | 3,0 | 2,0 | 7,0 |
| 2AIR100L4 | 4,0 | 1500 | 86,9 | 2 | 0,79 | 2,5 | 3,0 | 2,0 | 7,5 |
| 2AIR100L6 | 2,2 | 1000 | 82,2 | 2 | 0,80 | 2,7 | 3,1 | 2,0 | 6,3 |

**5.3. Multispeed electric motors**

Designed for machinery drive that require stepped rotation frequency control.
Special modifications comply with general-purpose modification. Overall and linkage dimensions are shown in Figure A and Table 1. Electric parameters and masses (for IM1081 fulfillment) are given in Table 4

Table 4

| Type | Electric parameters | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Mп/Mn | Mmax/Mn | Mmin/Mn | |
| АИР 80 А4/2 | 1,12 | 1500 | 74,0 | 0,78 | 5,0 | 1,9 | 2,2 | 1,6 | 13,1 |
| | 1,5 | 3000 | 73,0 | 0,85 | 5,0 | 1,9 | 2,0 | 1,5 | |
| АИР 90 L4/2 | 2,2 | 1500 | 79,0 | 0,83 | 6,0 | 1,9 | 2,4 | 1,6 | 21,3 |
| | 2,65 | 3000 | 78,0 | 0,86 | 6,0 | 2,0 | 2,4 | 1,5 | |
| АИР 90 L6/4 | 1,32 | 1000 | 74,0 | 0,68 | 5,0 | 2,3 | 2,5 | 1,5 | 22,0 |
| | 1,6 | 1500 | 74,0 | 0,85 | 5,5 | 1,6 | 2,1 | 1,2 | |
| АИР 90 L8/4 | 0,8 | 750 | 62,0 | 0,55 | 3,0 | 1,7 | 2,0 | 1,6 | 20,9 |
| | 1,32 | 1500 | 75,0 | 0,84 | 5,0 | 1,5 | 2,0 | 1,3 | |
| АИР 100 S8/4 | 1,0 | 750 | 64,0 | 0,53 | 3,4 | 1,2 | 1,8 | 1,1 | 22,8 |
| | 1,7 | 1500 | 78,0 | 0,87 | 5,0 | 1,1 | 1,8 | 1,0 | |

**Motors with the greater slip**

Designed for machinery drive with long-term lag and for machinery with intermittent working cycle (S3). These motors have greater thread slip at standard load than basic modification, and critical slip equals about 40%. The motors are unified with basic modification. They have the letter «C» after serial name (АИРС). Special modifications comply with general-purpose modification. Electric parameters and masses (for IM1081 fulfillment) age given in Table 5

Table 5

| Type | Electric parameters | | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | P, kW at S3 40% | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Critical slip, % | Iп/Iн | Мп/ Мн | Mmax/ Мн | Mmin/ Мн | |
| АИРС 80 А2 | 1,9 | 3000 | 76,0 | 0,80 | 40 | 6,5 | 2,1 | 2,2 | 1,6 | 13,3 |
| АИРС 80 В2 | 2,5 | 3000 | 76,0 | 0,86 | | 6,5 | 2,1 | 2,2 | 1,6 | 15,9 |
| АИРС 80 А4 | 1,32 | 1500 | 69,0 | 0,80 | | 6,5 | 2,1 | 2,2 | 1,6 | 12,8 |
| АИРС 80 В4 | 1,7 | 1500 | 71,0 | 0,82 | | 6,5 | 2,1 | 2,2 | 1,6 | 14,7 |
| АИРС 80 А6 | 0,8 | 1000 | 67,0 | 0,73 | | 4,0 | 2,0 | 2,0 | 1,6 | 12,5 |
| АИРС 80 В6 | 1,25 | 1000 | 66,5 | 0,73 | | 4,0 | 2,1 | 2,1 | 1,6 | 16,2 |
| АИРС 90 L2 | 3,5 | 3000 | 80,0 | 0,86 | | 6,5 | 2,0 | 2,2 | 1,6 | 20,6 |
| АИРС 90 LB2 | 4,8 | 3000 | 82,0 | 0,86 | | 7,5 | 2,0 | 2,2 | 1,6 | 23,4 |
| АИРС 90 L4 | 2,4 | 1500 | 77,0 | 0,81 | | 6,0 | 2,2 | 2,2 | 2,0 | 19,7 |
| АИРС 90 LB4 | 3,2 | 1500 | 77,0 | 0,80 | | 6,0 | 2,0 | 2,2 | 1,6 | 24,1 |
| АИРС 90 L6 | 1,7 | 1000 | 71,0 | 0,72 | | 6,0 | 2,0 | 2,2 | 1,6 | 20,6 |
| АИРС 90 LA8 | 0,9 | 750 | 69,0 | 0,72 | | 3,5 | 1,6 | 1,9 | 1,5 | 19,5 |
| АИРС 90 LB8 | 1,2 | 750 | 67,0 | 0,72 | | 3,5 | 1,6 | 1,9 | 1,5 | 22,3 |
| АИРС 100 S2 | 4,8 | 3000 | 82,0 | 0,86 | | 7,5 | 2,0 | 2,2 | 1,6 | 23,6 |
| АИРС 100 S4 | 3,2 | 1500 | 77,0 | 0,80 | | 6,0 | 2,0 | 2,2 | 1,6 | 25,8 |

## 5. Electric motors for unit construction pump

Designed for rotary, circulation and vortex pump drive.

Motors are equipped with a special tail shaft, depending on pump design. Overall and linkage dimensions are shown in Figure B and Table 6. Electric parameters and masses (for IM 1081 fulfillment) are given in Table 7

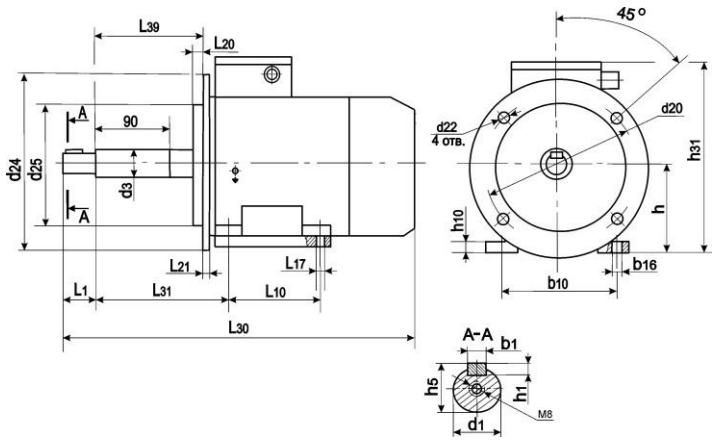



Figure B

Table 6

| Size index | | Standard motor size | | |
|---|---|---|---|---|
| | | АИР 80АЖ | АИР 80ВЖ | АИР 90Ж |
| Overall (maximal) | | | | |
| L30 | | 392,5 | 416,5 | 431,0 |
| h31 | | 204,5 | 204,5 | 224,5 |
| h37 | | 124,5 | 124,5 | 134,5 |
| Linkage | | | | |
| L1 | | 28 | 28 | 28 |
| L10 | | 100 | 100 | 125 |
| L17 | | 10 | 10 | 10 |
| L31 | | 168 | 168 | 174 |
| L39 | | 118 | 118 | 118 |
| b10 | | 125 | 125 | 140 |
| b16 | | 12 | 12 | 12 |
| h | | 80 | 80 | 90 |
| d1 | | 19 | 19 | 19 |
| d3 | | 25 | 25 | 25 |
| d20 | IM2081,IM2082 IM3081,IM3082 | 165 | 165 | 215 |
| d22 | IM2081;IM2082 IM3081;IM3082 | 12 | 12 | 15 |
| d24 | IM2081;IM2082 IM3081;IM3082 | 200 | 200 | 250 |
| d25 | IM2081;IM2082 IM3081;IM3082 | 130 | 130 | 180 |
| Reference | | | | |
| L20 | IM2081,IM2082 IM3081,IM3082 | 3,5 | 3,5 | 4,0 |
| L21 | | 10 | 10 | 12 |
| b1 | | 6 | 6 | 6 |
| h1 | | 6 | 6 | 6 |
| h5 | | 21,5 | 21,5 | 21,5 |
| h10 | | 9 | 9 | 10 |

Table 7

| Type | Electric parameters | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Мп/ Мн | Mmax/ Мн | Mmin/ Мн | |
| АИР 80 А2Ж | 1,5 | 3000 | 82,0 | 0,85 | 6,5 | 2,2 | 2,6 | 1,8 | 15,5 |
| АИР 80 В2Ж | 2,2 | 3000 | 83,0 | 0,87 | 6,4 | 2,1 | 2,6 | 1,8 | 17,5 |
| АИР 80 В4Ж | 1,5 | 1500 | 78,5 | 0,80 | 5,3 | 2,2 | 2,4 | 1,7 | 16,7 |
| АИР 90 L2Ж | 3,0 | 3000 | 84,5 | 0,85 | 7,0 | 2,3 | 2,6 | 1,7 | 23,0 |
| АИР 90 L4Ж | 2,2 | 1500 | 81,0 | 0,83 | 6,0 | 2,0 | 2,6 | 2,0 | 22,3 |

## 6. Electric motors for motor-reducers

Designed for indented motor-reducer drive. Motors are produced With special shafts and flanges (figure C and Table 9, sizes for basic modification are given in the numerator, sizes for the variant with shortened tail shaft are given in the denominator)Electrical parameters comply with general-purpose modification

Motors (Table 8)

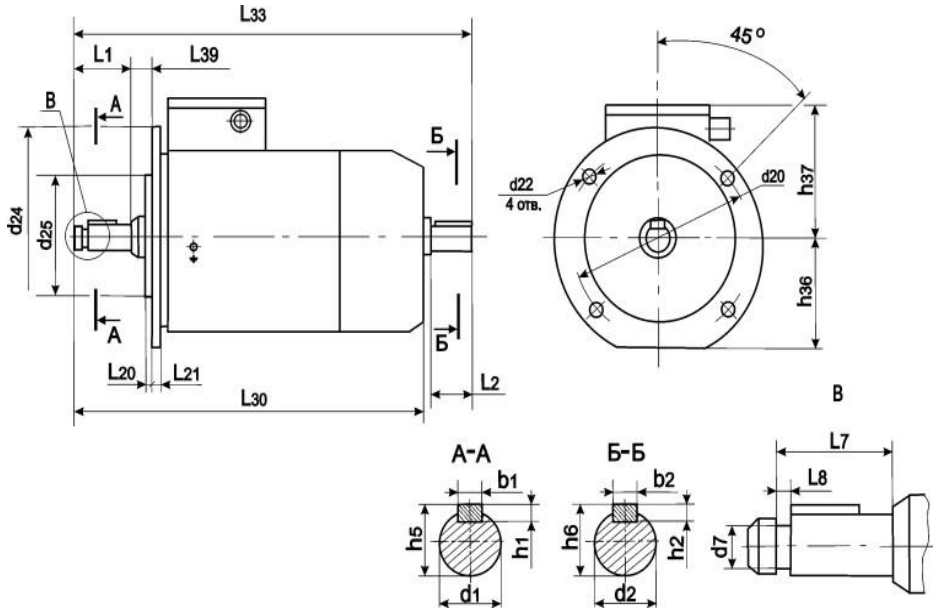



Table 8

| Size index | | Standard motor size |
|---|---|---|
| | | АИР 90Р3 |
| Overall (maximal) | | |
| L30 | | 378/ 370 |
| L33 | | 430/422 |
| h36 | | 95 |
| h37 | | 134,5 |
| Linkage | | |
| L1 | | 42/34 |
| L39 | | 18 |
| h | | 90 |
| d1 | | 16 |
| d2 | | 24 |
| d7 | | 15 |
| d20 | IM3021,IM3022 IM3031,IM3032 | 200 |
| d22 | IM3021,IM3022 IM3031,IM3032 | 11 |
| d24 | IM3021,IM3022 IM3031,IM3032 | 220 |
| d25 | IM3021,IM3022 IM3031,IM3032 | 130 |
| Reference | | |
| L20 | IM3021,IM3022 IM3031,IM3032 | 3,5 |
| L2 | | 50 |
| L7 | | 39/31 |
| L8 | | 1,4 |
| L21 | | 12 |
| b1 | | 4 |
| b2 | | 8 |
| h1 | | 4 |
| h2 | | 7 |
| h5 | | 17,5 |
| h6 | | 27 |

Table 9

| Type | Electric parameters | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Mп/M н | Mmax/ Mн | Mmin/ Mн | |
| АИР 90 L2 Р3 | 3,0 | 3000 | 84,5 | 0,85 | 7,0 | 2,3 | 2,6 | 1,7 | 22,2 |
| АИР 90 L4 Р3 | 2,2 | 1500 | 81,0 | 0,83 | 6,0 | 2,0 | 2,6 | 2,0 | 20,9 |
| АИР 90 L6 Р3 | 1,5 | 1000 | 76,0 | 0,72 | 5,0 | 2,0 | 2,3 | 1,9 | 21,9 |
| АИР 90 LA8 Р3 | 0,75 | 750 | 72,5 | 0,71 | 4,0 | 1,5 | 2,0 | 1,5 | 20,7 |
| АИР 90 LB8 Р3 | 1,1 | 750 | 76,0 | 0,72 | 4,5 | 1,5 | 2,2 | 1,5 | 24,2 |

**Electric motors for axial-flow fan drive at livestock houses and poultry enterprises («birdhouses»)**

The motors are intended for installation in microclimate control systems in poultry and livestock buildings and designed to operate in environments with high content of sulfur dioxide, hydrogen sulfide, ammonia, hydrogen chloride. They are installed on braces in the exhaust chimney of ventilation and heating system with an axial-flow fan on the end of a shaft.

The e-motors are rated at IP55. Overall, installation and mounting dimensions are shown in Figure D. Electric parameters and masses are given in Table 10

Table 10

| Type | Electric parameters | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Mп/Mн | Mmax/Mн | Mmin/Mн | |
| АИРП 80А6 | 0,37 | 1000 | 67,5 | 0,78 | 4,0 | 1,4 | 1,8 | - | 11,0 |
| АИРП 80В6 | 1,1 | 1000 | 75,0 | 0,74 | 4,5 | 2,2 | 2,3 | 1,8 | 16,8 |
| АИРП 80С6 | 0,75 | 1000 | 71,0 | 0,71 | 4,0 | 2,1 | 2,2 | 1,6 | 12,2 |
| АИРП2П80А6 | 0,37 | 1000 | 61,1 | 0,76 | 4,0 | 1,4 | 1,8 | - | 11,0 |

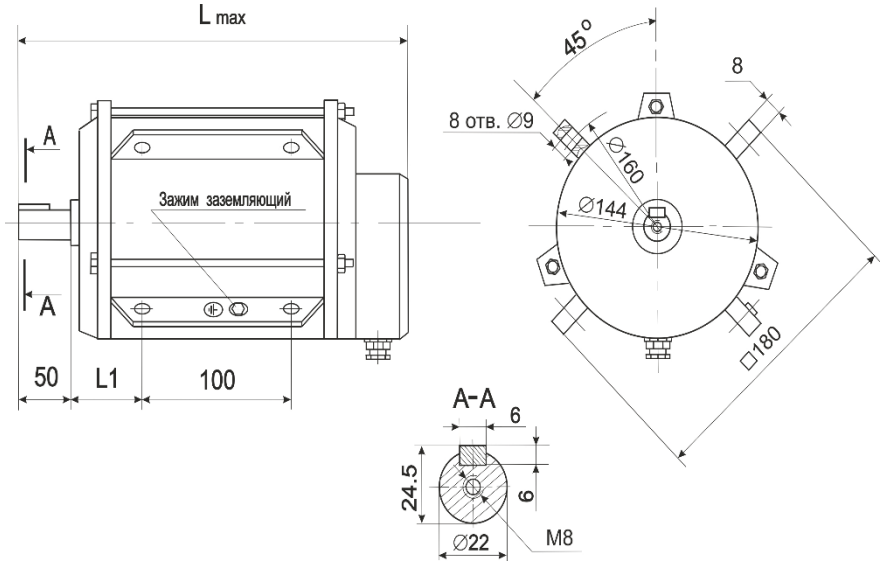


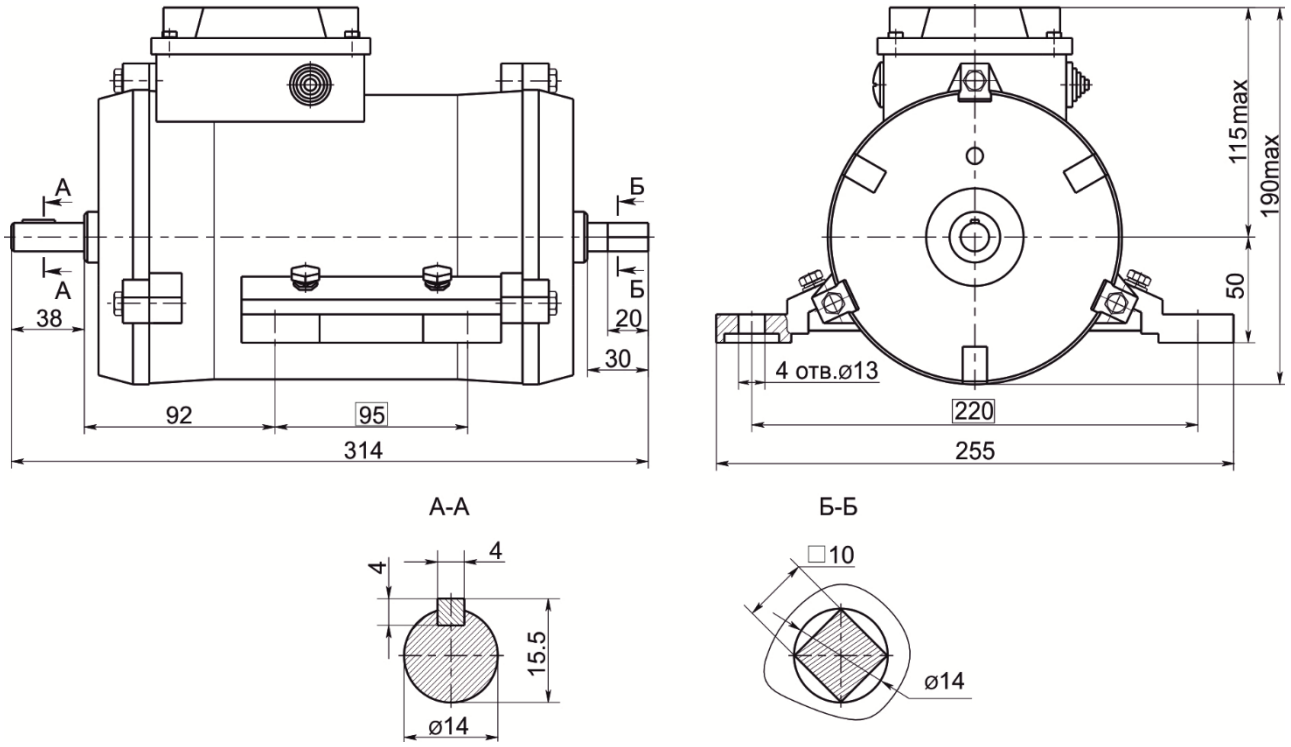

Figure D АИРП 80 (IM9241)

| Type | L, мм | L1, мм |
|---|---|---|
| АИРП 80А6 | 275 | 50 |
| АИРП 80С6 | 285 | 50 |
| АИРП 80В6 | 315 | 68 |

Table 10A

## 5.8. Motors for railroad electric point machines

The e-motors are designed for electric railway turnout point machines. Design requirements: a three-phase induction motor with a squirrel-cage rotor, mounting position IM9242, climatic version У2, IP code is IP54. Dimensions of the motors are shown in Figure E. Electrical parameters and weights are shown in table 11.




Motors АИРЧ80В4, В6 IM 9242

Table 11

| Electric parameters | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Type | P, kW | Coefficient of efficiency, % | cos φ | Slip,% | Mп/Mн | Mmax/Mн | Mmin/Mн | Iп/Iн | Mass, kg |
| rotating frequency, 1500 rpm | | | | | | | | | |
| АИРЧ80В4 | 0,55 | 78,0 | 0,69 | 7,0 | 4,8 | 5,8 | 4,5 | 6,5 | 14,0 |
| rotating frequency, 1000 rpm | | | | | | | | | |
| АИРЧ80В6 | 0,3 | 66,0 | 0,72 | 15,0 | 2,0 | 2,2 | 1,8 | 4,5 | 16,0 |

**.9.S**

**ingle-phase electric motors**

Designed for electric drives of various household machinery (woodworkers, pumps, compressors, etc.) and household labor-saving devices (food choppers, concrete mixing machine, etc.).

Power supply: ac network 220 V.

Motors are produced with an in-built compact working condenser.

Single-phase motors are produced in the same mounting modifications, as basic motors of АИР series and comply with them by linkage dimensions.

Motor sizes are given in Figure A and Table 1

Basic electric parameters and masses (for IM1081 fulfillment) are given in Table 12

Table 12

| Type | Electric parameters | | | | | | | | | Mass, kg |
|---|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Мп/Мн | Mmax/Мн | C | | |
| | | | | | | | | мкF | В | |
| АИРЕ 71 А2 | 0,55 | 3000 | 75,0 | 0,90 | 4,3 | 0,5 | 2,0 | 20 | 450 | 10,2 |
| АИРЕ 71 В2 | 0,75 | 3000 | 71,0 | 0,90 | 4,0 | 0,55 | 1,9 | 25 | | 10,5 |
| АИРЕ 71 С2 | 1,1 | 3000 | 70,0 | 0,90 | 3,8 | 0,55 | 2,0 | 30 | | 10,8 |
| АИРЕ 71 А4 | 0,37 | 1500 | 64,0 | 0,90 | 3,0 | 0,6 | 2,0 | 12 | | 9,7 |
| АИРЕ 71 В4 | 0,55 | 1500 | 69,0 | 0,90 | 3,0 | 0,6 | 1,8 | 16 | | 10,2 |
| АИРЕ 71 С4 | 0,75 | 1500 | 65,0 | 0,89 | 3,0 | 0,45 | 1,6 | 18 | | 10,6 |
| АИРЕ 80 А2 | 1,1 | 3000 | 70,0 | 0,90 | 3,8 | 0,55 | 2,0 | 25 | | 13,3 |
| АИРЕ 80 В2 | 1,5 | 3000 | 76,0 | 0,95 | 4,0 | 0,45 | 1,9 | 40 | | 15,9 |
| АИРЕ 80 С2 | 1,9 | 3000 | 75,0 | 0,95 | 4,0 | 0,45 | 1,9 | 40 | | 16,5 |
| АИРЕ 80 D2 | 2,2 | 3000 | 74,0 | 0,95 | 4,0 | 0,45 | 1,9 | 50 | | 18,0 |
| АИРЕ 80 А4 | 0,75 | 1500 | 64,0 | 0,88 | 3,0 | 0,55 | 1,8 | 30 | | 12,8 |
| АИРЕ 80 В4 | 1,1 | 1500 | 71,0 | 0,95 | 2,8 | 0,45 | 1,8 | 30 | | 14,7 |
| АИРЕ 80 С4 | 1,5 | 1500 | 71,0 | 0,95 | 2,8 | 0,45 | 1,6 | 35 | | 16,7 |
| АИРЕ 90 L2 | 2,2 | 3000 | 76,0 | 0,92 | 3,4 | 0,45 | 1,9 | 60 | | 20,6 |
| АИРЕ 90 L4 | 1,5 | 1500 | 71 | 0,95 | 2,8 | 0,45 | 1,6 | 40 | | 19,7 |

## .ADD-IN MOTORS

Motors are designed for machinery integration and represent a wired stator center hub and a rotor center hub, with unprocessed external diameter. Basic sizes are given in Figure F and Table 13. Electrical parameters comply with those of basic modification motors.

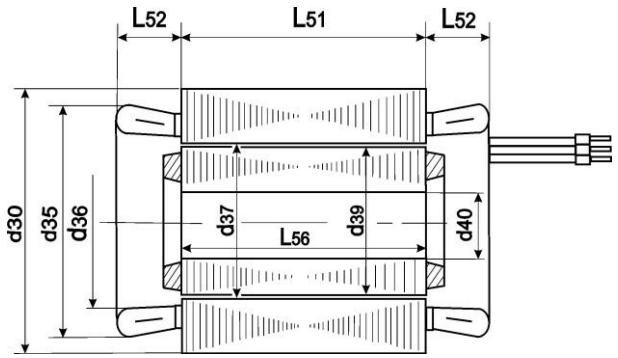



Figure F

Table 13

| Type | Sizes,mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | d30 | d35 | d36 | d37 | d39 | d40 | L51 | L52 | L56 | Mass,kg |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| АИРВ 71А2 | 118 | 110 | 72 | 68 | 67,5 | 25 | 68 | 42 | 68 | 5,8 |
| АИРВЕ 71А2 | | | | | | | | 40 | | |
| АИРВ 71В2 | | | | | | | 78 | 42 | 78 | 6,2 |
| АИРВЕ 71В2 | | | | | | | | 40 | | |
| АИРВЕ 71С2 | | | | | | | 90 | 36 | 90 | 6,6 |
| АИРВ 71А4 | | | | | | | 68 | 42 | 68 | 5,3 |
| АИРВЕ 71А4 | | | | | | | | 40 | | |
| АИРВ 71В4 | | | | | | | 78 | 42 | 78 | 6,0 |
| АИРВЕ 71В4 | | | | | | | | 40 | | |
| АИРВ 71А6 | | | 82 | 78 | 77,5 | | 65 | 35 | 65 | 4,7 |
| АИРВ 71В6 | | | | | | | 90 | | 90 | 6,4 |
| АИРВ 80А2 | 131 | 124 | 76 | 73 | 72,4 | 30 | 78 | 45 | 78 | 8,4 |
| АИРВ С80А2 | | | | | | | | | | |
| АИРВЕ 80А2 | | | | | | | | | | |
| АИРВ 80В2 | | | | | | | 102 | | 102 | 10,5 |
| АИРВ С80В2 | | | | | | | | | | |
| АИРВЕ 80В2 | | | | | | | | | | |
| АИРВЕ 80С2 | | | | | | | 110 | | 110 | 10,9 |
| АИРВЕ 80D2 | | | | | | | 122 | 40 | 122 | 11,5 |
| АИРВ 80А4 | | | 90 | 86 | 85,5 | | 78 | 44 | 78 | 7,9 |
| АИРВ С80А4 | | | | | | | | | | |
| АИРВЕ 80А4 | | | | | | | | 40 | | |
| АИРВ 80В4 | | | | | | | 98 | 44 | 98 | 9,6 |
| АИРВ С80В4 | | | | | | | | | | |
| АИРВ Е80В4 | | | | | | | | 40 | | |
| АИРВЕ 80С4 | | | | | | | 122 | | 122 | 10,9 |
| АИРВ 80А6 | | | 93 | 89 | 88,5 | | 78 | 38 | 78 | 7,8 |
| АИРВ С80А6 | | | | | | | | | | |
| АИРВ 80В6 | | | | | | | 115 | | 115 | 12,4 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| АИРВ С80В6 | | | | | | | | | | |
| АИРВ 90В2 | 149 | 142,5 | 86 | 82 | 81,5 | 35 | 130 | 40 | 130 | 16,5 |
| АИРВ 90А2 | | | | | | | 100 | 49 | 100 | 13,3 |
| АИРВЕ 90А2 | | | | | | | | | | |
| АИРВ С90А2 | | | | | | | | | | |
| АИРВ 90В4 | | | 100 | 96 | 95,5 | | 130 | 40 | 130 | 16,3 |
| АИРВ 90А4 | | | | | | | 100 | 47 | 100 | 12,5 |
| АИРВЕ 90А4 | | | | | | | | | | |
| АИРВ С90А4 | | | | | | | | | | |
| АИРВ 90А6 | | | 104 | 100 | 99,5 | | 110 | 42 | 110 | 13,4 |
| АИРВ С90А6 | | | | | | | | | | |
| АИРВ 90А8 | | | 108 | 104,1 | 103,6 | | 100 | 37,5 | 100 | 11,8 |
| АИРВ С90А8 | | | | | | | | | | |
| АИРВ 90В8 | | | | | | | 130 | | 130 | 15,1 |
| АИРВ С90В8 | | | | | | | | | | |
| АИРВ 90А4/2 | | | 100 | 96 | 95,5 | | 120 | 45 | 120 | 14,9 |
| АИРВ 90А6/4 | | | | | | | | 42 | | 13,8 |
| АИРВ 90А8/4 | | | 104 | 100 | 99,5 | | 110 | | 110 | 13,5 |
| АИРВ 100А2 | 150 | 142,5 | 86 | 82 | 81,5 | 35 | 130 | 40 | 130 | 16,4 |
| АИРВ С100А2 | | | | | | | | | | 16,4 |
| АИРВ 100А4 | | | 100 | 96 | 95,5 | | | | | 16,2 |
| АИРВС 100А4 | | | | | | | | | | 16,2 |
| АИРВ 100В4 | | | | | 95,4 | | 150 | | 150 | 19,2 |
| АИРВ 100В6 | | | 104 | 100 | 99,5 | | | | | 17,8 |
| АИРВ 100А8/4 | | | | | | | 130 | | 130 | 15,5 |
| АИРВ 100А6/4 | | | 100 | 96 | 95,5 | | | | | 15,9 |
| АИРВ 10В2 | 176 | 160 | 99 | 95 | 94,0 | | 112 | 60 | 112 | 20,3 |

## 6 Asynchronous electrical motors of AIS series

Motors have binding of power capacity to linkage Dimensions according to CENELEC- DOCUMENT 28/64 standards and DIN42673, DIN 42677 standards) Overall and linkage dimensions are shown in Figure G and Table 14. Basic electric parameters and Masses (for IM1081 fulfillment) are given in Tables 14, 15

Figure G

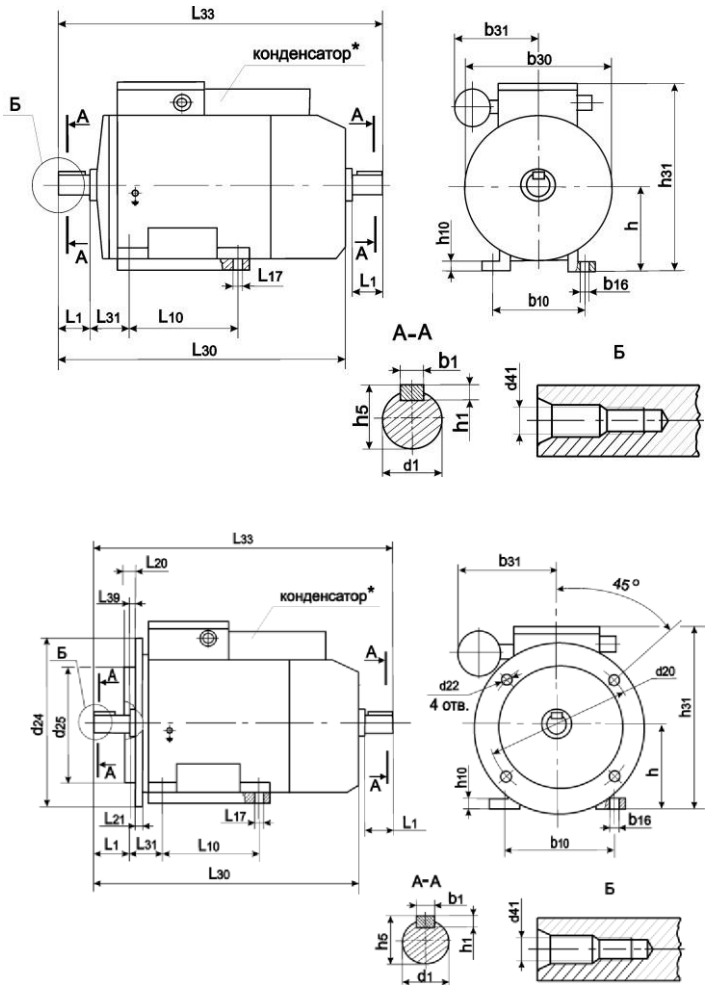



Table 14

| Size index | | Standard motor size | | |
|---|---|---|---|---|
| | | 90 S АИС | 90 L АИСЕ | 100 АИС |
| Overall (maximal) | | | | |
| L30 | | 296,5 | 320,5 | 347 |
| L33 | | 350 | 374 | 410 |
| b30 | | 180 | 180 | 200 |
| b31 | | 115 | 115 | — |
| h31 | | 214,5 | 214,5 | 240 |
| h37 | | 124,5 | 124,5 | 140 |
| Linkage | | | | |
| L1 | | 50 | 50 | 60 |
| L10 | | 100 | 125 | 140 |
| L17 | | 10 | 10 | 12 |
| L31 | | 56 | 56 | 63 |
| b10 | | 140 | 140 | 160 |
| b16 | | 14 | 14 | 16 |
| h | | 90 | 90 | 100 |
| d1 | | 24 | 24 | 28 |
| d41 | | M8 | M8 | M10 |
| d20 | IM2081,IM2082 IM3081,IM3082 | 165 | 165 | 165 |
| | IM2181,IM2182 IM3681,IM3682 | 115;130 | 115;130 | 130;165 |
| d22 | IM2081;IM2082 IM3081;IM3082 | 12 | 12 | 12 |
| | IM2181;IM2182 IM3681;IM3682 | M8;M8 | M8;M8 | M8;M10 |
| d24 | IM2081;IM2082 IM3081;IM3082 | 200 | 200 | 250 |
| | IM2181;IM2182 IM3681;IM3682 | 140;160 | 140;160 | 160;200 |
| d25 | IM2081;IM2082 IM3081;IM3082 | 130 | 130 | 180 |
| | IM2181;IM2182 IM3681;IM3682 | 95;110 | 95;110 | 110;130 |
| Reference | | | | |
| L20 | IM2081,IM2082 IM3081,IM3082 | 3,5 | 3,5 | 4,0 |
| | IM2181,IM2182 IM3681,IM3682 | 3,0; 3,5 | 3,0; 3,5 | 3,5; 4,0 |
| L21 | | 10 | 10 | 12 |
| b1 | | 8 | 8 | 8 |
| h1 | | 7 | 7 | 7 |
| h5 | | 27,0 | 27,0 | 31,0 |
| h10 | | 10 | 10 | 12 |

Modification IM10

8X

Modification IM208X, IM218X, IM308X, IM368X

* for single-phase motors only)

Table 15

| Type | Electric parameters | | | | | | | | Mass,kg |
|---|---|---|---|---|---|---|---|---|---|
| | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | Iп/Iн | Мп/Мн | Mmax/Мн | Mmin/Мн | |
| АИС 90 S2 | 1,5 | 3000 | 82,0 | 0,85 | 6,5 | 2,2 | 2,6 | 1,8 | 13,4 |
| АИС 90 L2 | 2,2 | 3000 | 83,0 | 0,87 | 6,4 | 2,1 | 2,6 | 1,8 | 16.0 |
| АИС 90 S4 | 1,1 | 1500 | 75,0 | 0,81 | 5,0 | 2,2 | 2,4 | 1,7 | 12,9 |
| АИС 90 L4 | 1,5 | 1500 | 78,5 | 0,80 | 5,3 | 2,2 | 2,4 | 1,7 | 14,8 |
| АИС 90 S6 | 0,75 | 1000 | 71,0 | 0,63 | 4,0 | 2,1 | 2,2 | 1,6 | 12,6 |
| АИС 90 L6 | 1,1 | 1000 | 75,0 | 0,74 | 4,5 | 2,2 | 2,3 | 1,8 | 16,3 |
| АИС 90 S8 | 0,37 | 750 | 63,5 | 0,59 | 3,5 | 2,0 | 2,3 | 1,4 | 14,8 |
| АИС 90 L8 | 0,55 | 750 | 65,0 | 0,60 | 3,5 | 2,0 | 2,1 | 1,4 | 16.0 |
| АИС 100 L2 | 3,0 | 3000 | 84,5 | 0,85 | 7,0 | 2,3 | 2,6 | 1,7 | 20,8 |
| АИС 100 LB2 | 4,0 | 3000 | 86,5 | 0,86 | 7,5 | 2,0 | 2,4 | 1,6 | 23,6 |
| АИС 100 LA4 | 2,2 | 1500 | 81,0 | 0,83 | 6,0 | 2,0 | 2,6 | 2,0 | 20.4 |
| АИС 100 LB4 | 3,0 | 1500 | 81,0 | 0,81 | 6,5 | 2,0 | 2,4 | 1,7 | 25.8 |
| АИС 100 L6 | 1,5 | 1000 | 76,0 | 0,72 | 5,0 | 2,0 | 2,3 | 1,9 | 20,8 |
| АИС 100 LA8 | 0,75 | 750 | 72,5 | 0,71 | 4,0 | 1,5 | 2,0 | 1,5 | 20,5 |
| АИС 100 LB8 | 1,1 | 750 | 76,0 | 0,72 | 4,5 | 1,5 | 2,2 | 1,5 | 24 |
| АИС 90 S4/2 | 1,12 | 1500 | 74,0 | 0,78 | 5,0 | 1,9 | 2,2 | 1,6 | 13,2 |
| | 1,5 | 3000 | 73,0 | 0,85 | 5,0 | 1,9 | 2,0 | 1,5 | |
| АИС 100 L4/2 | 2,2 | 1500 | 79,0 | 0,83 | 6,0 | 1,9 | 2,4 | 1,6 | 21,5 |
| | 2,65 | 3000 | 78,0 | 0,86 | 6,0 | 2,0 | 2,4 | 1,5 | |
| АИС 100 L6/4 | 1,32 | 1000 | 74,0 | 0,68 | 5,0 | 2,3 | 2,5 | 1,5 | 22,2 |
| | 1,6 | 1500 | 74,0 | 0,85 | 5,5 | 1,6 | 2,1 | 1,2 | |
| АИС 100 L8/4 | 0,8 | 750 | 62,0 | 0,55 | 3,0 | 1,7 | 2,0 | 1,6 | 21.1 |
| | 1,32 | 1500 | 75,0 | 0,84 | 5,0 | 1,5 | 2,0 | 1,3 | |

## 7. AIVR-series explosion-proof induction motors

АИВР-series explosion-proof e-motors are made in a cast-iron housing (casing). Explosion protection rate is 1ExdIIBT4 GOST 30852.0. According to the level of explosion protection they are intrinsically safe for IIA, IIB category of explosion mixtures. The motors are powered from industrial grid power frequency of 50Hz and are designed to be used for motor-driven mechanisms of external and internal installations of dangerously explosive types of production of chemical, gas, oil refinery and others allied industries where mixtures of flammable gases, vapors and air may occur.

The nominal values of the motors' main parameters (voltage is 380V, frequency is 50Hz) are shown in Table 16.

Table 16

| Type | P, kW | Standard rotating frequency, rpm | Coefficient of efficiency, % | cos φ | slip, % | Мп/Мн | Mmax/Мн | Mmin/Мн | Iп/Iн | Mass,kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| АИВР 80А2 | 1,5 | 3000 | 82,0 | 0,85 | 4,0 | 2,2 | 2,6 | 1,8 | 6,5 | 25,8 |
| АИВР 80А4 | 1,1 | 1500 | 76,5 | 0,77 | 5,5 | 2,2 | 2,4 | 1,7 | 5,0 | 25,3 |
| АИВР 80А6 | 0,75 | 1000 | 71,0 | 0,71 | 7,5 | 2,1 | 2,2 | 1,6 | 4,0 | 25,0 |
| АИВР 80В2 | 2,2 | 3000 | 83,0 | 0,87 | 4,5 | 2,1 | 2,6 | 1,8 | 6,4 | 28,4 |
| АИВР 80В4 | 1,5 | 1500 | 78,5 | 0,80 | 6,0 | 2,2 | 2,4 | 1,7 | 5,3 | 27,2 |
| АИВР 80В6 | 1,1 | 1000 | 75,0 | 0,74 | 7,5 | 2,2 | 2,3 | 1,8 | 4,5 | 28,7 |
| АИВР 90L2 | 3,0 | 3000 | 84,5 | 0,88 | 4,5 | 2,3 | 2,6 | 1,7 | 7,0 | 37,7 |
| АИВР 90LB2 | 4,0 | 3000 | 86,5 | 0,86 | 5,0 | 2,0 | 2,4 | 1,6 | 7,5 | 40,5 |
| АИВР 90LA4 | 2,0 | 1500 | 81,0 | 0,83 | 5,0 | 2,0 | 2,6 | 2,0 | 6,0 | 36,5 |
| АИВР 90L4 | 2,2 | 1500 | 81,0 | 0,83 | 5,0 | 2,0 | 2,6 | 2,0 | 6,0 | 36,5 |
| АИВР 90LB4 | 3,0 | 1500 | 81,0 | 0,81 | 6,0 | 2,0 | 2,4 | 1,7 | 6,5 | 40,9 |
| АИВР 90L6 | 1,5 | 1000 | 76,0 | 0,72 | 6,5 | 2,0 | 2,3 | 1,9 | 5,0 | 37,1 |
| АИВР 90LA8 | 0,75 | 750 | 72,5 | 0,71 | 6,0 | 1,5 | 2,0 | 1,5 | 4,0 | 36,3 |
| АИВР 90LB8 | 1,1 | 750 | 76,0 | 0,72 | 5,0 | 1,5 | 2,2 | 1,5 | 4,5 | 39,1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| АИВР 90L4/2 | 2,2/2,65 | 1500/3000 | 79,0/78,0 | 0,83/0,86 | 5,0 | 1,9/2,0 | 2,4 | 1,6/1,5 | 6,0 | 38,1 |
| АИВР 90L6/4 | 1,32/1,6 | 1000/1500 | 74,0 | 0,68/0,85 | 5,0 | 2,3/1,6 | 2,5/2,1 | 1,5/1,2 | 5,0/5,5 | 38,8 |
| АИВР 90L8/4 | 0,8/1,32 | 750/1500 | 62,0/75,0 | 0,60/0,86 | 5,5/6,0 | 1,7/1,5 | 2,0 | 1,6/1,3 | 3,0/5,0 | 37,7 |
| АИВР 100S2 | 4,0 | 3000 | 86,5 | 0,86 | 5,0 | 2,0 | 2,4 | 1,6 | 7,5 | |
| АИВР 100S4 | 3,0 | 1500 | 81,0 | 0,81 | 6,0 | 2,0 | 2,4 | 1,7 | 6,5 | |

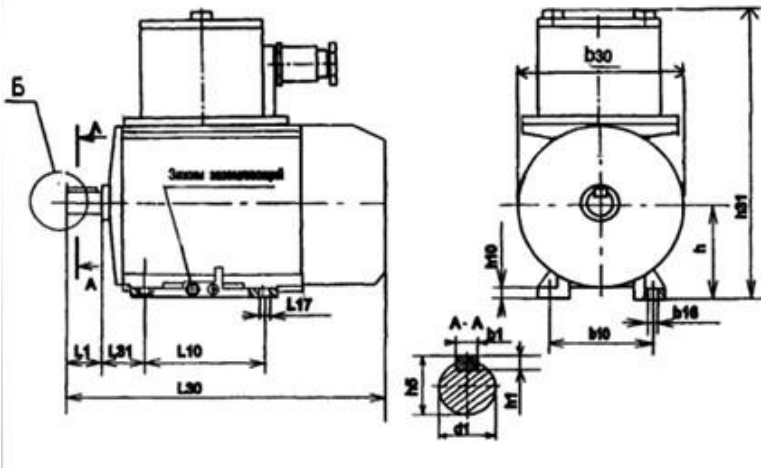



Figure H

Table 17

| Size index | | Standard motor size | | |
|---|---|---|---|---|
| | | АИВР 80 | АИВР 90 | АИВР 100 |
| Overall (maximal) | | | | |
| L30 | | 335 | 357 | 405 |
| b30 | | 175 | 200 | 200 |
| h31 | | 265 | 283 | 295 |
| h37 | | 185 | 193 | 195 |
| Linkage | | | | |
| L1 | | 50 | 50 | 60 |
| L10 | | 100 | 125 | 112 |
| L17 | | 10 | 10 | 12 |
| L31 | | 50 | 56 | 63 |
| L39 | | 0 | 0 | 0 |
| b10 | | 125 | 140 | 160 |
| b16 | | 10 | 10 | 12 |
| h | | 80 | 90 | 100 |
| d1 | | 22 | 24 | 28 |
| d20: | IM2081, IM3041 IM2181, IM3641 | 165 | 215 | 215 |
| | | 100; 115; 130 | 115; 130 | – |
| d22: | IM2081, IM3041 | 12 | 15 | 15 |

| | | | | |
|---|---|---|---|---|
| | IM2181, IM3641 | M6; M8; M8 | M8 | – |
| d24: | IM2081, IM3041<br>IM2181, IM3641 | 200 | 250 | 250 |
| | | 146; 146; 160 | 140; 164 | – |
| d25: | IM2081, IM3041<br>IM2181, IM3641 | 130 | 180 | 180 |
| | | 80; 95; 100 | 95; 110 | – |
| Reference | | | | |
| L20: | IM2081, IM3041<br>IM2181, IM3641 | 3,5 | 4,0 | 4,0 |
| | | 3,0; 3,0; 3,5 | 3,0; 3,5 | - |
| L21 | | 10 | 12 | 12 |
| b1 | | 6 | 8 | 8 |
| h1 | | 6 | 7 | 7 |
| h5 | | 24,5 | 27,0 | 31,0 |

| | | | |
|---|---|---|---|
| h10 | 9 | 10 | 12 |

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