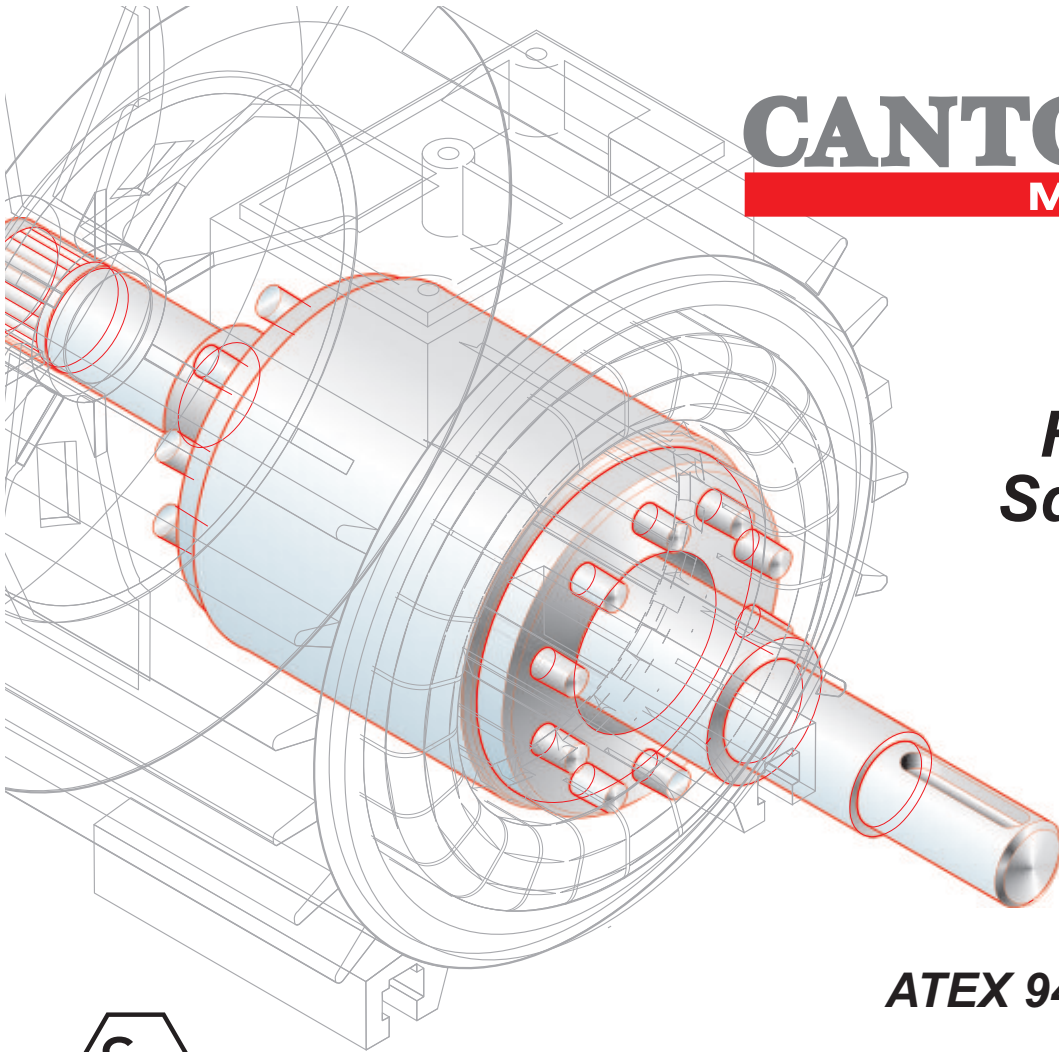
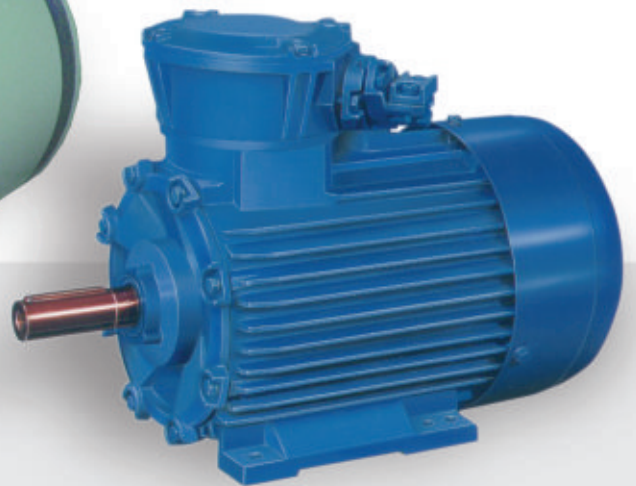
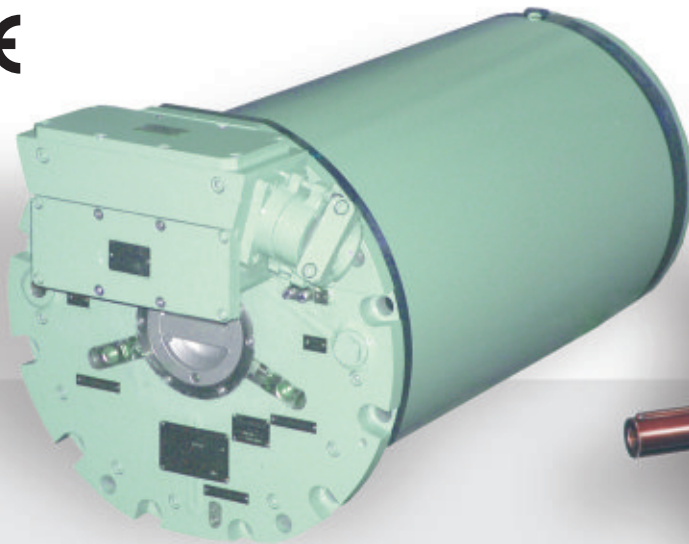


**CANTONI**  
**MOTOR**



***Flame-Proof  
Squirrel Cage  
Motors  
for Mining***

***Certified to  
ATEX 94/9/EC Directive***



***General Information***

## Certificates

**Cantoni Motor SA**  
 ISO 9001  
**KEMA**  
 Since: September 30, 1999  
 Number: 99515

**Besel SA**  
 ISO 9001  
**DQS**  
 Since: July 21, 1995  
 Number: 002887QM

**Indukta SA**  
 ISO 9001  
**KEMA**  
 Since: April 1, 1993  
 ISO 14001  
**KEMA**  
 Since: July 1, 2001  
 Number: 2019916

**Celma SA**  
 ISO 9001  
**Germanischer Lloyd**  
 Since: June 16, 1995  
 Number: QS-243 HH  
 ISO 14001  
**Germanischer Lloyd**  
 Since: November 15, 1999  
 Number: EM-1835 HH

**Emit SA**  
 ISO 9001  
**Polish Register of Ships**  
 Since: January 23, 1997  
 Number: NC-034/00



# Cantoni<sup>®</sup> GROUP

**Cantoni Motor S.A.**  
M. Grażyńskiego 22, 43-300 Bielsko-Biała, Poland  
tel.: +48 33 813 87 00  
fax: +48 33 813 87 01  
[motor@cantonigroup.com](mailto:motor@cantonigroup.com)  
[www.cantonimotor.com](http://www.cantonimotor.com)

*since 1950*



*since 1878*



*since 1954*



*since 1920*

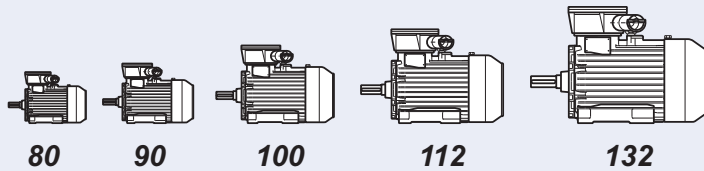


*since 1921*

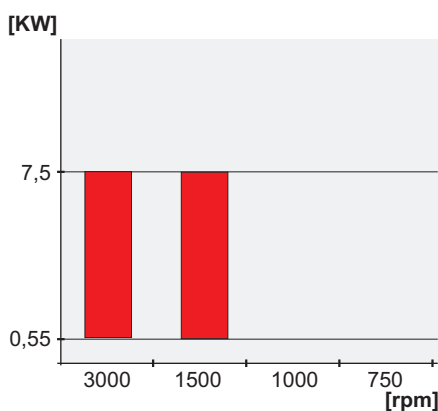


Range of Motors:  
**dSg**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 0,55 - 7,5 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust,

In the spaces (zone 1 or 2) where explosive mixtures of combustible gases and steams of liquid with air can occur, reckoned as subgroups IIA and IIB, Temperature class T1-T5.



**I M2 Exd I**  
**II 2G Exd IIB T5**  
KDB 05ATEX096X

**DESCRIPTION**

- Operating duty S1
- Rated voltage 500 V, frequency 50 Hz
- Insulation class F, degree of protection IP 54
- Ambient temperature -20°C ÷ +40°C
- Terminal box with one cable inlet
- Three current terminals, terminal unit CK1 for testing of PE wire continuity (diode)
- Unattended ball bearing
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1
- The cable inlet and terminals are adapted for connection of copper cable conductors
- The device of the category M2, G2 acc. to Directive 94/9/EC (ATEX)

**CUSTOMISED VERSION**

- Different supply voltage to 1000V
- Frequency 60 Hz
- Degree of protection IP66
- Different ambient temperature
- With thermal protection of winding
- With thermal protection of drive end bearing
- Terminal box with two cable inlets
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter



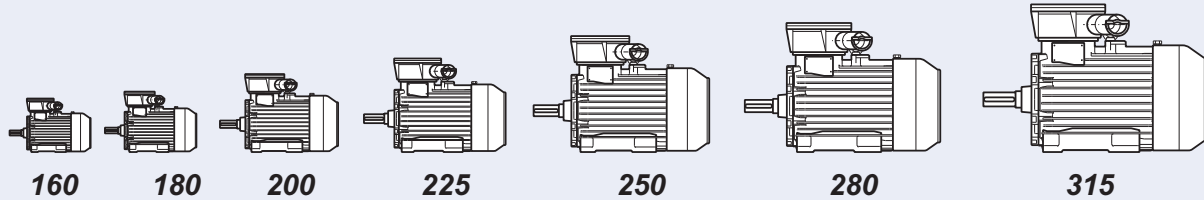
ISO 9001

IEC

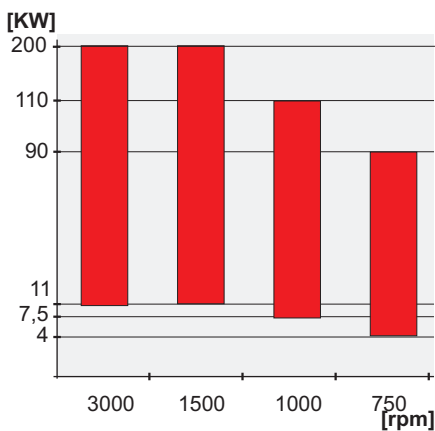
*Detailed technical data on request.*



## AVAILABLE FRAME SIZE



## OUTPUT RANGE: 4 - 200 kW



The motors are designed for working in the mines endangered by the explosion of methane and coal dust, in the spaces (zones 1 or 2) where explosive mixtures of combustible gases and steams of liquid with air can occur, reckoned as subgroup IIA, temperature class T1-T5.



**I M2 Exd I**  
**II 2G Exd IIA T5**  
KDB 04ATEX277X

## DESCRIPTION

- Operating duty S1
- Rated voltage 500 V or 1000V, frequency 50 Hz
- Insulation class F, degree of protection IP 55
- Ambient temperature -20°C + +40°C
- Thermal protection of winding (bimetallic)
- Thermal protection of bearings (bimetallic) frame 160 and 180 - drive end bearing, frame 200-315 both bearings
- Terminal box with one cable inlet equipped with 3 current terminals, 2-4 auxiliary terminals, terminal for PE wire, CK1 unit
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1 and PN-G- 38010:1997 (for 1000V)
- The device of the category M2, G2 acc. to Directive 94/9/EC (ATEX)

## CUSTOMISED VERSION

- Different supply voltage to 1140V
- Frequency 60 Hz
- Dual voltage (500/1000V)
- Degree of protection IP56
- With thermal protection of winding (PTC or Pt100)
- With thermal protection of drive end bearing (PTC or Pt100)
- With heaters in windig
- Terminal box with max 4 cable inlets, 6 current terminals , terminal unit CK2 for testing of PE wire continuity (diode and resistor), with rubber ring seals for other cable diameter
- Adapted for a frequency inverter supply  
(Motors marked with additional letter "f" e.g. dSg315..-EP-f)



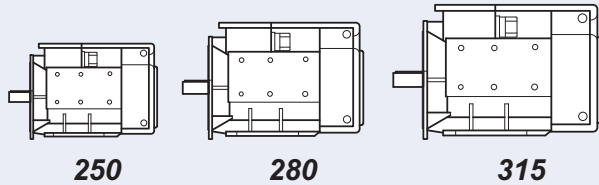
ISO 9001

IEC

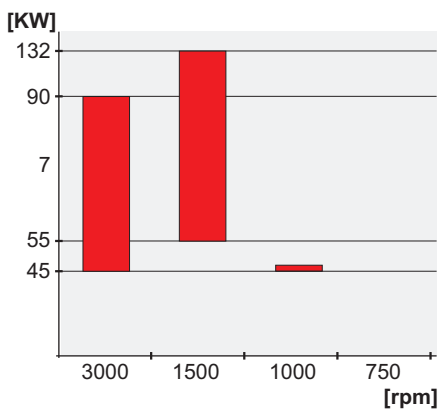
Detailed technical data on request.

Range of Motors:  
**3SGf**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 45 - 132 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust For driving of mining devices (e.g. impactors, conveyors).



**I M2 Exd I**  
KDB 04ATEX050X

**DESCRIPTION**

- Operating duty S1 and S4 60% 40c/h  $J_{ext}/J_M = 1$
- Rated voltage 500 V or 1000V
- Frequency 50 Hz
- Insulation class F
- Degree of protection IP 56
- Ambient temperature  $-20^{\circ}\text{C} \div +40^{\circ}\text{C}$
- Thermal protection of winding and bearings (bimetallic or PTC)
- Terminal box with two cable inlets equipped with 3 current terminals, 4 auxiliary terminals for PE wire, CK1 unit
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1 and PN-G- 38010:1997 (for 1000V)
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection with Pt100
- With heaters in windings
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



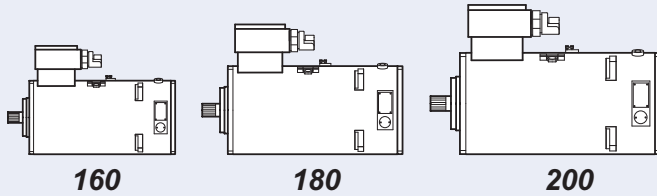
ISO 9001



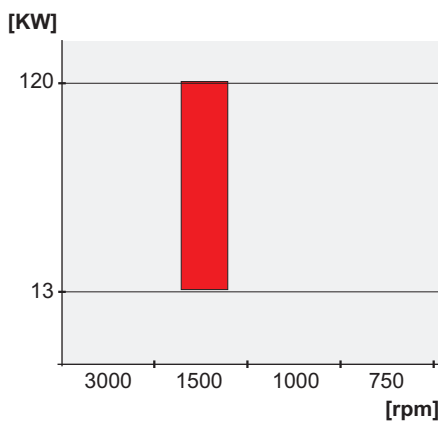
Detailed technical data on request.

Range of Motors:  
**dSKKs, dSKK (Water Cooled)**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 13 - 120 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. For driving of mining devices which work in undergrounds of coal mines.



**DESCRIPTION**

- Operating duty S1 and S4 60% (40 c/h for dSKK200), (80 c/h for dSKK180L4)
- Rated voltage : dSKK - 500 V or 1000V, dSKKs 440V - designed to the power supply with the frequency inverter
- Frequency 50 Hz
- Insulation class F dSKK, H - dSKKs
- Degree of protection IP 66
- Terminal box with one cable inlet equipped with 3 current terminals, 8 auxiliary terminals, 2 terminals for PE wire, CK1 unit and plug of auxiliary cable inlet
- Thermal protection of winding and bearings (bimetallic or PTC)
- Pt100 in winding and drive end bearing (dSKKs)
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V)
- Motors as device from group I category M2 acc. to Directive 94/9/CE

**CUSTOMISED VERSION**

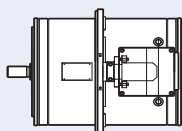
- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection with Pt100 (dSKK)
- With heaters in winding
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



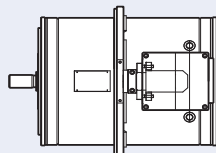
Detailed technical data on request.

Range of Motors:  
**dSKKs 355** (Water Cooled)

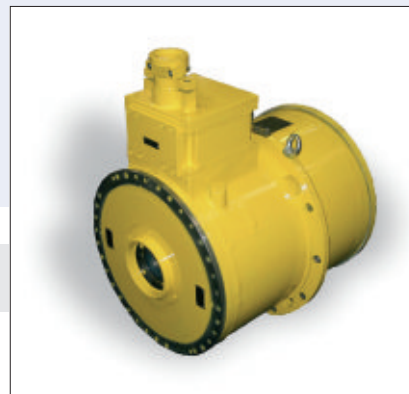
**AVAILABLE FRAME SIZE**



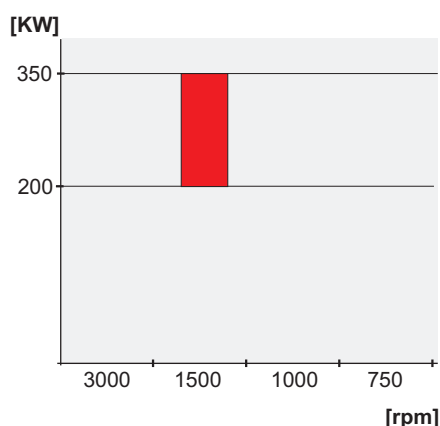
315



355



**OUTPUT RANGE: 250 - 350 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. The motor designed in cooperation with the firm FAMUR S.A. Katowice for driving the organ which moulds a coal- the combine harvesters in undergrounds of coal mines.



**I M2 EExd I**

acc. to EN 50014

**I M2 Exd I**

acc. to EN 60079-0

**DESCRIPTION**

- Operating duty S1
- Rated voltage : 1000V
- Frequency 50 Hz
- Insulation class H
- Degree of protection IP 66
- Terminal box with one cable inlet (for cable's diameter : 46-49 mm) equipped in 3 current terminals, 12 auxiliary terminals, 2 terminals for PE wire, CK1 unit and plug of auxiliary cable inlet
- Thermal protection of winding and bearings (bimetallic or PTC)
- Pt100 in winding and both bearing
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group dSKK 355-4z, dSKKs 355-L4z, EN 60079-0 i EN 60079-1 for I group dSKKs 355-4
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- Terminal box without CK unit
- With rubber ring seals for other cable diameter
- Different versions per customer's specifications



**ISO 9001**

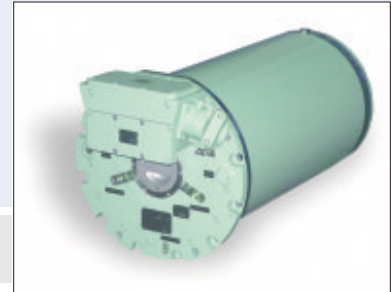
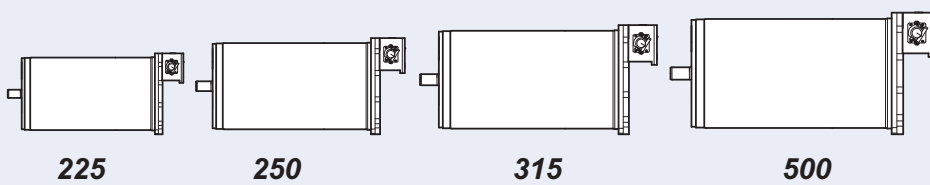
**IEC**

*Detailed technical data on request.*

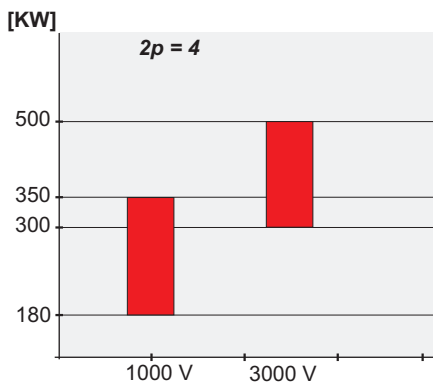


Range of Motors:  
**dSKgw (Water Cooled)**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 180 - 500 kW**



**dSKgw** motors are used for driving the mining organ of combined-cutter-loaders and conveyors under extremely tough conditions in underground headings with class "a", "b", "c" of a methane explosion danger and class "A" and "B" of a coal dust explosion danger. The motors of this range are three-phase squirrel cage induction motors in the explosion-proof execution, Exd I confirmed by ATEX certificate issued by KD "BARBARA".

Depending on clients' requirements dSKgw motors can be adjusted to 1000V, 1140V and 3300V which gives the opportunity to use them both in Polish and in foreign mines.

The motors are cooled with water flowing through ducts in the frame and end shields. Water inlets are placed on the frame next to the terminal box. The water supply is realized by the special connection which consists of armoured hose screwed into the threaded socket and then mounted with a special bush.



**I M2 Exd I**

acc. to EN 60079-1

The motor is equipped with the mechanical overload protection - a safety shaft placed in shaft's hole and which has a contraction and additional notch. Functioning of protection consists in twisting the shaft in notch area that stops the driven machine without damaging the motor.

**DESCRIPTION**

- Exd I according to EN 60079-0, EN 60079-1 and ATEX 100A Directive
- Degree of protection IP55 according to PN-EN 60034-5, insulation class H
- Water cooling, cooling system ICW37 according to PN-EN 60034-6
- Long-lasting anti-corrosive protection - corrosive aggression class C acc. to PN-71/H-04651
- Durable bearings
- Continuous duty S1 and intermittent duty S4-60% (40c/h;  $J_{ext}/J_m=1$ )
- Declutching device with safety shaft
- Durable welded frame with double coat
- Low noise and vibrations

**DUTY CONDITIONS**

- Atmospheric pressure 800 -1070 hPa, ambient temperature 0-40°C
- Relative humidity at 35°C 97-100%
- Altitude <1000m, dustiness <1000mg/m<sup>3</sup>
- Operation in areas with class "a", "b" and "c" of methane explosion danger and class "A" and "B"
- Corrosive aggression class C according to PN-71/H-04651
- Operating voltage (0,95-1,05)  $U_N$
- Allowable inclination of shaft from horizontal position 30°
- Parameters of cooling water (on inlet): max. temp. 30°C, max. stat. pressure 3MPa, flow 15dm<sup>3</sup>/min



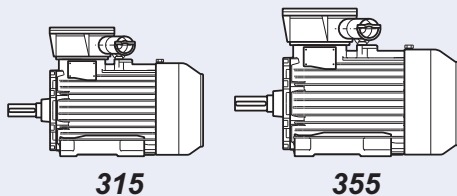
ISO 9001



*Detailed technical data on request.*

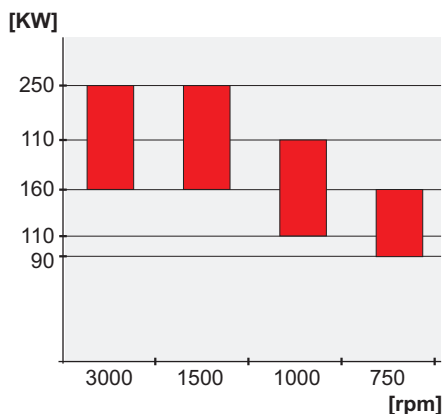
# Range of Motors: ExSg, ExSgm

## AVAILABLE FRAME SIZE



Motor ExSgm 315 M2C 260kW, 1000V, 3000 rpm tested in KD "BARBARA"

## OUTPUT RANGE: 90 - 250 kW



Flameproof motors are used in mines mainly for driving auxiliary machines such as pumps, fans and conveyors. These motors belong to the group I category M2 and group II category 2G according to ATEX directive.

Within this group we offer squirrel cage induction motors for both high and low voltage, the following series: ExSg/ExSgm, ExSh, ExSf (only group II). All the motors are supplied with ATEX certificate issued by KD "Barbara".

ExSg series motors comply with the requirements of ATEX Directive for machines in an explosion-proof execution and belong to the group I M2 and II 2G, the temperature class T4 or lower according to PN-EN 50014:2004, with the flameproof cover "d" according to PN-EN 50018:2002 and are suitable for work in methane mines and other zones and areas where explosive mixtures of flammable gases, steams or vapors with air (group IIB) can occur.



**I M2 EExd I**  
**II 2G EExd IIB T4**

## DESCRIPTION

- Flameproof enclosure - „d” according to PN-EN 50018:2002
- Foot mounted , with cylindrical shaft end - IM1001 according to PN-EN 60034-7:1998
- Degree of protection - IP 54 according PN-EN 60034-5:2004
- Degree of protection of terminal box - IP55
- Cooling system - IC 411 according to PN-EN 60034-6:1999
- Motors meet requirements of PN-EN 60034-1



ISO 9001

IEC

Detailed technical data on request.

Range of Motors:  
**dSKgwp (Water Cooled)**

**AVAILABLE FRAME SIZE**



315



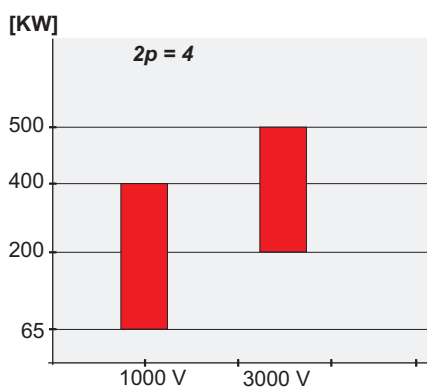
355



500



**OUTPUT RANGE: 65 - 500 kW**



**dSKgwp** series motors are used for driving mining machines and devices especially belt and push-plate conveyors in extremely tough conditions in underground headings with class “a”, “b”, “c” of methane explosion danger and class “A” and “B” of coal dust explosion danger. **dSKgwp** series motors are three phase squirrel cage induction motors in flanged execution for horizontal operation mechanical execution Im3001 (B5) and IM4001 (B10). Motors are available in single speed and two speed execution.

Motors are executed as explosion proof with flameproof cover “d” class **I M2 Exd I** acc. to PN-EN 60079-1.

Depending on clients’ requirements **dSKgw** motors can be adjusted to 1000V, 1140V and 3300V which gives the opportunity to use them both in Polish and in foreign mines.

The motors are cooled with water flowing through ducts in the frame and end shields.

Winding is made of copper wire with class H insulation materials.

Rotor has single or double cage construction with brass and copper bars.



**I M2 Exd I**

Acc. to PN-EN 60079-1

**DESCRIPTION**

- Exd I according to EN 60079-0, EN 60079-1 and ATEX 100A Directive
- Degree of protection IP55 according to PN-EN 60034-5, insulation class H
- Water cooling, cooling system ICW37 according to PN-EN 60034-6
- Long-lasting anti-corrosive protection - corrosive aggression class C acc. to PN-71/H-04651
- Durable bearings
- Single speed motors continuous duty S1 and intermittent duty S4-60% (40c/h;  $J_{ext}/J_M=1$ )
- Two speed motors continuous duty S1 and intermittent duty S4-60% (75c/h;  $J_{ext}/J_M=0,6$ )
- Declutching device with safety shaft
- Durable welded frame with double coat
- Low noise and vibrations

**DUTY CONDITIONS**

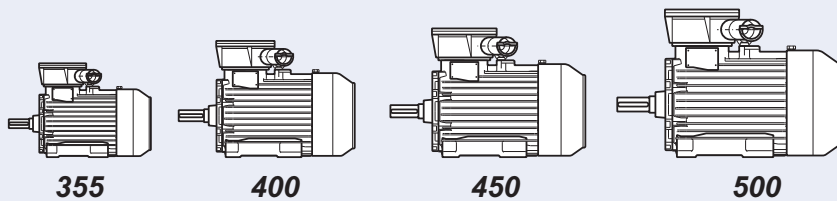
- Atmospheric pressure 800 -1070 hPa, ambient temperature 0-40°C
- Relative humidity at 35°C 97-100%
- Altitude <1000m, dustiness <1000mg/m<sup>3</sup>
- Operation in areas with class “a”, “b” and “c” of methane explosion danger and class “A” and “B”
- Corrosive aggression class C according to PN-71/H-04651
- Operating voltage (0,95-1,05)  $U_N$
- Allowable inclination of shaft from horizontal position 30°
- Parameters of cooling water (on inlet): max. temp. 30°C, max. stat. pressure 3MPa, flow 15dm<sup>3</sup>/min



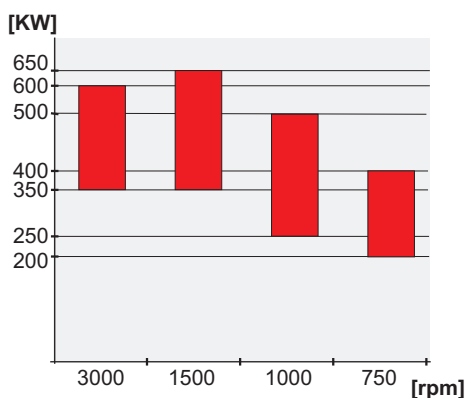
Detailed technical data on request.

Range of Motors:  
**ExSh...s**

**AVAILABLE FRAME SIZE**



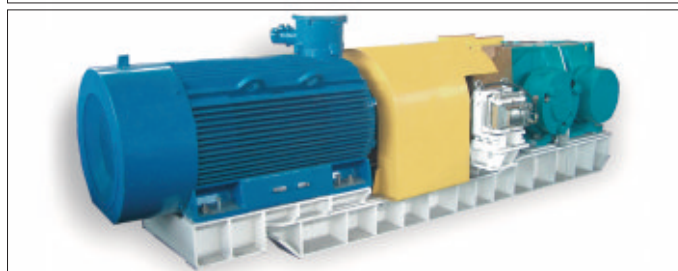
**OUTPUT RANGE: 200 - 650 kW**



ExSh series motors as explosion-proof devices from the group I category M2 and the group II category 2G according to PN-EN 50014:2004 with the flameproof cover „d” in the temperature class T4 or lower according to PN-EN 50018:2002 are suitable for the operation in methane mines and other areas where explosive mixtures of flammable gases, steams or vapors with air (group IIB) can occur.



**I M2 EExd I**  
**II 2G EExd IIB T4**



Driving unit for the conveyor BOGDA-1200A made by Pioma Piotrków Trybunalski. This unit consists of the transmission QHRG-3, hydrodynamic couple, shield brake and electric motor ExSh 355 made by EMIT S.A.

**DESCRIPTION**

- Flameproof protection „d” according to PN-EN 50018:2002
- Foot mounted horizontally with a cylindrical shaft end - IM1001 according to PN-EN 60034-7:1998
- Degree of protection - IP54 according to PN-EN 60034-5:2004
- Degree of protection of terminal box - IP55
- Cooling system - IC 411 according to PN-EN 60034-6:1999
- Motors meet requirements of PN-EN 60034-1

**DUTY CONDITIONS**

- Ambient temperature: from -20°C to +40°C, altitude above sea level: up to 1000m
- Relative humidity at 35C: to 95%
- Dustiness of cooling air not bigger then 10mg/m<sup>3</sup>
- Pollutants of cooling air cannot be chemically aggressive (e.g. fumes of acids or lye)
- Continuous duty S1
- Power supply  $U_N \pm 5\%$ ,  $f_N \pm 2\%$
- Direct start-up

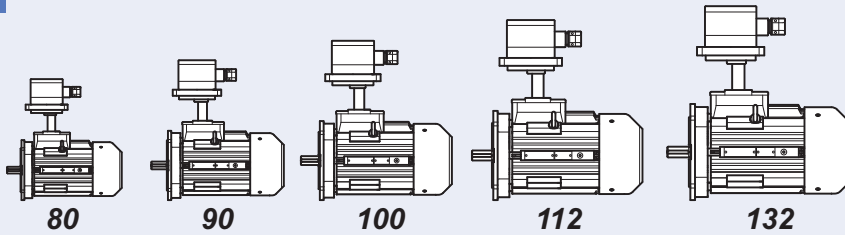


ISO 9001

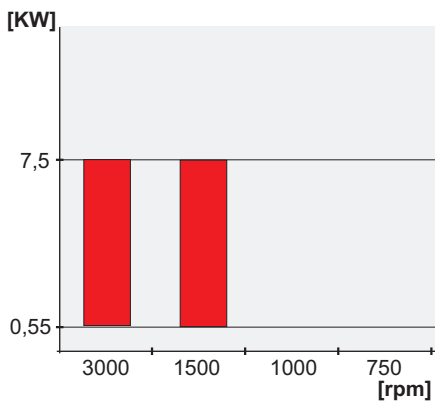


Detailed technical data on request.

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 0,55 - 7,5 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust, for driving the devices (pipes vents) which work in undergrounds of coal mines.



**DESCRIPTION**

- Operating duty S1
- Rated voltage: 500V, frequency 50 Hz
- Insulation class F, degree of protection IP 54
- Terminal box with one cable inlet (connected with the housing with distance tube and special flange) equipped in 3 current terminals, terminal for PE wire, CK1 unit
- Ambient temperature -20°C ÷ +40°C
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1000V
- Frequency 60 Hz
- Degree of protection IP66
- With thermal protection of winding
- With thermal protection of drive end bearing
- Terminal box with two cable inlets
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



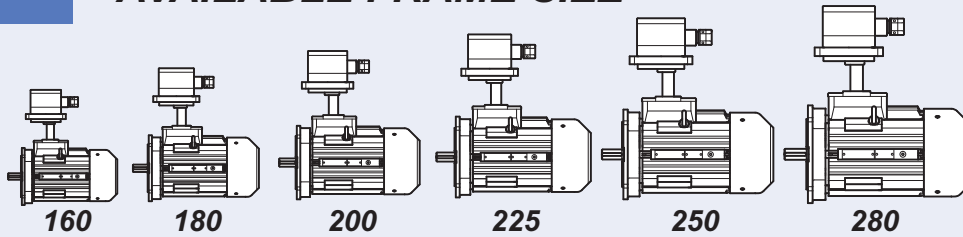
Detailed technical data on request.



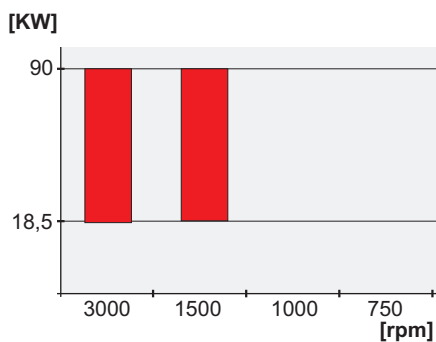
Range of Motors:

**dSOKg-E** (for Axial Fans)

### AVAILABLE FRAME SIZE



### OUTPUT RANGE: 18,5 - 90kW



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. For driving the devices (pipes vents) working in undergrounds of coal mines.



**I M2 EExd I**

acc. to EN 50014

**I M2 Exd I**

acc. to EN 60079-0

### DESCRIPTION

- Operating duty S1
- Rated voltage : 500V or 1000V
- Frequency 50 Hz
- Insulation class F
- Degree of protection IP 56
- Thermal protection of winding (bimetallic)
- Thermal protection of bearings (bimetallic) : frame 160 and 180 - drive end bearing, frame 200-225 both bearings
- Terminal box with one cable inlet ( connected with the housing with distance tube and special flange) equipped with 3 current terminals, 3 or 4 auxiliary terminals , terminal for PE wire, CK1 unit
- Ambient temperature -20°C ÷ +40°C
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group Motors as device from group I category M2 acc. to Directive 94/9/EC

### CUSTOMISED VERSION

- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection of winding and bearings (PTC)
- With thermal protection of drive end bearing (frame 160 and 180)
- With Pt100 in winding or bearings
- With heaters in winding (frame 200 and 225)
- Terminal box with max 4 cable inlets, 6 current terminals and plug
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



ISO 9001

IEC

Detailed technical data on request.



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ISO 9001

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