





# Mining And Surface Certification (Pty) Ltd

2015/021934/07

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT (INCORPORATION THE MINE HEALTH AND SAFETY ACT) AND REGULATION 9 (1) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT

<b>IA CERTIFICATE</b>	MASC MS/19-2032X	<b>Issue</b>	0
<b>Issue Date</b>	18 July 2019	<b>Expiry Date</b>	18 July 2029
<b>*Based on Certificate No</b>	TÜV 15 ATEX 7769X And MASC Report No:19-2032	<b>Issue / Variations / Amendment</b>	0
<b>Requested by</b>	ZEST WEG Group, 47 Galaxy Avenue, Linbro Business Park, Sandton, South Africa		
<b>Manufacturer</b>	ZEST WEG Group, 47 Galaxy Avenue, Linbro Business Park, Sandton, South Africa		
<b>Description</b>	See "Annex A" below		
<b>Equipment</b>	Three phase asynchronous motor series W21, frame sizes 90S/L, 100L, 112M, 132S/M, 160M/L, 180M/L, 200M/L, 225S/M, 250S/M, 280S/M, 315S/M and 355M/L.		
<b>MARKING:</b> Original marking as per certificate * remains applicable. IA number to be added.	<b>Type</b>	W21	
	<b>Ex Marking</b>	Ex db I Mb Ex db IIB T4 Gb Ex db eb IIB T4 Gb  Ex db IIB T3 Gb Ex db eb IIB T3 Gb	
	<b>IA Number Warnings</b>	MASC MS/19-2032X See Base Certificate * and original marking	
<b>Quality Assurance report (QAR) / Notification (QAN):</b>	SGS ATEX 5886		
<b>Compliance:</b>	<p>The equipment as described above has been allocated the rating <u>Explosion Protected</u> utilizing the SANS/IEC Standards:</p> <ul style="list-style-type: none"> <li>• SANS (IEC) 60079-0 2012 General requirements</li> <li>• SANS (IEC) 60079-1 2015 Flameproof enclosures "d"</li> <li>• SANS (IEC) 60079-7 2007 Equipment protection by increased safety "e"</li> </ul>		
<b>Special conditions of safe use "X":</b>	<ul style="list-style-type: none"> <li>• See "Annex A" below</li> </ul>		
<b>Conditions of manufacture:</b>	<ul style="list-style-type: none"> <li>• See "Annex A" below</li> </ul>		
 <b>J Peens</b> <b>TECHNICAL OFFICER</b>		 <b>F du Toit</b> <b>TECHNICAL SPECIALIST</b>	
<p>This certificate covers all units sold as long as the QAR/QAN remains valid.          According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).</p>			

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:  
 SANS 10086 requirements;  
 Any conditions mentioned in the above report  
 Any restrictions and conditions enforced by the chief inspector of mines or chief inspector of factories  
 Any relevant requirements of the MHS Act.

/ . ANNEX A...

This certificate may only be reproduced in full.  
 This certificate is not transferable and remains the property of the issuing body

Mining And Surface Certification (Pty) Ltd  
 Unit 5 Lelyta Park, 45 Jurg Ave, Hennospark Ext 87  
 Centurion, 0157

# IA CERTIFICATE: MASC MS/19-2032X

## Equipment: W21 Three-Phase Asynchronous Motors

### ANNEX A

This document is based on and must be read in conjunction with certificate TÜV 15 ATEX 7769X and MASC Report No:19-2032

#### Description (According to Base Certificate \*)

<b>Description According to Base Certificate</b>	<p>Three-phase induction motor, model W21, squirrel cage rotor, with welded frame in sizes 90S/L, 100L, 112M, 132S/M, 160M/L, 180M/L, 200M/L, 225S/M, 250S/M, 280S/M, 315S/M and 355M/L and equivalent NEMA sizes, mountings according to drawing number 10000365737, type of protection "Ex db" or "Ex db eb", power of 0,37 up to 370 kW, 2 up to 8 poles (according to table 3), nominal voltage up to 1,0kV for the type of protection "Ex db" and up to 690 V for the type of protection "Ex db eb", service factor 1,0 or 1,15, continuous duty S1 up to S9, rotation (according specifications), current (according specifications), temperature rise "B", "F" or "H" being "F" with <math>\Delta T</math> of "B" and "H" with <math>\Delta T</math> of "B" or "H" with <math>\Delta T</math> of "F", bidirectional rotation for motors with and without gasket, cooling system IC 411 in cast iron frame FC-200</p> <p>The motors can work with the use of soft-starter or variable frequency drives with PWM operating characteristics with vector control and minimum switching frequency of 2.5kHz.</p> <p>Optionally, the motors with type of protection "Ex db", frames 90S up to 200L, can be supplied with brake, which is enclosed in a flameproof installed in the back of the motors. The motors may have from 2 up to 8 poles or in a dual polarity 4/2, 8/4, 6/4, 8/2, 12/2, 12/4, 16/4 (according document 10000370408) in 50 and/or 60 Hz. The motors with duty cycles different of S1 and S2 may be designed according to the features of their applications The motors with enclosed brakes have temperature class T3 (ambient temperature from -55 °C up to +60 °C) or T4 (ambient temperature from -55 °C up to +60 °C).</p> <p>The motors can be supplied with certified drain, according to document 10000897119 which are constituted by sintered stainless steel tablet, encapsulated in a brass or stainless steel threaded container, assembled on the flameproof motor enclosure or shields. The motors may be supplied with temperature Sensor Pt100, space heaters, bimetallic thermal protectors (thermostat) and thermistors.</p> <p>See Technical specifications on base certificate</p> <p>A technical assessment was conducted on the motor range to be uses in Group I applications. All technical points in SANS 60079-0 &amp; SANS 60079-1 was evaluated and the motor range complied.</p>
<b>Standard compliance</b>	<p>See Base Certificate *</p> <p>Three-phase induction motor, model W21, squirrel cage rotor, with welded frame in sizes 90S/L, 100L, 112M, 132S/M, 160M/L, 200M/L, 225S/M, 250S/M, 280S/M</p>
<b>Special conditions of safe use ("X")</b>	<ul style="list-style-type: none"> <li>• The use of sealing systems ensures to the motor the degree of protection IP55 or IP56 or IP65 or IP66. In order to ensure the degree of protection higher than IP55 it must be applied sealing component film Lumomoly evenly by paint brush between the joint of frame and endshield, between N.D.E endshield and brake cover and between flanged joint between frame, intermediate base, terminal box and terminal box cover.</li> <li>• For use in low temperatures, to insure the IP56, IP65 or IP66, after each opening, all joints must be lubricated with grease below:</li> <li>• Lumomoly PT/04 for Ta -40°C, or Molykote 033 for Ta - 55°C.</li> <li>• The characteristics of cables and accessories must be suitable for the admitted temperature.</li> <li>• The accessories used for cable entries and holes shall be certified and in compliance to the relevant standards.</li> <li>• The accessories used for cable glands entries and for closing holes shall guarantee a degree of protection IP66 according with EN 60034-5 standard and shall be certified according to EN 60079-0 and EN 60079-1 for motor and terminal box "Ex db" and according with EN 60079-0 and EN 60079-7 to terminal box "Ex db eb".</li> <li>• If cylindrical threads are used, the coupling between the cable entry and the terminal box shall be made according with requirements indicated in the documents annexed to certificate.</li> <li>• The motors can be supplied by main or inverter. When motors are feed by inverters, the derating curve is applied in order to limit the temperature rise within the limit specified for insulation class B.</li> <li>• The shutdown of thermal protection must guarantee the disconnection of mains. The disconnection shall not be automatically resettable.</li> <li>• The declarations of conformity of some parts of the assembly are based on standards which are not state of the art. It is the responsibility of the end user if the assembly shall be used in this level, or if the full documentation (Declaration of Conformity in state of the art) shall be provided by the manufacturers.</li> <li>• Only suitably certified glands may be used. All unused entries must be sealed using suitably certified blanking elements.</li> <li>• Supply to the unit must be done in an Ex manner</li> <li>• Corrosion inhibiting grease in accordance with clause 5.2.1 of SANS60079-1 should be used on flamepaths.</li> </ul>

# IA CERTIFICATE: MASC MS/19-2032X

## Equipment: W21 Three-Phase Asynchronous Motors

Page 3 of 3

<b>Conditions of manufacture</b>	See Base Certificate *
<b>Conditions of Certification</b>	<ul style="list-style-type: none"> <li>• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</li> <li>• The apparatus must be additionally marked with the MASC marking details above.</li> <li>• This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date.</li> <li>• The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate.</li> <li>• The certification on which this IA Certificate is based must remain valid.</li> <li>• The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged.</li> <li>• The Ex quality assurance notification/report for the equipment must remain valid.</li> <li>• Flame paths must have a surface roughness of less than 6.3µm.</li> </ul>
<b>Conclusion:</b>	<ul style="list-style-type: none"> <li>• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate *.</li> <li>• The routine tests for production units according to the Base Certificate * must be complied with as well as batch testing or valid mark scheme.</li> </ul>

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices