

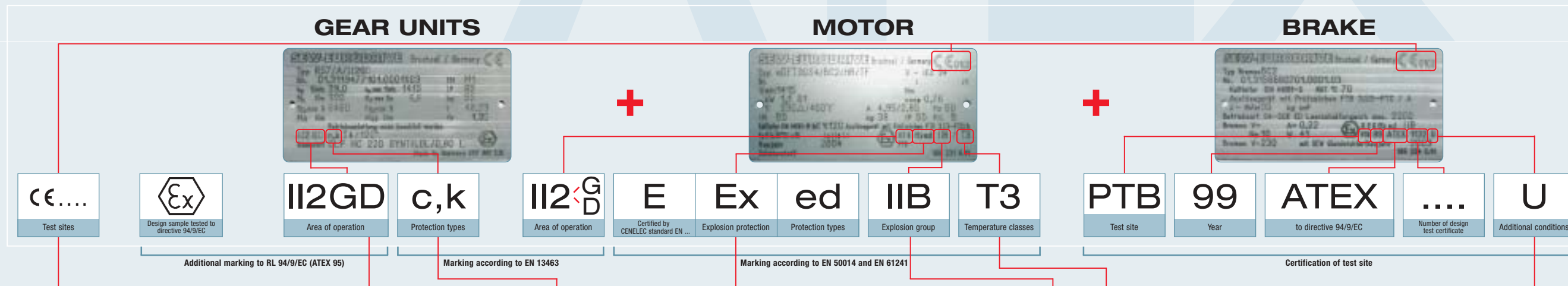
ATEX



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Driving the world



Test sites (excerpt)

Notified bodies	Country	Code no.
LCE	France	0081
INERIS	France	0080
BAM	Germany	0589
DMT (dust)	Germany	CE 0158 (SEW-EURODRIVE)
DGS	Germany	0297
FSA (mechanical components)	Germany	CE 0588 (SEW-EURODRIVE)
IBExU	Germany	0637
PTB (gas/dust)	Germany	CE 0102 (SEW-EURODRIVE)*
TÜV Hannover/Sachsen-Anhalt e.V.	Germany	0032
SEE	Luxembourg	0499
KEMA	Netherlands	0344
SP	Sweden	0402
LOM	Spain	0163
ECCS (BASEEFA)	Great Britain	0600
SCS	Great Britain	0518

* Test site for additional audit to 94/9/EC

Area of operation

for operation outside explosion-proof area

- G = Gas:** Zone 2 and Zone 1
- D = Dust:** Zone 22 and Zone 21 in connection with gear units, motors and gearmotors that meet the requirements as well!

Category	Possible error sources	Prerequisites
I1	Units of category 1 for zones 0 or 20 are not offered by SEW-EURODRIVE	
I2	Liability of unit safety in case of normal operation and in case of possible unit problems (one fault)	Gear units and motors in this category - IG2 (Gas), for operation in zones 1 and 2 - IG2D (Dust), for operation in zones 21 and 22 T 120° max. surface temperature - IG2D (gas/dust), for operation in zone 1, 2 and 21, 22
I3	Liability of unit safety in case of normal operation	Gear units and motors in this category - IG3 (Gas), for operation in zone 2 - IG3D (Dust), for operation in zone 22 - IG3D (gas/dust), for operation in zone 2 and 22

II Δ Surface installations

Protection types

The protection type depends on the method used for explosion protection.

Protection type	Standard CENELEC	Standard IEC	Symbol	Description	Protection principle	Use of the operating device in zone
c	EN 13463-1 + EN 13463-5	—		Constructional safety	Constructional safety through design measures	1 and 2 (21 and 22)
k	EN 13463-1 + EN 13463-8	—		Liquid immersion	Ignition sources cannot become active or are separated from the ignitable atmosphere	1 and 2 (21 and 22)

Protection types for motors (electrical units)	Description	Protection principle	Use of the operating device in zone		
EN 50014	60079-0	—	—		
E Ex d	EN 50014 + 60079-0 + 60079-1		Flameproof enclosure	Prevent spreading of an explosion to outside	1 or 2
E Ex ed	EN 50014 + 60079-0 + 60079-7		Increased safety (s Δ flameproof brake)	Prevent sparks and hot surfaces	1 or 2 temperatures
E Ex i	EN 50014 + 60079-0 + 60079-11		Inherent safety	Power limit	0, 1 or 2
E Ex n / nA	EN 50014 + 60079-0 + 60079-15		Non-incendive	Prevent sparks and hot surfaces – consideration given to fault-free operation only	2
E Ex tD	EN 61241-0 + EN 61241-1		Housing protection	Dust-protected/dust-proof design	21, 22

ed Δ flameproof brake, connection "increased safety"

Explosion group

Use of operating agent = explosion group (not SEW)	Gases and vapors	Temperature classes (classification of gases and vapors according to ignition temperature)
IC	Ammonium Methane Ethane Propane	T1 > 450 °C
IB	Ethyl alcohol Cyclohexane n-Butane	T2 > 300 to ≥ 450 °C
IIA	Town gas Acryl nitril Hydrogen	T3 > 200 to ≥ 300 °C
	Ethyl glycol Hydrogen sulphide	T4 > 135 to ≥ 200 °C
	Acetatedehyde	T5 > 100 to ≥ 135 °C (not SEW)
	Ethyl ether	T6 > 85 to ≥ 100 °C (not SEW)
	Carbon disulphide	

Additional conditions

Conditions	Designation
Equipment can be used without limitations	—
Note special operating conditions	X
Explosion-proof component with part certificate cannot be used by itself. CE conformity will be certified with installation in complete equipment.	U

<p>Higher-level control level for operation outside explosion-proof area</p>	<p>MOVI-TOOLS® Operating software</p>										
<p>Control level for operation outside explosion-proof area</p>	<p>MOVI-PLC® Drive based Motion- and Logic-Control</p>	<p>MOVITRAC® 07 Frequency inverter with integrated keypad, MOVI-TOOLS® software</p>	<p>MOVIMOT® Gearmotors with integrated frequency inverter</p>	<p>Accessories Braking resistor, line filter, line choke, output filter, output choke, plain-text keypad</p>	<p>Drive Electronics: For operation outside explosion-proof area</p> <p>I2E: MOVITRAC® 07, MOVITRAC® 31C, MOVIDRIVE® MDF60</p> <p>I3E: MOVITRAC® 31C, MOVIDRIVE® MDF60</p> <p>I2D: MOVITRAC® 31C, MOVIDRIVE® MDF/MFV60</p> <p>I3D: MOVITRAC® 31C, MOVIDRIVE® MDF/MFV60</p>						
<p>Control cabinet level Drive Electronics for operation outside explosion-proof area</p>	<p>MOVIDRIVE® Drive inverters</p>	<p>Options Fieldbus gateways (PROFIBUS, INTERBUS, INTERBUS LWL, CAN, CANopen, DeviceNet), parameter module, input and output function, absolute encoder card, synchronous operation controller</p>	<p>Interface Either serial RS-485 or optional by means of all commercial fieldbus interfaces</p> <p>Optional SafetyDrive package according to safety category 3 (EN 954-1)</p> <p>Enclosure IP54, optional IP55, IP65</p>								
<p>Field level Motors for operation inside explosion-proof area</p>	<p>AC brake motors Power range 0.25 ... 200.0 kW Frequency 50.0 or 60.0 Hz (standard 50.0 Hz)</p>	<p>CT/CV Asynchronous servomotors Output torques 1,200 1/min - 4 ... 170 Nm 1,700 1/min - 4 ... 162 Nm 2,100 1/min - 2 ... 162 Nm 3,000 1/min - 2 ... 129 Nm</p> <p>Mass moment of inertia Motor 4.6 ... 2,340 kgcm²</p> <p>Mass moment of inertia Brake motor 5.5 ... 2,475 kgcm²</p>	<p>Interface Either serial RS-485 or optional by means of all commercial fieldbus interfaces</p> <p>Optional SafetyDrive package according to safety category 3 (EN 954-1)</p> <p>Enclosure IP54, optional IP55, IP65</p>								
<p>Field level Gear units and Gearmotors for operation inside explosion-proof area</p>	<p>Helical gear units and gearmotors RX series (single stage) Output speeds 114 ... 1,829 1/min Output torque up to 830 Nm Motor power range 0.12 ... 45 kW</p>	<p>Helical gear units and gearmotors R series (two and three stage, also in reduced backlash design) Output speeds 0.05 ... 809 1/min Output torque up to 18,000 Nm Motor power range 0.09 ... 169 kW</p>	<p>Parallel shaft helical gear units and gearmotors F series (two and three stage, also in reduced backlash design) Output speeds 0.1 ... 522 1/min Output torque up to 18,000 Nm Motor power range 0.12 ... 220 kW</p>	<p>Helical-bevel gear units and gearmotors K series (two stage, also in reduced backlash design) Output speeds 0.1 ... 397 1/min Output torque up to 4,000 Nm Motor power range 0.12 ... 220 kW</p>	<p>Helical-worm gear units and gearmotors S series (two stage) Output speeds 0.1 ... 329 1/min Output torque up to 70 Nm Motor power range 0.12 ... 1.1 kW</p>	<p>Spirioplan® gearmotors Spirioplan® series (single stage) Output speeds 8 ... 329 1/min Output torque up to 70 Nm Motor power range 0.12 ... 1.1 kW</p>	<p>Low backlash planetary servo gear units - PS.F/BSK.F (solid shaft) in 8 sizes Output torque 55 ... 3,000 Nm</p> <p>Low backlash helical-bevel servo gear units - BS.F / BSK.F / BSB.F / BSH.F in 6 sizes Output torque 40 ... 1,500 Nm</p>	<p>Wide-belt variable speed gearmotors VARIBLOC® Max. motor power 0.75 ... 45 kW Possible force flow U and U+2 Max. setting range 4:1 ... 8:1</p>	<p>Friction disc variable speed gearmotors VARIMOT® Max. motor power 1.1 ... 11 kW Max. setting range 4:1 + 5:1</p>	<p>Input components: - IEC/NEMA adapter, - Adapter with torque limiting coupling AR, - Output shaft assembly AD, - Servo adapter AQA</p> <p>[Designation: I2 GD c.k T4/T120 °C (Exception AR: I3 GD c.k T3/T140 °C)]</p>	<p>Gear units: For operation inside explosion-proof area</p> <p>I2E6: Helical, parallel shaft helical, helical-bevel and helical-worm gear units, SPIROPLAN® gear units, VARIMOT®, VARIBLOC®, Low backlash planetary servo gear units and helical-bevel servo gear units</p> <p>I3E6: Helical, parallel shaft helical, helical-bevel and helical-worm gear units, SPIROPLAN® gear units, VARIMOT®, VARIBLOC®, Low backlash planetary servo gear units and helical-bevel servo gear units</p> <p>I3D: MOVIMOT® gearmotors with integrated frequency inverter (MIM33...MIM30)</p> <p>Exception: * Size W10</p> <p>Gear units and motors of this series are also available in explosion-proof design conforming to guideline 94/9/EC.</p>