

ATEX

RICHTLINIE 94/9/EC



RC - RD - Helical speed reducers
RS - RT - Worm gear boxes
RP - XA - One stage speed reducers
VR - Speed variators



EQUIPMENT FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES

On 1st July 2003, the Directive 94/9/EC (ATEX - ATmosphères EXplosives) became effective and enforces on equipment and systems for use in potentially explosive atmospheres in the territory of the European Community.

The Directive relates not only to electrical equipment, but also to all kinds of machines, materials, apparatus, fixed or mobile devices, control components and instrumentation thereof and detection or prevention systems which, separately or jointly, are intended for the production, transport, storage, measurement, control and conversion of energy, or the processing of materials and which are capable of causing an explosion through their own potential source of ignition.

The environments (petrochemical, pharmaceutical, cosmetic, painting manufacturing, texture dyeing, paper production, woodworking, etc) where basically power transmission equipment are installed, are involved by the Directive ATEX and therefore, speed reducers are included both as geared motors and gearboxes alone.

The Series ATEX of VARVEL units identified by the following codes

- Series RC “ATEX 03RC”
- Series RD “ATEX 03RD”
- Series RP “ATEX 03RP”
- Series XA “ATEX 03XA”
- Series RS “ATEX 03RS”
- Series RT “ATEX 03RT”
- Series VR “ATEX 03VR”

are according with the Directive ATEX and therefore, qualified to installation in areas of Group II, Category 2 and 3 with explosion danger in presence of gas (Zone 1 or Zone 2) and of combustible dust (Zone 21 or Zone 22).

According with the Directive ATEX, the gear boxes of Series VARVEL-ATEX are marked

II 2 GD ck IP66

T_{max}=120°C or

T_{max}=135°C T_{amb} -20/+55 °C

and variator Series VARVEL-ATEX

II 2 GD cb IP66

T_{max}=185°C or

T_{max}=200°C T_{amb} -20/+55 °C

The relevant Technical Files are deposited at Notified Body of European Community.

DIRECTIVE 94/9/EC (ATEX)



EQUIPMENT FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES

The gearboxes VARVEL-ATEX are delivered according to Directive ATEX and therefore fit to be installed into equipment falling in the **not shaded** boxes of the following table

GROUP	CATEGORY	Gas	ZONE	Dust	TEMPERATURE CLASS
I (a)	M1 (b) M2 (c)				
II (b)	1 (e)	G (0)		D (20)	
	2 (f)	G (1)		D (21)	T4 (Reducers)
	3 (g)	G (2)		D (22)	T3 (Variators)
PROTECTION CLASS		c, k (Reducers) c, b (Variators)		IP 66	

<u>Group, Category, Zone</u>	<u>Surface max. temperature</u>	<u>Design features</u>
(a) - Explosive atmosphere (Mines)	T1 450 °C	b - Trigger Source Control "b"
(b) - Working equipment	T2 300 °C	c - Construction Safety "c"
(c) - Not working equipment	T3 200 °C	k - Dipping in liquid "k"
(d) - Presence of explosive gas or dust (Surface industries)	T4 135 °C	
(e) - Continuous presence	T5 100 °C	
(f) - Discontinuous presence	T6 85 °C	
(g) - Occasional presence	at T _{amb} of 40 °C	

TEMPERATURE CLASS FOR DUSTS

Temperature Class for Gearbox ≤ T_{amm}

1)	Firing Temperature ↓	Cloud T _{CL}	Layer T _{5mm}
2)	Safety Temperature ↓	$T_{S1} = \frac{2}{3} T_{CL}$	$T_{S2} = T_{amm} \times 75K$
3)	Surface max. Temperature	$T_{amm} = \min \{ T_{S1} : T_{S2} \}$	

T_{CL} - Class Temperature T_{S1} - Cloud Safety Temperature K - Degrees Kelvin
 T_{5mm} - 5 mm Layer Temperature T_{S2} - Layer Safety Temperature T_{amm} - Admissible Temperature

VARVEL - ATEX

DIRECTIVE 94/9/EC (ATEX)



TEMPERATURE CLASS FOR GASES

GROUP	T1	T2	T3	T4	T5	T6
I *	Methane (firedamp)					
IIA	Acetone Ammonia Benzene Benzol Carbon-monoxide Chloroethyl Chloromethyl Ethane Ethyl acetate Methane Methanol Methyl-acetate Naphtalene Propane Toluene Xylene	Acetic anhydride Amyl alcohol Butyl Cyclohexanone Ethyl alcohol Isobutyl alcohol Isopropane Liquid gas Methyl alcohol Monoamylacetate Natural gas n-Butyl cetate n-Buthyl alcohol Propyl acetate	Cyclohexane Cyclohexanole Decane Gas oil Heptane Hexane Kerosene Mineral naphtha Pentane Oil**	Acetaldehyde Ether		
IIB	Gas coke Water gas	1.3-butadiene Ethylene oxide Ethyl benzene Ethylene	Isoprene Oil** Sulphydic acid	Dyethyl ether		
IIC	Idrogeno	Acetilene				Carbon disulphide Ether nitrate

* - Products VARVEL-ATEX not supplied

** - According with chemical composition

ATTESTATO DI CONFORMITÀ
CERTIFICATE OF CONFORMITY

VARVEL - ATEX



VARVEL SpA
Via 2 Agosto 1980, 9
40056 Crespellano BO
Italy

dichiara sotto la propria responsabilità
che il prodotto

Riduttori/Gearboxes Serie/s RS

declares under sole responsibility that
the product

FRS40 IEC63B14 1/28 S/No.27333

al quale questa dichiarazione si riferi-
sce, è conforme alla Direttiva

94 / 9 / EC (ATEX).

*to which this declaration relates to,
complies with the Directive*

Tech. File **ATEX03RS**

**Ex II 2 GD ck
IP66**

T_{max} 135 °C
T_{amb} -20 °C ÷ +55 °C

VARVEL
www.varvel.com

**FRS40
R28 SN:27333**

LONG LIFE LUBRICATION
MADE IN ITALY

La conformità è stata verificata sulla
base dei requisiti delle norme o dei
seguenti documenti normativi:

**EN 1117-1
EN 13473-1
EN 13463-5
EN 13463-6
EN 13463-8**

*The conformity is under observance
of the following standard documents*

Modo di protezione

Type of protection

Ex II 2 GD ck IP66

T_{max} = 135°C T_{amb} -20/+55°C

Il File Tecnico

The Technical File

ATEX 03RS

è stato depositato presso l'Organismo
Notificato de deposito del fascicolo
tecnico

*was deposited at the Notified Body of
Technical File Deposit*

0080 INERIS

F-60550 Verneuil en Halatte

Firma autorizzata
(Funzione: Presidente)
*Authorized signature
(Function: President)*

VARVEL SpA

(Francesco Berselli)

Luogo e data dell'emissione
Place and Date of issue

Crespellano,