ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Industrie Service

EC type-examination certificate

Certificate no.:	ABV 777/4
Notified body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Germany
Applicant/ Certificate holder:	WARNER Electric Europe 7, rue de Champfleur BP 20095 49124 St. Barthelemy D'Anjou - France
Date of application:	2010-10-20
Manufacturer of the test sample:	WARNER Electric Europe 7, rue de Champfleur BP 20095 49124 St. Barthelemy D'Anjou - France
Product:	Braking device acting on shaft of the traction sheave, as part of the protection device against overspeed for the car moving in upwards direction
Type:	ERS VAR15-02 FT2110/_ _ _ _
Test laboratory:	TÜV SÜD Industrie Service GmbH Prüflaboratorium für Produkte der Fördertechnik Prüfbereich Aufzüge und Sicherheitsbauteile Westendstr. 199 80686 München - Germany
Date and number of the test report:	2010-12-03 ABV 777/4
EC-Directive:	95 / 16 / EC
Result:	The safety component conforms to the essential safety requirements of the Directive for the respective scope of application stated on page 1 - 2 of the annex to this EC type-examination certificate.
Date of issue:	2010-12-06

Certification body for lifts and safety components
Identification number: 0036

Christian Rührmeyer

TÜV SÜD Industrie Service GmbH 00 36 Benannte Stelle

TÜV®

Industrie Service

Annex to the EC type-examination certificate no. ABV 777/4 dated 2010-12-06

1 Scope of Application

1.1 Permissible brake force when the braking device acts on the shaft of the traction sheave while the car is moving upward — 2231 – 3111 N

The brake force refers to a single brake on the middle friction diameter of the brake disc (rotor).

1.2 Maximum tripping speed of the overspeed governor and maximum rated speed

The maximum tripping speed and the maximum rated speed must be calculated on the basis on the brake disc maximum tripping speed and maximum rated speed (gliding speed) as outlined in sections 1.2.1 and 1.2.2 taking into account the middle friction diameter of the brake disc, traction sheave diameter and car suspension.

$$v = \frac{D_{TS} = v_{BT}}{D_{BS} \times i}$$

v	=	Tripping (rated) speed (m/s)
D_{TS}	=	Diameter of the traction sheave from rope's centre to rope's centre (m)
D_{BS}	=	Middle friction diameter of the brake disc (m)
v_{BT}	=	Gliding speed on the middle friction diameter of the brake disc (m/s)
i	=	Ratio of the car suspension

1.2.1 Maximum tripping speed (gliding speed) on the middle friction diameter of the brake disc — 6.50 m/s

1.2.2 Maximum rated speed (gliding speed) on the middle friction diameter of the brake disc — 5.65 m/s

2 Conditions

2.1 In order to comply with the redundancy required in Section 9.10.2 of EN 81-1, at least two braking circuits (single brake actuator) must be used.

Where more than two braking circuits are used, redundancy requirements necessitate that a sufficient braking effect as outlined in section 12.4.2.1 of EN 81.1 is still maintained if one of the braking circuit fails. It is not assumed that two braking circuits will fail simultaneously

2.2 Since the brake device represents only a part oft the protection device against overspeed for the car moving in upwards direction an overspeed governor as per EN 81-1, paragraph 9.9 must be used to monitor the upward speed and the brake device must be triggered (engaged) via the overspeed governor's electric safety device.

Alternatively, the speed may also be monitored and the brake device engaged by a device other than an overspeed governor as per paragraph 9.9 if the device shows the same safety characteristics and has been type tested.

2.3 In order to recognise the loss of redundancy the movement of each brake circuit (each anchor plate) is to be monitored separately and directly (e.g. by micro switches). If a brake circuit fails to engage (close) while the lift machine is at standstill, next movement of the lift must be prevented.

2.4 In cases where the lift machine moves despite the brake being engaged (closed), the lift machine must be stopped at the next operating sequence at the latest and the next movement of the lift must be prevented. (The car may, for example, be prevented from travelling by querying the position of the micro switch which is used to monitor the mechanical movement of the brake circuits, should both brake circuits fail to open).

Note: The English text is a translation of the German original. In case of any discrepancy, the German version is valid only.

2.5 According to EN 81-1, paragraph 9.10.4 d a braking device must act directly on the traction sheave or on the same shaft on which the traction sheave is situated in the immediate vicinity thereof.

If the braking device does not act in the immediate vicinity of the traction sheave on the same shaft on which the traction sheave is situated, the standard is not complied with. In cases involving shaft failure in the extended area between the traction sheave and the braking device, safety would no longer be ensured by the latter if the lift car made an uncontrolled upward movement.

Shaft failure in the extended area must therefore be ruled out by appropriate design and sufficient dimensioning. In order to eliminate or reduce influencing factors which may lead to failure wherever possible, the following requirements must be satisfied:

- Minimization of bending length between traction sheave and braking device or traction sheave and the next bearing (the next bearing must form part of the drive unit)
- Static defined bearing (e. g. 2-fold borne shaft) otherwise measures are required to obtain a defined loading
- As far as possible, prevention of a reduction in load-bearing capacity in the area of reversed bending stress (reduction in load-bearing capacity caused, for example, by stress concentration and cross-sectional reductions)
- Between traction sheave and braking device the shaft must be continuous (made from one piece)
- Cross-sectional influences on the shaft are only permitted if they act on the following connections: traction sheave – shaft, braking device – shaft, torque of the transmitting component – shaft (situated between traction sheave and braking device).

The manufacturer of the drive unit must provide calculation evidence that the connection traction sheave - shaft and the shaft itself is sufficiently safe. If necessary, evidence must be provided for the intended measures, too (see static undefined bearing).

The calculation evidence must be enclosed with the technical documentation of the lift.

3 Remarks

3.1 The permissible brake forces must be applied to the lift system in such a manner that they do not decelerate more than 1 g_n, if the empty car is moving upwards.

3.2 In the scope of this EC type-examination it was found out, that the brake device also functions as a brake for normal operation, is designed as a redundant system and therefore meets the requirements to be used also as a part of the protection device against overspeed for the car moving in upwards direction.

This EC type-examination only refers to the requirements pertaining to brake devices as per EN 81-1, paragraph 9.10.

Checking whether the requirements as per paragraph 12.4 have been complied with is not part of this EC type-examination.

3.3 In order to provide identification, information about the basic design and it's functioning and to show which parts have been tested pertaining to the tested and approved type, drawing no. I-1 12 106967 with certification stamp dated 2010-12-06 is to be enclosed with the EC type-examination certificate and the Annex thereto. The installation conditions and connection requirements are presented or described in separate documents (e.g. assembly and operating instructions).

3.4 The EC type-examination certificate may only be used in connection with the pertinent annex and the list of the authorized manufacturers (according to enclosure). This enclosure shall be updated and re-edited following information of the certificate holder.

Industrie Service

Enclosure of EC type - examination certificate No. ABV 777/4 dated 2010-12-06

Authorised manufacturer – Production sites (Stated: 2010-05-03):

WARNER Electric Europe
7, rue de Champfleur
BP 20095
49124 St. Barthelemy D'Anjou - France

Altra Industrial Motion Shenzhen Co. Ltd.
Dabo Industry Zone
18 Huanzhen Road
Bogang County, Shajing Town
Baoan District, Shenzhen City
518104 Guangdong province - China (PRC)

- END OF DOCUMENT -

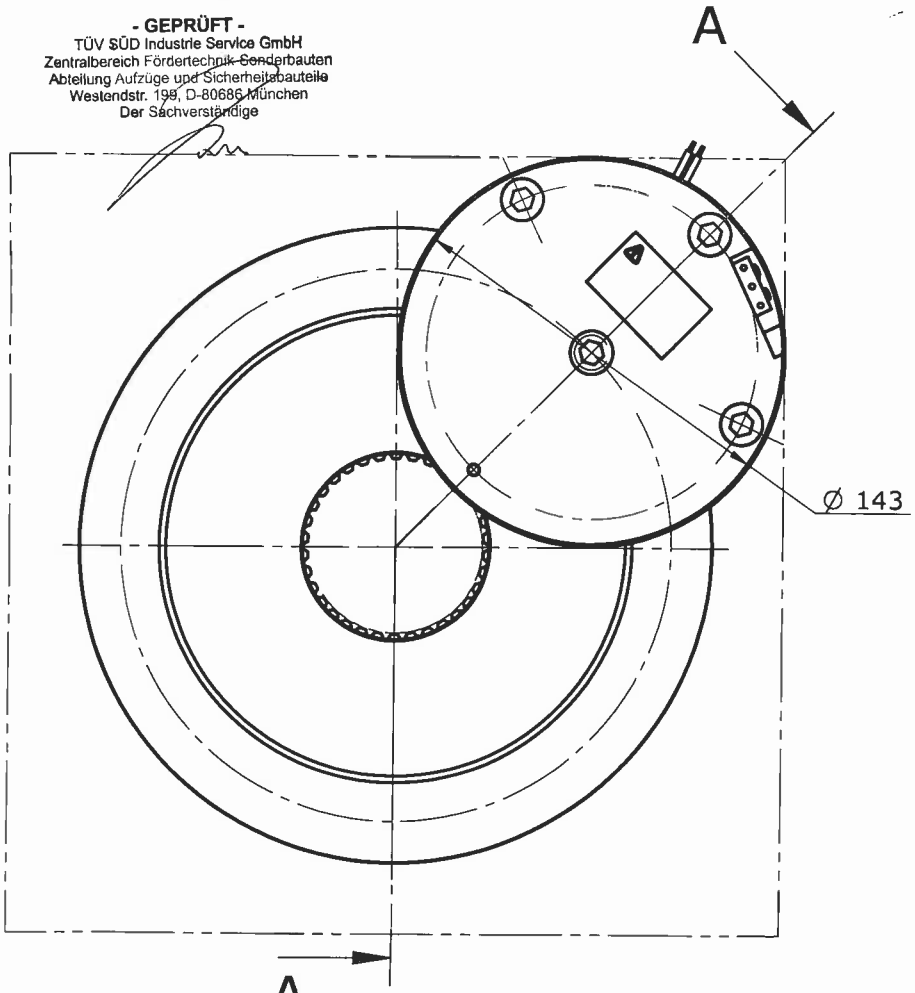
Base: Letter of WARNER Electric Europe dated 2009-12-02

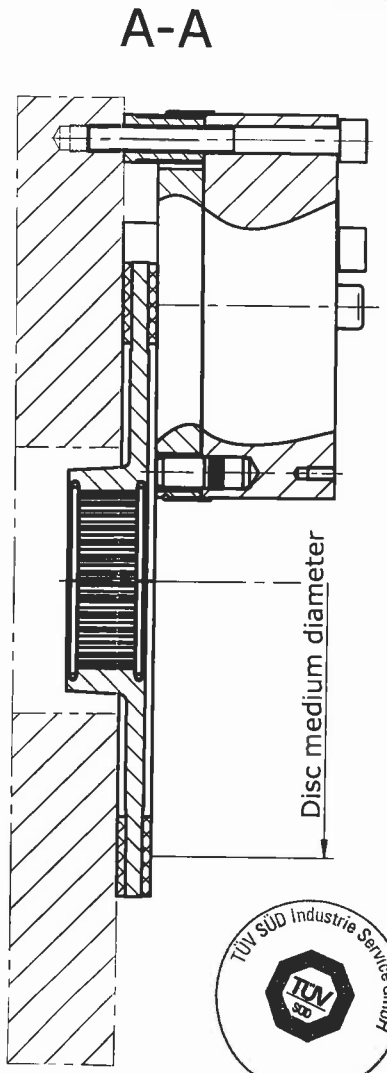
0 6. Dez. 2010

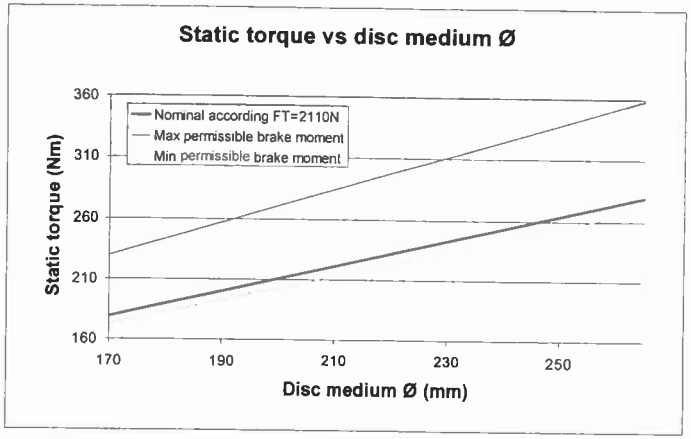
- GEPRÜFT -
TÜV SÜD Industrie Service GmbH
Zentralbereich Fördertechnik-Sonderbauten
Abteilung Aufzüge und Sicherheitsbauteile
Westendstr. 199, D-80686 München
Der Sachverständige

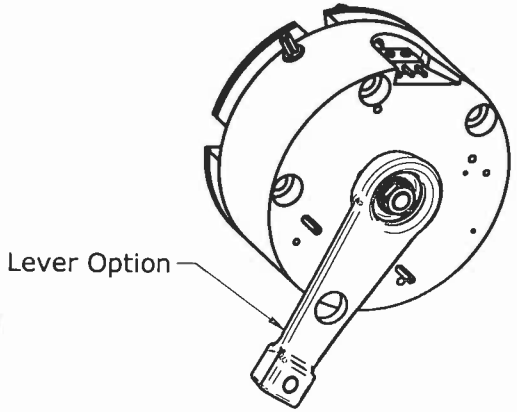
Les cotes sans indication de tolérances sont des cotes nominales.
Untoleranced dimensions are nominal dimensions.

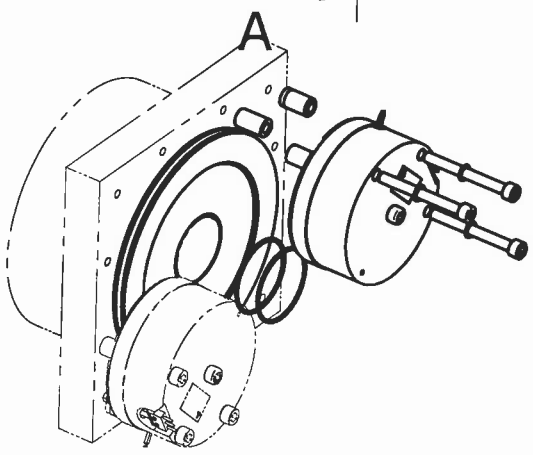
NOTES

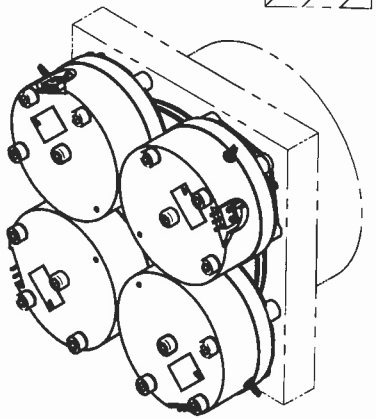












TUV diffusion

	B	Type description updated	11-10-10	JC J	GFE
	A	Drg updated with new modifs	28-06-10	JC J	GFE
FM	LT	REVISION	DATE	By	Ch.

Client/customer:

Ms (Nm) :
Md (Nm) :
n Md (min-1) :
n max (min-1) :
U (Vdc) :
P20°C (W) :
Insulation class (°C):

Customer ref :
Dimensions in mm
Manual/Notice : SM 382
Mass :
Scale: /

Drawn : MENAGER Date: 07-11-05
Checked: Date:

Warner Electric Europe

Design.: **Frein électromagnétique**
Electromagnetic brake

Type: **ERS VAR15-02 FT2110/- - - -**

N° **I-1 12 106967** B

CAD SE A3

Warner Electric-Europe

WARNER ELECTRIC EUROPE
7 rue Champfleurs
49 182 Saint Barthelemy d'anjou

declare that the mentioned products have been developed, constructed and manufactured in sole responsibility and in conformity with the below mentioned EC directive.

Contruction sample Inspected

Product/type	ASRI				
ERS VAR07 SZ250/—	1	50			
ERS VAR07 SZ300/—	1	55	56		
ERS VAR07 SZ400/—	1	51			
ERS VAR07 SZ420	1	62			
ERS VAR07 SZ600	1	63			
ERS VAR07 SZ800/—	1	59			
ERS VAR08 SZ1000/....	1	32			
ERS VAR08 SZ1050/—	1	54			
ERS VAR08 SZ1700/....	1	8	9		
ERS VAR08 SZ550/...	1	18			
ERS VAR08 SZ800/...	1	16			
ERS VAR08 SZ900/...	1	21			
ERS VAR09 SZ1000/—	1	48	49		
ERS VAR09 SZ1700/....	1	10	11	12	

Product/type	ASRI				
ERS VAR09 SZ200/—	1	52	53		
ERS VAR09 SZ300/—	1	57	58		
ERS VAR09 SZ550/...	1	19			
ERS VAR09 SZ600/—	1	45	46	47	
ERS VAR09 SZ800/....	1	24	25		
ERS VAR09 SZ900/...	1	22			
ERS VAR10 SZ1000/....	1	20			
ERS VAR10 SZ1010/—	1	61			
ERS VAR10 SZ1600/....	1	23			
ERS VAR10 SZ2500/....	1	13	14		
ERS VAR10 SZ5000/....	1	17			
ERS VAR11-01	1	6	7		
ERS VAR11-01 Ft=3600N	1	27	28	29	
ERS VAR11-01 Ft=4100N	1	33	34		

Product/type	ASRI				
ERS VAR11-02	1	15			
ERS VAR12-01	1	2	3	4	5
ERS VAR12-03 Ft=2580N	1	43	44		
ERS VAR12-04 Ft=2580N	1	30	31		
ERS VAR14-01	1	26			
ERS VAR15-01 Ft=2950N	1	35	36	37	
ERS VAR15-02 Ft=2110N	1	38	39	40	
ERS VAR15-02 FT2110/---	1	41	42		
ERS VAR15-06 FT=700/---	1	65			
ERS VAR15-11 FT=3000N	1	60			
ERS VAR15-11 A Ft=2500/---	1	64			

Applied standards, regulations and Inspections (ASRI)

1	**DIN EN81-01/2**	05/2005	Safety rules for the construction and installations of lift
2	**ABV 588**	16/08/2001	TÜV Association for technical inspection EC-Certification number 0036
3	**ABV 588/1**	25/10/2005	TÜV Association for technical inspection EC-Certification number 0036
4	**ABV 588/2**	11/01/2008	TÜV Association for technical inspection EC-Certification number 0036
5	**ABV 588/3**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
6	**ABV 589/1**	18/08/2004	TÜV Association for technical inspection EC-Certification number 0036
7	**ABV 589/3**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
8	**ABV 590/1**	12/02/2003	TÜV Association for technical inspection EC-Certification number 0036
9	**ABV 590/2**	29/11/2010	TÜV Association for technical inspection EC-Certification number 0036
10	**ABV 591**	08/08/2001	TÜV Association for technical inspection EC-Certification number 0036
11	**ABV 591/1**	19/11/2007	TÜV Association for technical inspection EC-Certification number 0036
12	**ABV 591/2**	29/11/2010	TÜV Association for technical inspection EC-Certification number 0036
13	**ABV 592/1**	12/02/2003	TÜV Association for technical inspection EC-Certification number 0036
14	**ABV 592/2**	29/11/2010	TÜV Association for technical inspection EC-Certification number 0036
15	**ABV 594/1**	18/11/2004	TÜV Association for technical inspection EC-Certification number 0036
16	**ABV 603/1**	12/02/2003	TÜV Association for technical inspection EC-Certification number 0036
17	**ABV 604/1**	12/02/2003	TÜV Association for technical inspection EC-Certification number 0036
18	**ABV 723**	08/08/2003	TÜV Association for technical inspection EC-Certification number 0036
19	**ABV 724**	08/08/2003	TÜV Association for technical inspection EC-Certification number 0036
20	**ABV 725**	16/04/2003	TÜV Association for technical inspection EC-Certification number 0036
21	**ABV 726**	08/08/2003	TÜV Association for technical inspection EC-Certification number 0036
22	**ABV 727**	08/08/2003	TÜV Association for technical inspection EC-Certification number 0036
23	**ABV 728**	16/04/2003	TÜV Association for technical inspection EC-Certification number 0036
24	**ABV 729**	10/02/2004	TÜV Association for technical inspection EC-Certification number 0036
25	**ABV 729/1**	15/01/2008	TÜV Association for technical inspection EC-Certification number 0036
26	**ABV 758**	16/02/2005	TÜV Association for technical inspection EC-Certification number 0036
27	**ABV 769**	14/10/2005	TÜV Association for technical inspection EC-Certification number 0036
28	**ABV 769/1**	11/01/2008	TÜV Association for technical inspection EC-Certification number 0036
29	**ABV 769/2**	05/05/2010	TÜV Association for technical inspection EC-Certification number 0036
30	**ABV 770**	23/01/2006	TÜV Association for technical inspection EC-Certification number 0036
31	**ABV 770/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
32	**ABV 771**	24/01/2006	TÜV Association for technical inspection EC-Certification number 0036
33	**ABV 775**	26/04/2006	TÜV Association for technical inspection EC-Certification number 0036
34	**ABV 775/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
35	**ABV 776**	03/08/2006	TÜV Association for technical inspection EC-Certification number 0036
36	**ABV 776/1**	11/01/2008	TÜV Association for technical inspection EC-Certification number 0036
37	**ABV 776/2**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
38	**ABV 777**	01/06/2006	TÜV Association for technical inspection EC-Certification number 0036
39	**ABV 777/1**	10/01/2008	TÜV Association for technical inspection EC-Certification number 0036
40	**ABV 777/2**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
41	**ABV 777/3**	01/10/2010	TÜV Association for technical inspection EC-Certification number 0036
42	**ABV 777/4**	06/12/2010	TÜV Association for technical inspection EC-Certification number 0036
43	**ABV 780**	18/07/2006	TÜV Association for technical inspection EC-Certification number 0036
44	**ABV 780/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
45	**ABV 809**	10/02/2009	TÜV Association for technical inspection EC-Certification number 0036
46	**ABV 809/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
47	**ABV 809/2**	25/10/2010	TÜV Association for technical inspection EC-Certification number 0036
48	**ABV 811**	10/02/2009	TÜV Association for technical inspection EC-Certification number 0036
49	**ABV 811/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
50	**ABV 815**	26/03/2009	TÜV Association for technical inspection EC-Certification number 0036
51	**ABV 816**	26/03/2009	TÜV Association for technical inspection EC-Certification number 0036
52	**ABV 817**	04/05/2009	TÜV Association for technical inspection EC-Certification number 0036
53	**ABV 817/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
54	**ABV 818**	25/05/2009	TÜV Association for technical inspection EC-Certification number 0036
55	**ABV 819**	01/07/2009	TÜV Association for technical inspection EC-Certification number 0036
56	**ABV 819/1**	03/05/2010	TÜV Association for technical inspection EC-Certification number 0036
57	**ABV 825**	20/08/2009	TÜV Association for technical inspection EC-Certification number 0036
58	**ABV 825/1**	25/10/2010	TÜV Association for technical inspection EC-Certification number 0036
59	**ABV 826**	21/09/2009	TÜV Association for technical inspection EC-Certification number 0036
60	**ABV 828**	30/10/2009	TÜV Association for technical inspection EC-Certification number 0036
61	**ABV 829**	05/11/2009	TÜV Association for technical inspection EC-Certification number 0036
62	**ABV 843**	12/03/2010	TÜV Association for technical inspection EC-Certification number 0036
63	**ABV 844**	30/04/2010	TÜV Association for technical inspection EC-Certification number 0036
64	**ABV 857**	06/12/2010	TÜV Association for technical inspection EC-Certification number 0036
65	**ABV 858**	06/12/2010	TÜV Association for technical inspection EC-Certification number 0036

EC-directive 95/16 CE [X]
EC-Low voltage directive 73/23/EEC [X]
Electromagnetic compatibility directive 89/336/EEC [X]

Angers, The 13/01/2011
Place / date

graduate engineer, Pierre Lonjon
(Quality Manager)