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Customer address:  
S.I.A.R.  
TORINO

Contact person:  
Telephone:

Value (N)

Fx car	10
Fy car	2450
Fz car	0
Fx cwt	380
Fy cwt	120



Fx applies to one fixing  
(per guide) at a time,  
Fy to two fixings but in  
opposite directions and  
Fz (vertical) to all fixings

Drawing approval:

= CHECKED AND APPROVED BY THE CUSTOMER:

Name: \_\_\_\_\_ Date: \_\_\_\_\_ signature: \_\_\_\_\_

General information:

Project manager : KONE S.P.A.

Designer : f  
Creation date : 3/2/2003  
SAP number :  
Order number : 10311950

Installation premises: S.I.A.R.  
VIA GHEDINA 2 TORINO

Building: \_\_\_\_\_ Position: \_\_\_\_\_ Lift: \_\_\_\_\_

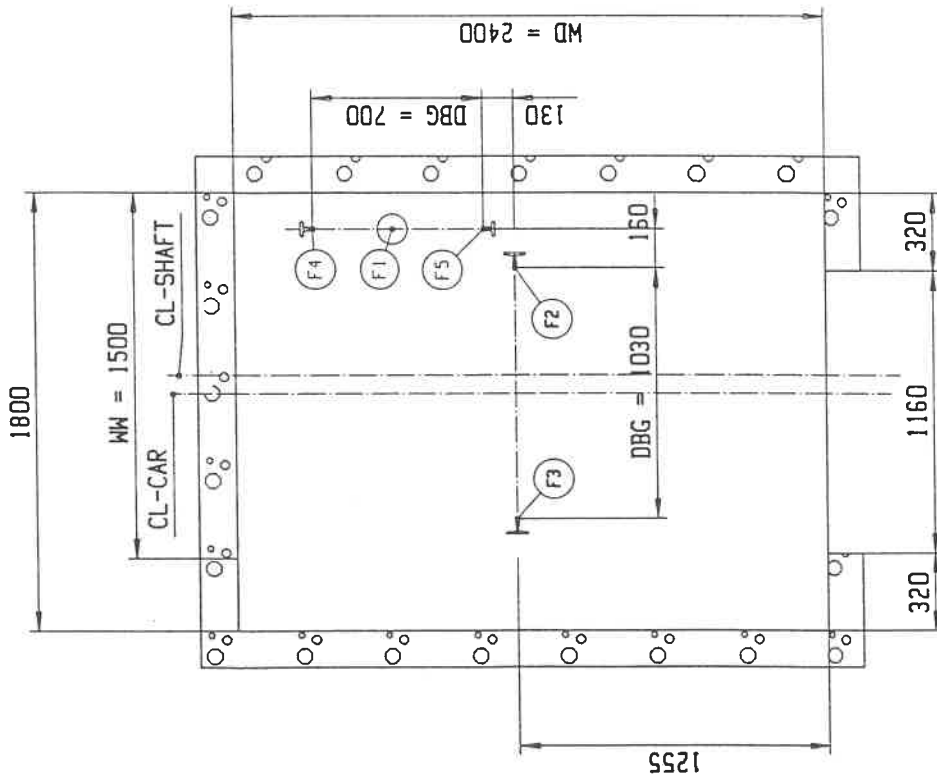
TECHNICAL SPECIFICATION

Safety regulations	LD 95/16/EC	Drive system	V3F16L
Lift type	Passenger	Motor nominal power	5,7 kW
Lift code	PM10/10-19	Line current, nominal	14 A
Rated load	800 kg	Line current, equivalent	14 A
Rated speed	1.00 m/s	Line current, accel'n max. peak	20,1 A
No. of stops / landing doors	6/ 6	Main switch fuse	16 A
Travel	17630	Total thermal losses	0,5 kW
Control system	LCE	Power supply	380 Volt
Installation method	MonoSpace	Lighting supply	220 Volt
C			
B			
A			
REV	DATE	BY	DESCRIPTION

**KONE**  
KONE Lifts Ltd  
168-170 Wellington Rd Sth  
Hounslow, Middlesex TW4 5JN  
Tel.: 0181 570 7799 Fax: 0181 572 8389

MAX. REACTION LOADS (In pit bottom)	
	Value (kN)
F1	69
F2	43
F3	43
F4	12
F5	9

Note: reaction loads F1..F5 on the pit bottom are not simultaneous



FORCE ON PIT, TOP VIEW

Date: 3/2/2003

Scale: n.a.

Rev: HORIZONTAL SECTION BUILDER

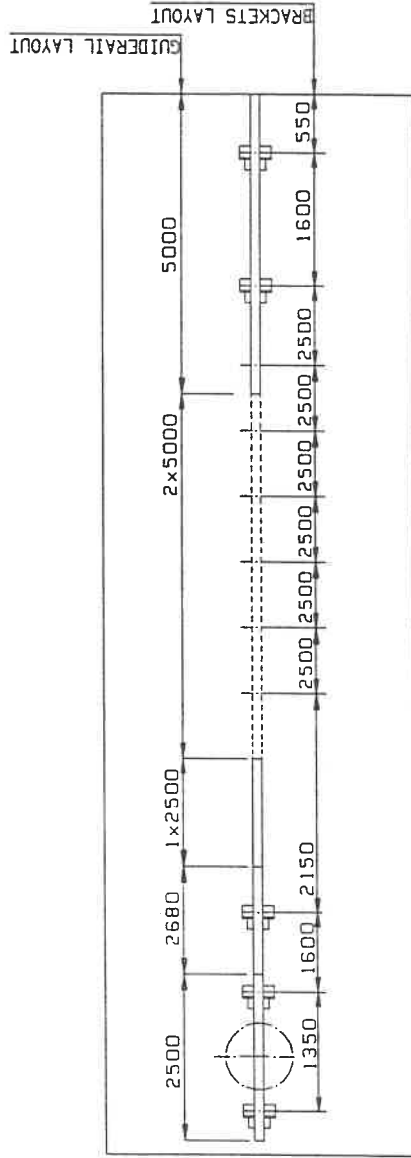
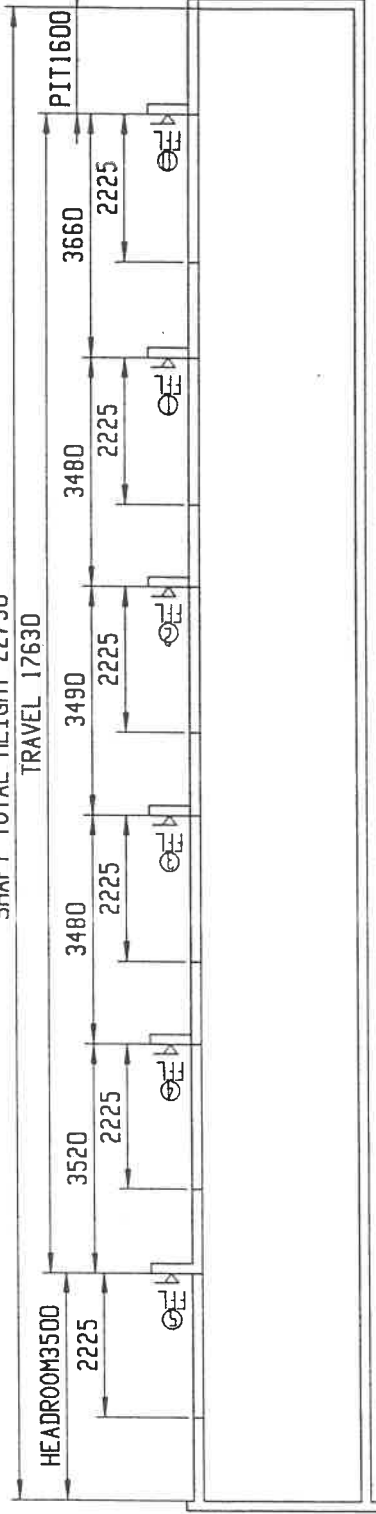
Order nr: 10311950

Page: 2/13



SHAFT TOTAL HEIGHT 22730

TRAVEL 17630



Date: 3/2/2003

Scale: n.a.

Rev: VERTICAL SECTION BUILDER

Order nr:

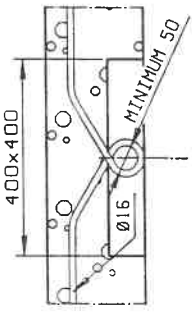
10311950

Page :

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**KONE**

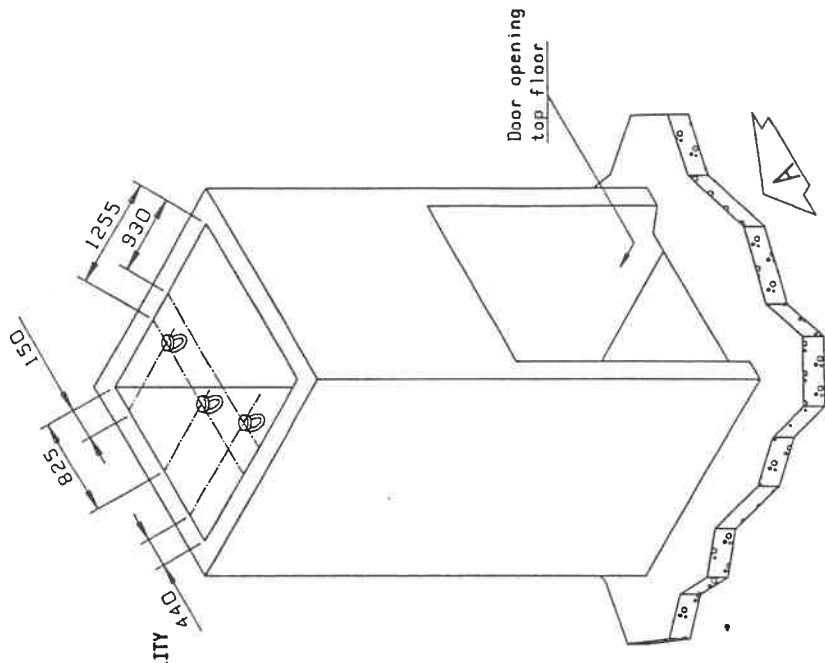
DUE TO THE INSTALLATION METHOD  
THE PLACEMENT OF THE EYES IS  
CRITICAL



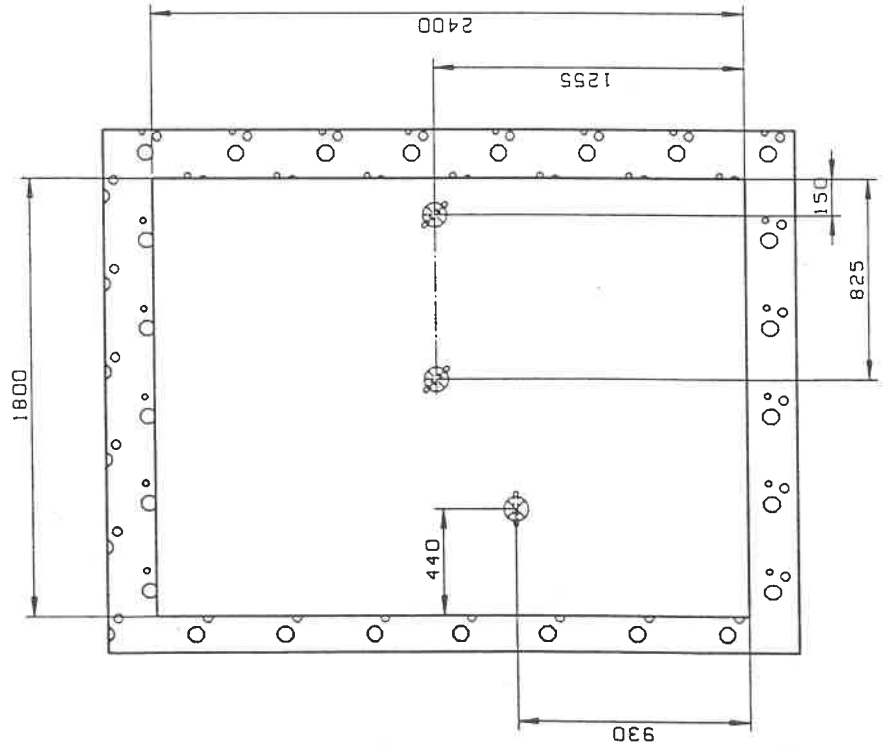
$F=15 \text{ kN}$

NOT FOR MANUFACTURING

ONLY AS DIMENSIONAL REFERENCE  
HOOKS STRENGTH IS UNDER BUILDER RESPONSIBILITY  
HOOKS CAPACITY MUST  
BE CERTIFIED BY  
BUILDER ACCORDING TO  
LOCAL REQUIREMENTS



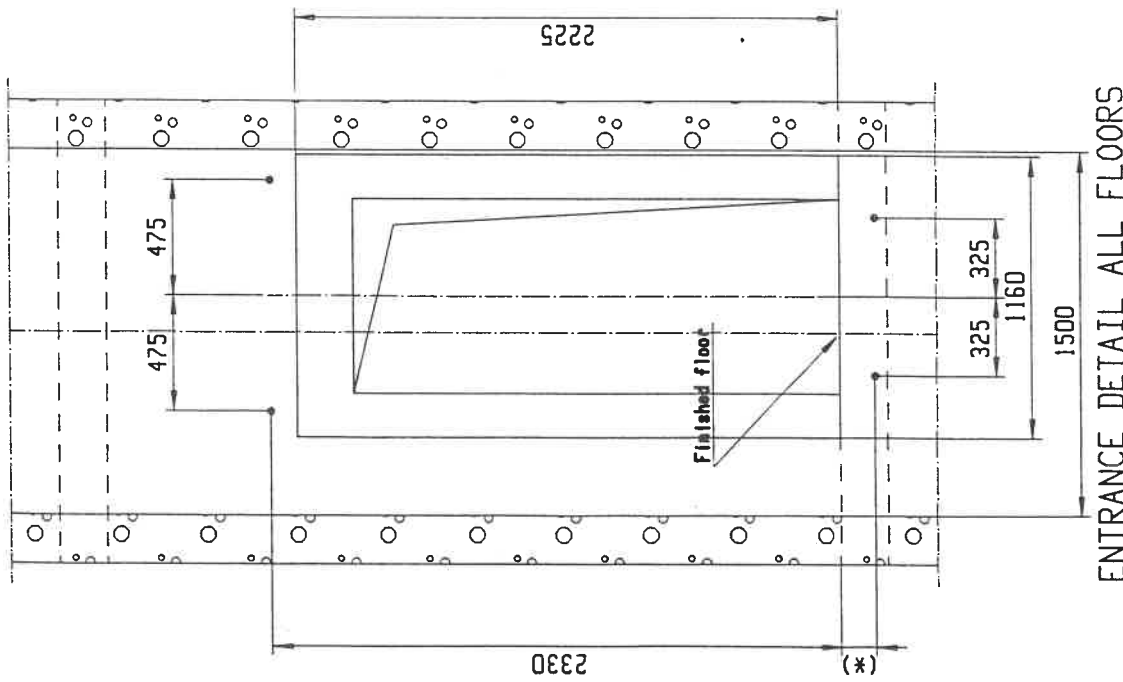
LIFTING EYE PLACEMENT  
DIMENSION FROM  
INSIDE LIFTWELL



A  
SIDE

LIFTING EYE PLACEMENT , TOP VIEW

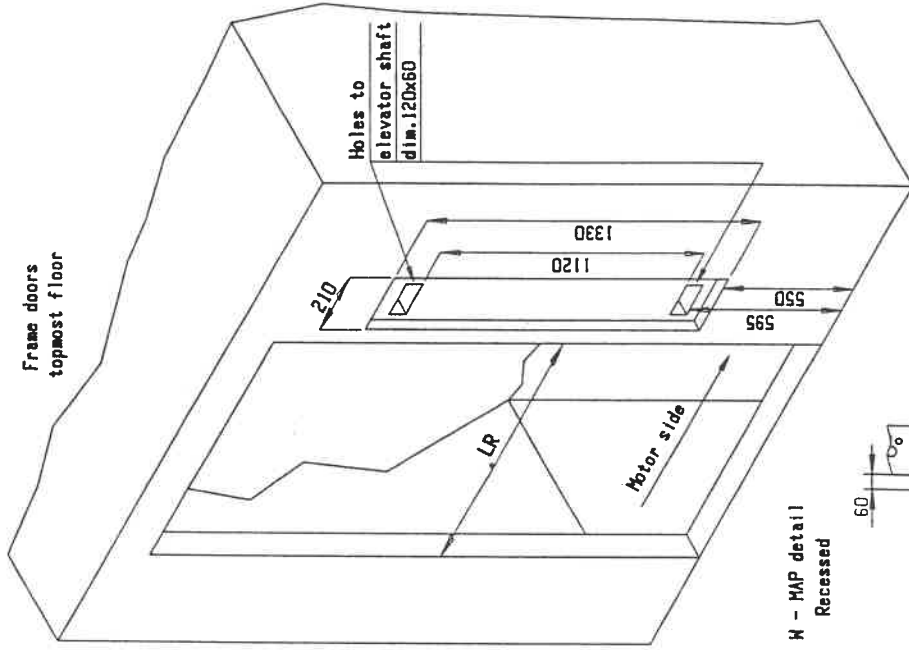
Date: 3/2/2003	Scale: n.a.	Rev: HOOKS AND MAIN SWITCH PLACEMENT	Page: 4/13
KONE		Order nr: 10311950	



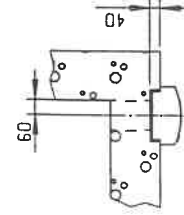
ENTRANCE DETAIL ALL FLOORS

Floor thickness	(#)	Date:	3/2/2003	Scale:	n.a.	Rev:	DOOR OPENING	Page:	5/13
0 - 40	120	<b>KONE</b>	Order nr:	10311950					
40 - 120	200								
120 - 170	250								

REMARK OR NOTES  
 REMARK OR NOTES  
 REMARK OR NOTES

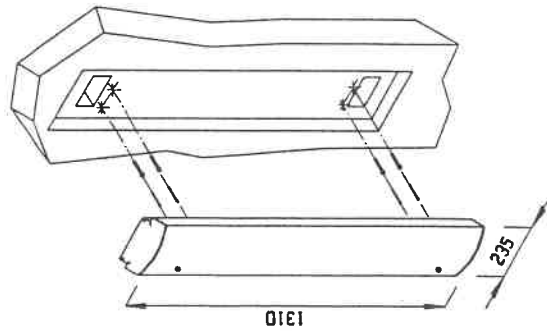


H - MAP detail  
 Recessed



LR = Door row opening

GENERAL TOLERANCES ±10 mm



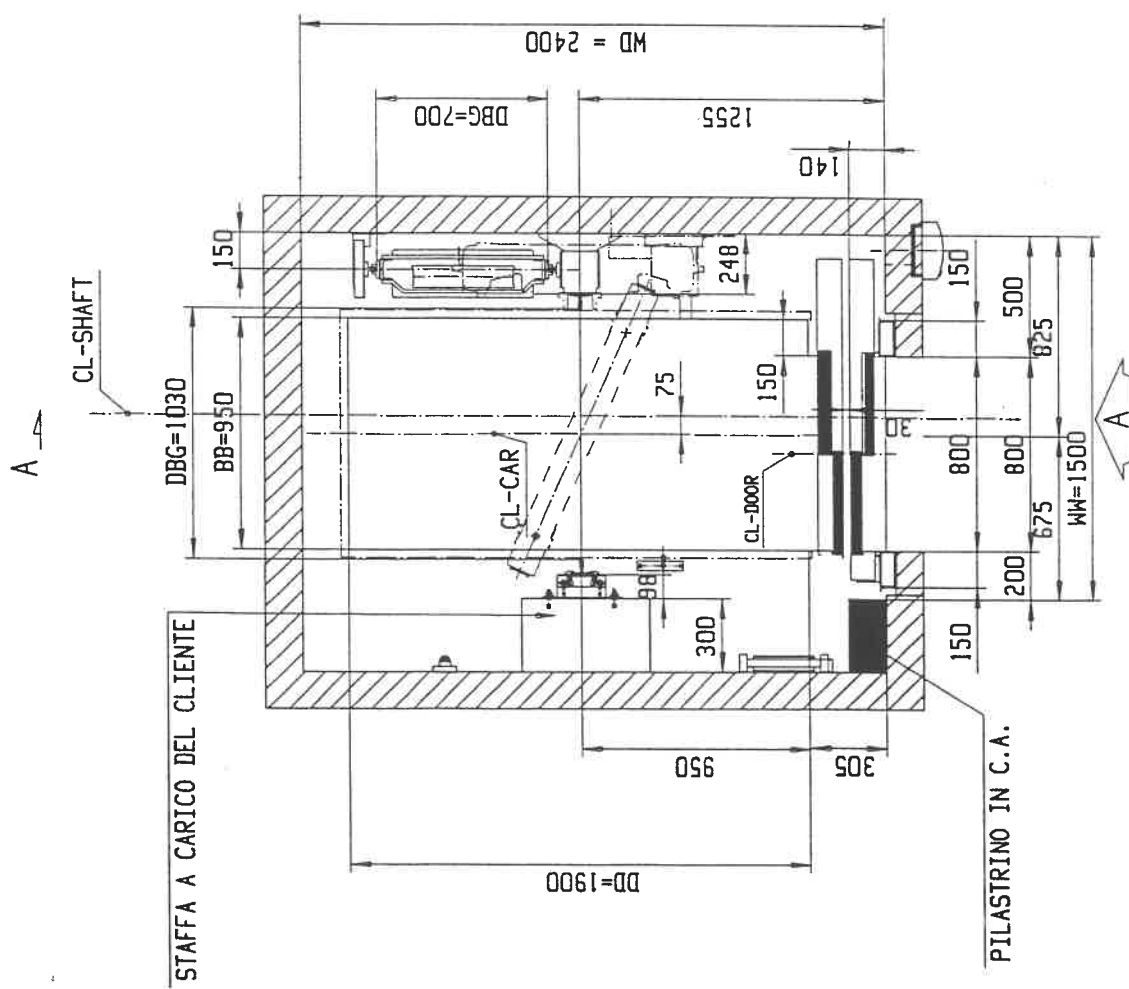
Date: 3/2/2003 Scale: n.a.

Rev: SEP DETAIL

Order nr: 10311950

Page : 6/13





A →  
SHAFT PLAN

Date: 3/2/2003	Scale: n.a.	Rev: HORIZONTAL SECTION INSTALLATION	Page: 7/13
KONE		Order nr: 10311950	

SH = 3500

2490

2300

220

PH = 1600

2000

100

441

130

2100

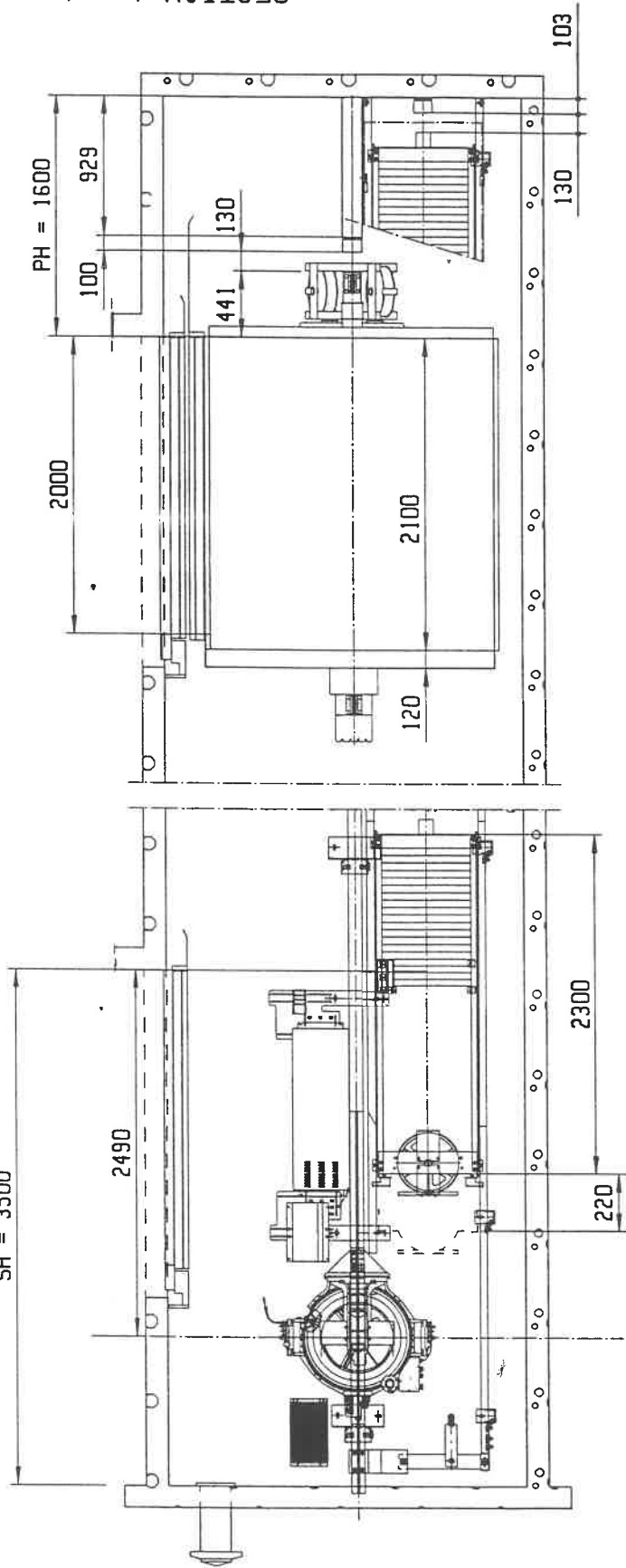
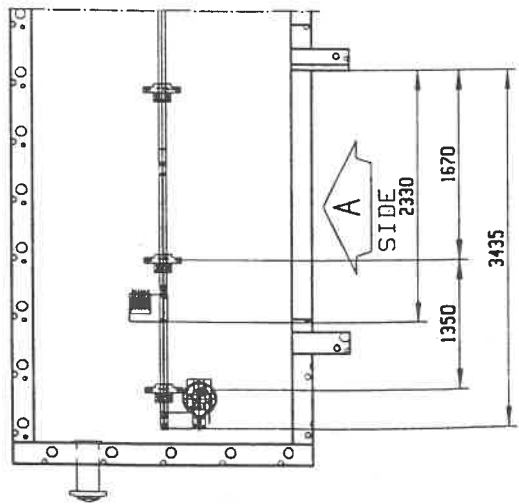
120

130

103

SECTION A - A

HEADROOM VIEW OPPOSITE  
TO MX MACHINE SIDE



Date: 3/2/2003 Scale: n.a.

Rev: VERTICAL SECTION INSTALLATION

Order nr:

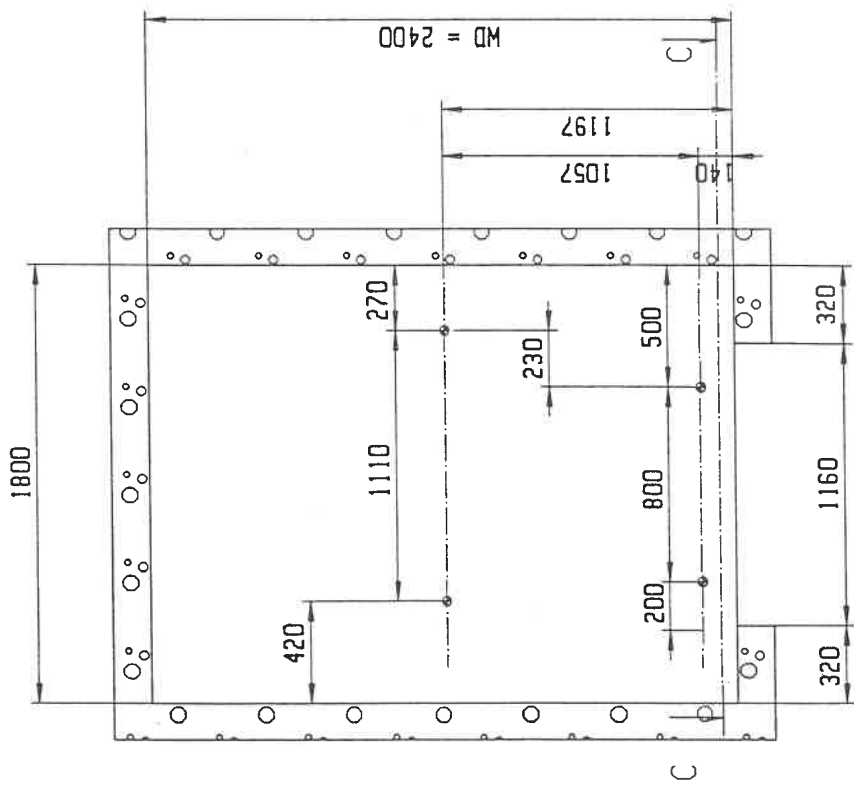
Page :

**KONE**

10311950

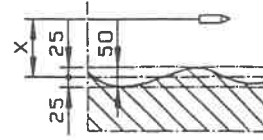
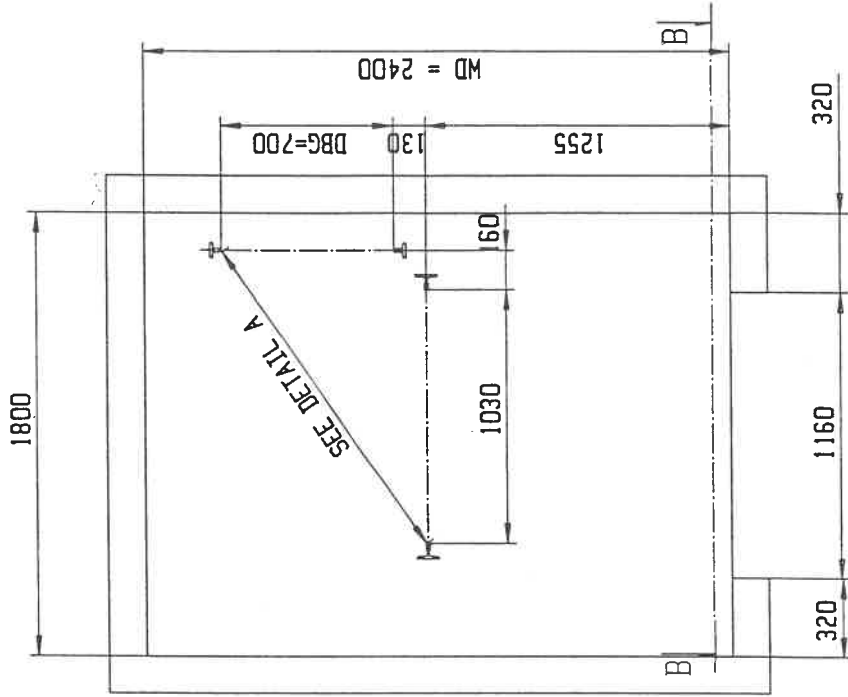
8/13





DETAIL A

PLUMBING



SETTING OUT  
DETAIL

Date: 3/2/2003 Scale: n.a.

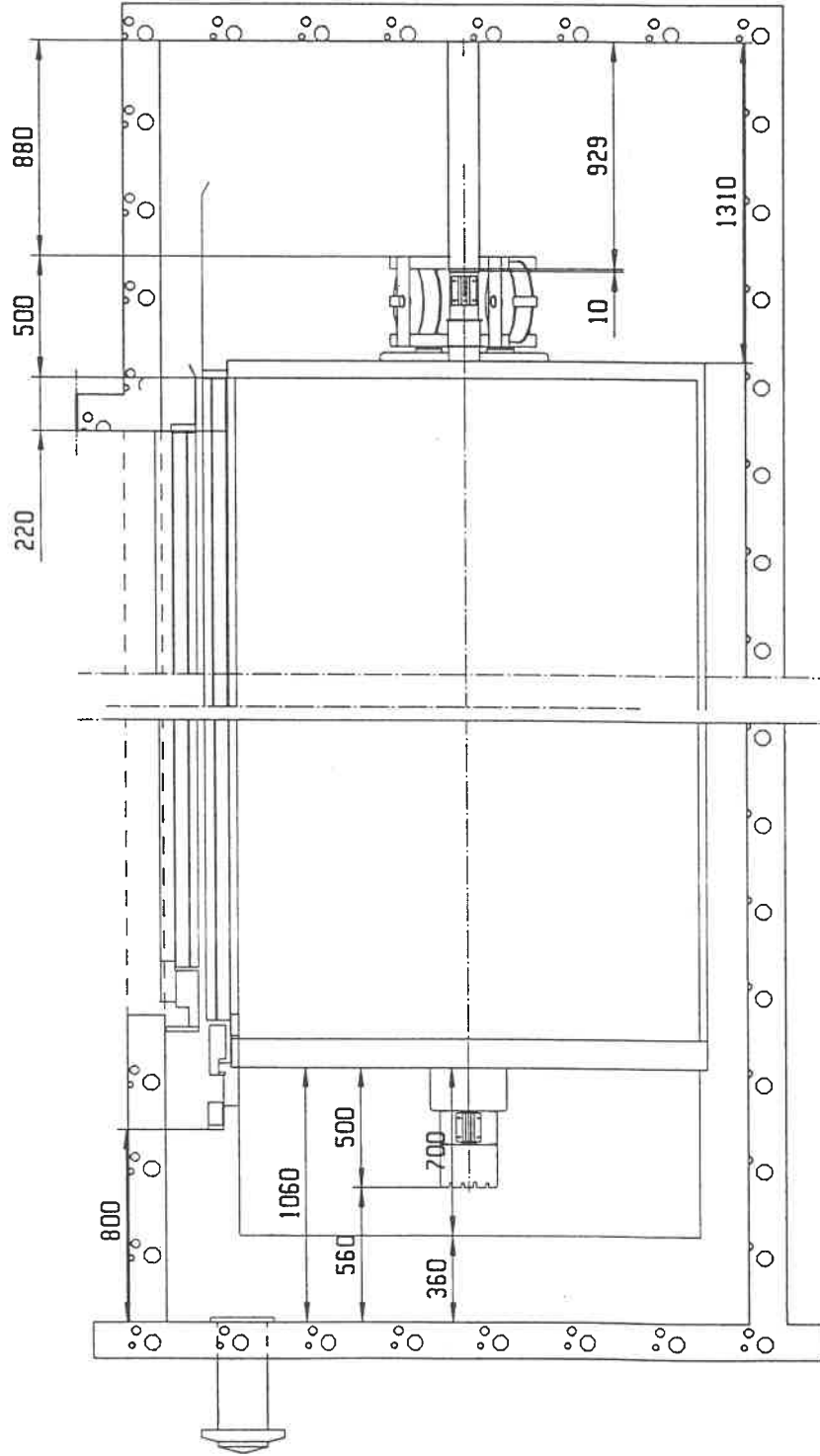
Rev: GUIDERAIL POSITION AND PLUMBS

Page: 9/13

Order nr: 10311950

KONE

PIT AND HEADROOM CLEARANCES



Date: 3/2/2003 Scale: n.a.

Rev: SAFETY SPACES PIT AND HEADROOM

Order nr: 10311950

Page: 10/13



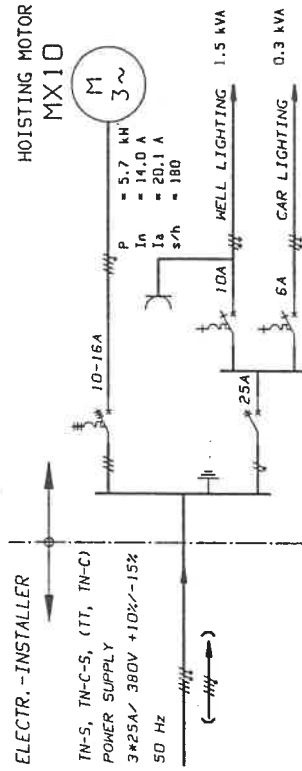
The Five KONE Absolutes

- 1 - The elevator well is clean and dry before installation work starts.
- 2 - The well is constructed according to KONE layout drawings and the well openings are sealed for safety.
- 3 - The lifting eyes and the ventilation ducts specified at the top of the shaft are in place.
- 4 - 3-phase power supply for elevator and installation hoisting is provided
- 5 - A 30 sq. storage space is provided on the ground floor close to the well and the access ways to the well are clear.

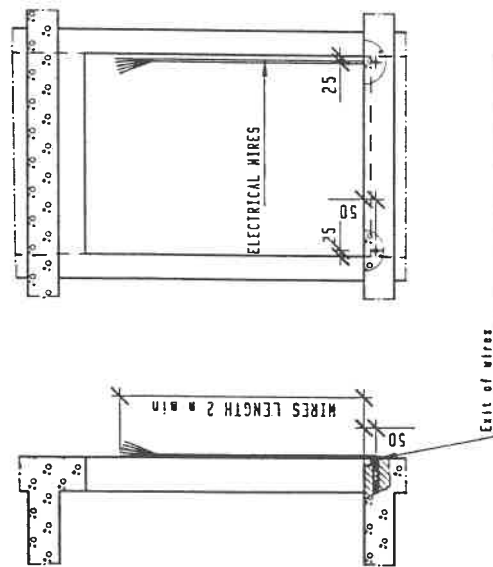
- OPTIONS
- 1 phone cable - 4 wires
  - 1 phone cable - 2 wires
  - 1 phone cable - 3 wires
  - Cable to be defined
  - Wires as a function of the floor number

- Alarm
- Konexion
- Intercom from car lobby
- Special Intercom
- Hell lighting

ELECTRICAL SCHEMATIC



-MAIN POWER CABLES TO BE CONNECTED BY ELECTRICIAN INSTALLER  
 -TELEPHONE LINE TO THE PUBLIC PHONE NETWORK TO BE CONNECTED TO THE SERVICE ELEVATOR PANEL INSIDE THE SHAFT



Date: 3/2/2003

Scale: n.a.

Rev: GROUP INFORMATIONS

Order nr:

10311950

Page :

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**KONE**





# LCE WIRING DIAGRAMS

PRINTING DATE: 30 Apr 03

**LIFT NUMBER:** 10311950 *VIA GHEDINI 2 -TORINO*  
*PORTATA 800 KG.*

**CUSTOMER ID:** KAI-0002

**SALES ORDER:** 0000296972



## WIRING DIAGRAMS LIST

750170	EMC Declaration of Conformity
811850E00/1	[-] Position number table
811850E00/2	[-] Position number table
811850E00/3	[-] Position number table
781710E01/1	[A] Mains with/without neutral
781710E01/2	[A] Mains with/without neutral
811851E02	[-] Calls and signals FC/OSS L
811850E02	[-] Safety chain
781716E02	[B] Safety chain and lighting
802002E03	[-] Car roof, AMD-D1
802003E03	[A] Car COP
781712E04	[B] Drive module with neutral. Power 24V/8A
781712E04/2	[B] Drive module. Power 24V/8A
811850E05	[-] Safety chain without SSA
713310E06	[-] Simplex
811850E07	[-] Control module
802001E08	[A] Signals in car, COP
802001E09	[A] Car calls. Max. 24-calls
713313E10	[A] Landing calls and signals FC/OSS L
713314E11	[-] AMD1 A-side
781711E16	[-] Emergency battery drive EBD with MAP
781711E23	[-] Mains with neutral
713310E24	[E] KNX/Car
713310E24	[E] KNX/Controller
713310E25	[-] Remote alarm
713310E60	[A] Normal floor distance
781710E90	[A] Layout for MAP
781710E91	[-] Layout for switches and option module
781710E92	[-] Layout for top module
781711E90	[-] Layout for Sep
781711E91	[-] Layout for top module
781711E92	[-] Layout for opt module
771664	[C] MCD/DELTA Electrification

**DICHIARAZIONE DI CONFORMITA' CE  
EC DECLARATION OF CONFORMITY  
DECLARATION DE CONFORMITE CE**

Il Costruttore SLIMPA avendo verificato con prove di Com-patibilità Elettromagnetica l'apparecchiatura denominata:

**LCE NoCabinet Controller  
Electrification**

Applicando le seguenti Norme Armonizzate Europee:  
- EN 12015: 5/1998  
"Compatibilità elettromagnetica: Norma per famiglia di prodotti per ascensori, scale mobili e marciapiedi mobili – Emissione"  
- EN 12016: 5/1998  
"Compatibilità elettromagnetica: Norma per famiglia di prodotti per ascensori, scale mobili e marciapiedi mobili – Immunità"  
ai sensi dell'art.10.1 della Direttiva EMC 89/336/EEC

**DICHIARA**

la conformità ai "requisiti essenziali" dell'art. 4 della citata Direttiva.

The Manufacturer SLIMPA having verified by Electro-magnetic Compatibility tests the equipment named

**LCE NoCabinet Controller  
Electrification**

Applying the following European Harmonized Standards:  
- EN 12015: 5/1998  
"Electromagnetic compatibility: Product family standard for lifts, escalators and passenger conveyors – Emission"  
- EN 12016: 5/1998  
"Electromagnetic compatibility: Product family standard for lifts, escalators and passenger conveyors – Immunity"  
according to the clause 10.1 of the EMC Directive 89/336/EEC

**DECLARES**

conformity with clause 4: "Principal protection requirements" of the Directive.

Le fabricant SLIMPA après avoir vérifié par des tests de compatibilité électromagnétique l'équipement nommé:

**LCE NoCabinet Controller  
Electrification**

En application des normes:  
- EN 12015: 5/1998  
« Compatibilité électromagnétique : Norme famille de produits pour ascenseurs, escaliers mécaniques et trottoirs roulants – Emission »  
- EN 12016: 5/1998  
« Compatibilité électromagnétique : Norme famille de produits pour ascenseurs, escaliers mécaniques et trottoirs roulants – Immunité »  
suivant la clause 10.1 des Directive CEM 89/336/CEE

**DECLARE**

la conformité avec la clause 4 : "Exigences principales de sécurité" de la Directive

RAGIONE SOCIALE E SEDE DEL FABBRICANTE  
COMPANY NAME AND MANUFACTURER LOCATION  
NOM ET ADRESSE DU FABRICANT

**SLIMPA S.r.l. – KONE Via Carducci 2 – 21038 Leggiuno (VA) ITALY**

**IDENTIFICAZIONE DEL  
FIRMATARIO**

Direttore Slimpa s.r.l.

**IDENTIFICATION OF  
SIGNATORY**

Manager of Slimpa s.r.l.

**IDENTIFICATION DU  
SIGNATAIRE**

Directeur de la Slimpa s.r.l.



(Ing. Angelo Ferrè)

1	2	3	4	5	6
1	ARGANO MOTORE				
1:T	TERMISTORI				
6	DINAMO TACHIMETRICA				
10	VENTILATORE CABINA				
11	BOBINA FRENO				
14	INTERRUTTORE DI STOP SUL MOTORE				
30	INTERRUTTORE ZONA PORTE				
31	PULSANTI CHIAMATA CABINA				
32	SCHEDA LCECOB				
32:1	SCHEDA DI ESPANSIONE LCECEB				
33	INTERRUTTORE PRENOTAZIONE				
33:B	PRENOTAZIONE BY-PASS				
33:N	PRENOTAZIONE DISCESA				
33:U	PRENOTAZIONE SALITA				
34	PULSANTE APERTURA PORTE				
34:S	PULSANTE CHIUSURA PORTA				
34:E	TEMPO ESTENSIONE APERTURA PORTA				
35	INTERRUTTORE PRIORITA' AZIONAMENTO				
36	INTERRUTTORE ILLUMINAZIONE CABINA				
37	INTERRUTTORE VENTILATORE CABINA				
38	INTERRUTTORE DI BLOCCO				
39	PULSANTE ALLARME				
41	INTERRUTTORE DI STOP SUL TETTO CABINA				
42:DS	INTERRUTTORE MANUTENZIONE AZIONAMENTO				
42:U	PULSANTE MANUTENZIONE "SALITA"				
42:N	PULSANTE MANUTENZIONE "DISCESA"				
42:RB	PULSANTE MANUTENZIONE "CORSA"				
43	VENTILATORE CABINA				
44	ILLUMINAZIONE CABINA				
44:1-2	ILLUMINAZIONE DI EMERGENZA				
45	PRESA SUL TETTO CABINA				
47	PRESA TELEFONO DI SERVIZIO SUL TETTO DI CABINA				
51	INTERRUTTORE FINE CORSA IN CABINA				
52	CONTATTO PARACADUTE				
57	CONTATTO USCITA DI EMERGENZA				
61:U	INTERRUTTORE RALL./FERM. "SALITA"				
61:N	INTERRUTTORE RALL./FERM. "DISCESA"				
63,63:B	INTERRUTTORE DI BLOCCO				
63:L	CONTATTO SCALETTA				
64	DISPOSITIVO LIMITATORE DI CARICO				
65	ALLARME SUL TETTO CABINA				
66	CHIAVE PER FUORI SERVIZIO				
69	CITOFONO PER SERVIZIO POMPIERI				
71	CHIAVE MANOVRA POMPIERI				
77:U	INTERRUTTORE LIMITE IN "SALITA"				
77:N	INTERRUTTORE LIMITE IN "DISCESA"				
77:S	INTERRUTTORE DI SINCRONIZZAZIONE				
82	CONTATTO CORTINA DI LUCE				
84	OPERATORE PORTE				
85	MOTORE PORTE				
87	CONTATTO PORTA DI CABINA				
88	TRASMETTITORE FOTOCELLULA PORTE				
89	RICEVITORE FOTOCELLULA PORTE				
90	DISPOSITIVO FOTOCELLULA				
93:N	PRENOTAZIONE DISCESA				
93:U	PRENOTAZIONE SALITA				
96	INDICATORE POSIZIONE CABINA				
97	SEGNALAZIONE DI ALLARME RICEVUTO				

Issue	Change Description	Date	Des. by	Appr. by

KONE Elevators



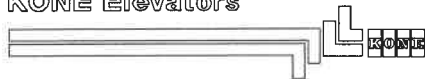
Designed by	J.Kantola	Checked by	A.Jokivalli	Language	it
Dept.	ECC	Date	05.06.2002	Approved by	P.Huotari
				Product code	LCE
<b>TABELLA DISPOSITIVI</b>					
Sales ref. no.	-	Drawing no.	811850E00	Issue	
				Page	1/3



1	2	3	4	5	6
A	98	ALTOPARLANTE PER COMUNICAZIONE ASCENSORE			
	99	INDICAZIONE DI SOVRACCARICO			
	100	DISPOSITIVO CITOFONO			
	102	PULSANTI CHIAMATA PB, DC			
	103	PULSANTI CHIAMATA DISCESA			
	104	PULSANTE CHIAMATA SALITA			
	105	PULSANTI CHIAMATA FEB			
	106	PULSANTI CHIAMATA FET			
	112,112:1-1	PULSANTE DI STOP			
B	113	CHIAVE DI CHIAMATA PRIORITARIA PRL-L			
	115	CHIAVE DI CHIAMATA PRIORITARIA PRL-H/HEL			
	116	CHIAVE PER FUORI SERVIZIO			
	117	INTERRUTTORE DI BLOCCO			
	120	CONTATTO OCCULTO DI PORTA			
	121	CONTATTO PORTA DI PIANO			
	121:E	CONTATTO USCITA DI EMERGENZA			
	121:P	CONTATTO USCITA DI EMERGENZA			
	122	CONTATTO CHIUSURA PORTA DI PIANO			
C	123,123:1	CONTATTO DEL TENDITORE LIMITATORE			
	125:1-2	CONTATTO AMMORTIZZATORE			
	127	CONTATTO LIMITATORE DI VELOCITA'			
	127:1	CONTATTO LIMITATORE DI VELOCITA PER CONTROPESO			
	133	CHIAVE MANOVRA POMPIERI			
	137	PULSANTE PER ILLUMINAZIONE VANO			
	139	ALLARME			
	140	DISPOSITIVO LIMITATORE DI CARICO			
	141	CONTROLLO APERURA PORTE			
D	147	PRESA TELEFONO DI SERVIZIO IN FOSSA			
	153	CONTATTO ALLENTAMENTO FUNI			
	155	SISTEMA DI SICUREZZA BAR IN FOSSA			
	156	SENSORE ACQUA			
	157	ILLUMINAZIONE VANO			
	158	PRESA IN FOSSA			
	161	LUCE DI OCCUPATO			
	166	INDICAZIONE DI FUORI SERVIZIO			
E	176	INDICATORE POSIZIONE CABINA AI PIANI			
	193	RILEVATORE INCENDIO AI PIANI			
	195	INTERFONO PER SERVIZIO POMPIERI			
	197	SCHEDA DI PIANO LCEFCB			
	198	SCHEDA DI PIANO LCEFOB			
	201	CONTATTATORE PRINCIPALE			
	204	CONTATTATORE RESISTENZA DINAMICA			
	220:1-2	INTERRUTTORE PRINCIPALE			
	220	INTERRUTTORE PRINCIPALE			
F	225	ILLUMINAZIONE QUADRO ELETTRICO			
	226	INTERRUTTORE ILLUMINAZIONE			
	227	BATTERIA EMERGENZA			
	228	SCHEDA DI ALLARME REMOTO LCERAL			
	236	RELE DI MASSA			
	239	TRASFORMATORE ALIMENT. PRINCIPALE			
	262	INTERRUTTORE ILLUMINAZIONE			
	268	RELE' ILLUMINAZIONE			
G	269:L	ILLUMINAZIONE PER QUADRO ELETTRICO			
	269:L1	ILLUMINAZIONE DI EMERGENZA			
	269:L2	ILLUMINAZIONE DI EMERGENZA			
	269:S	INTERRUTTORE ILLUMINAZIONE			
	269:T	TRASFORMATORE PER ILLUMINAZIONE			

Issue	Change description	Date	Des. by	Appr. by

KONE Elevators



Designed by	J. Kantola		Checked by	A. Jokivalli		Language	it	
Dept.	ECC	Date	05.06.2002	Approved by	P. Huotari		Product code	LCE

## TABELLA DISPOSITIVI

Sales ref. no.	-	Drawing no.	811850E00	Issue		Page	2/3
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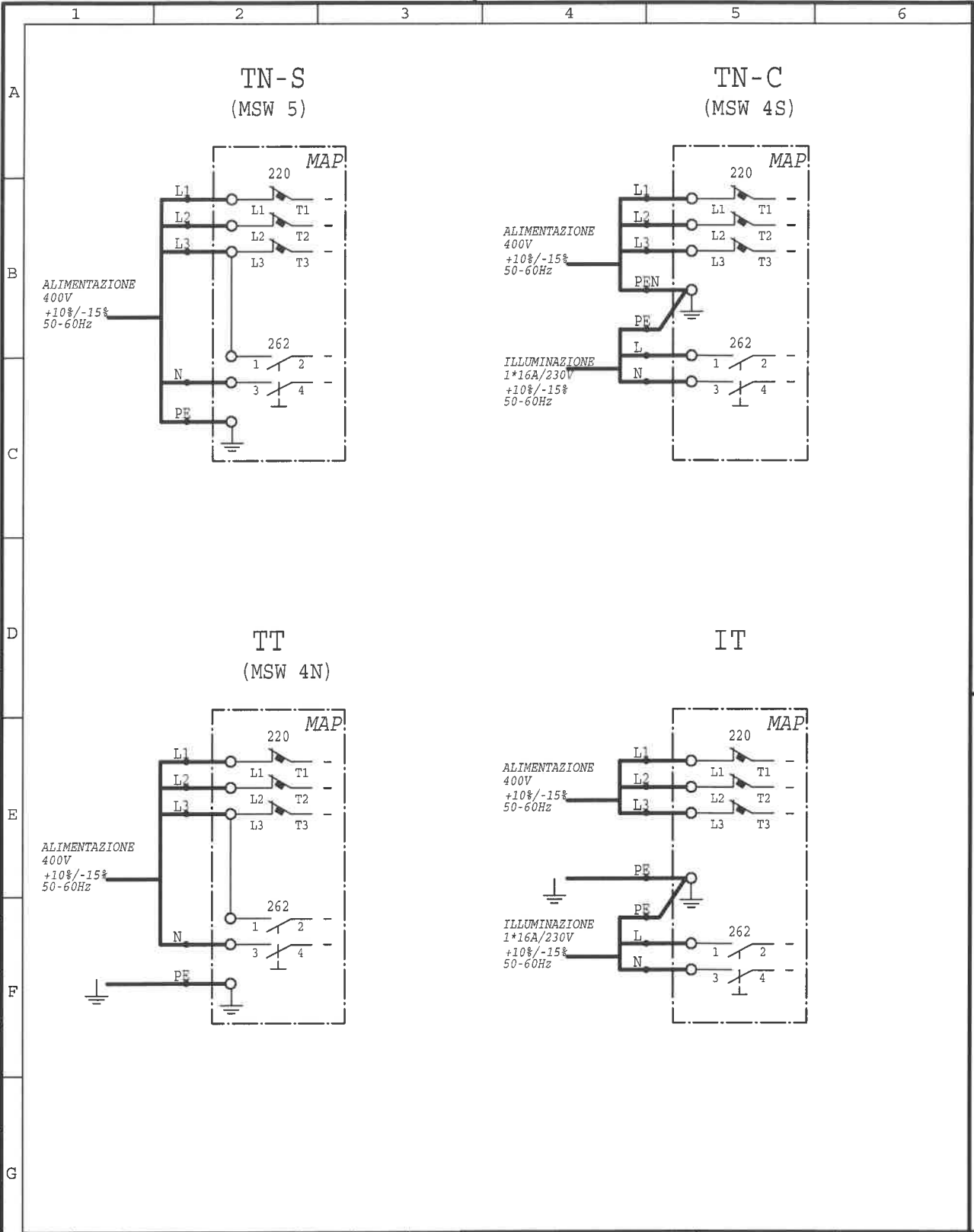
270	INTARRURRORE DI AZIONAMENTO RICHIAMATA
270:U	BOTTONE MANUT. SUL QUADRO "SALITA"
270:N	BOTTONE MANUT. SUL QUADRO "DISCESA"
270:RB	BOTTONE MANUT. SUL QUADRO "CORSA"
274	PRESA NEL QUADRO / MAP
277	PRESA TELEFONO DI SERVIZIO NEL QUADRO
279	INDICAZIONE ZONA PORTE
290:1	FUSIBILE ILLUMINAZIONE CABINA
290:2	FUSIBILE ILLUMINAZIONE DI VANO
306	RESISTENZA DI FRENATURA
366	SCHEDA INTERFACCIA
367	CONNESSIONE BOX I/O
375	SCHEDA CPU LCECPU
375:1	LOPCB SCHEDA PC
379	SCHEDA CIRCUITO SICUREZZA LCE230/LCEADO
379:1	LOP230 SCHEDA PC
385	MODULO AZIONAMENTO
389	MODULO FILTRO
460	CONTATTORE
598	RELE' SUPERVISIONE ILLUMINAZIONE
722	SCHEDA DI ESPANSIONE LCEOPT
723	SCHEDA DI ALIMENTAZIONE
726	SCHEDA DI SUPERVISIONE PER MONITORAGGIO APERTURA PORTA
731	SCHEDA GATEWAY LCEGTW
732	SCHEDA CAN LCECAN
766	DISPOSITIVO COMUNICAZIONE ASCENSORE
806,806:1	SCHEDA CONTROLLO CABINA LCECCB
806:E	SCHEDA DI ESPANSIONE LCECCEB
980	CONTATTORE PARTENZA
985	CONTATTORE TEMPO CORSA
K443	CONTATTORE ZONA PORTE
K486	CONTATTORE CONTROLLO VELOCITA'
K487	CONTATTORE SUPERVISIONE
K553	RELE' PRECISIONE DI FERMATA
EBD	RITORNO AL PIANO IN EMERGENZA
MAP	PANNELLO DI MANUTENZIONE
SEP	PANNELLO ELETTTRIFICAZIONE VANO

Designed by	J. Kantola	Checked by	A. Jokivalli	Language	it
Dept.	ECC	Date	05.06.2002	Approved by	P. Huotari
				Product code	LCE
<b>TABELLA DISPOSITIVI</b>					
Sales ref. no.	-	Drawing no.	811850E00	Issue	
				Page	3/3

KONE Elevators

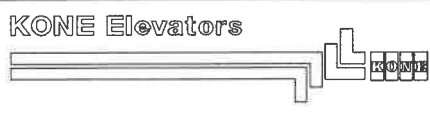


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Issue	Change	Date	Des	Appr
A	Texts changed-XM25 ad.	30/02	JKa	

Designer	T. Tinti		Checker	A. Jokivalli		Language	it	
Dept.	RES	Date	30.10.2001	Approver	P. Huotari		Product c.	LCE



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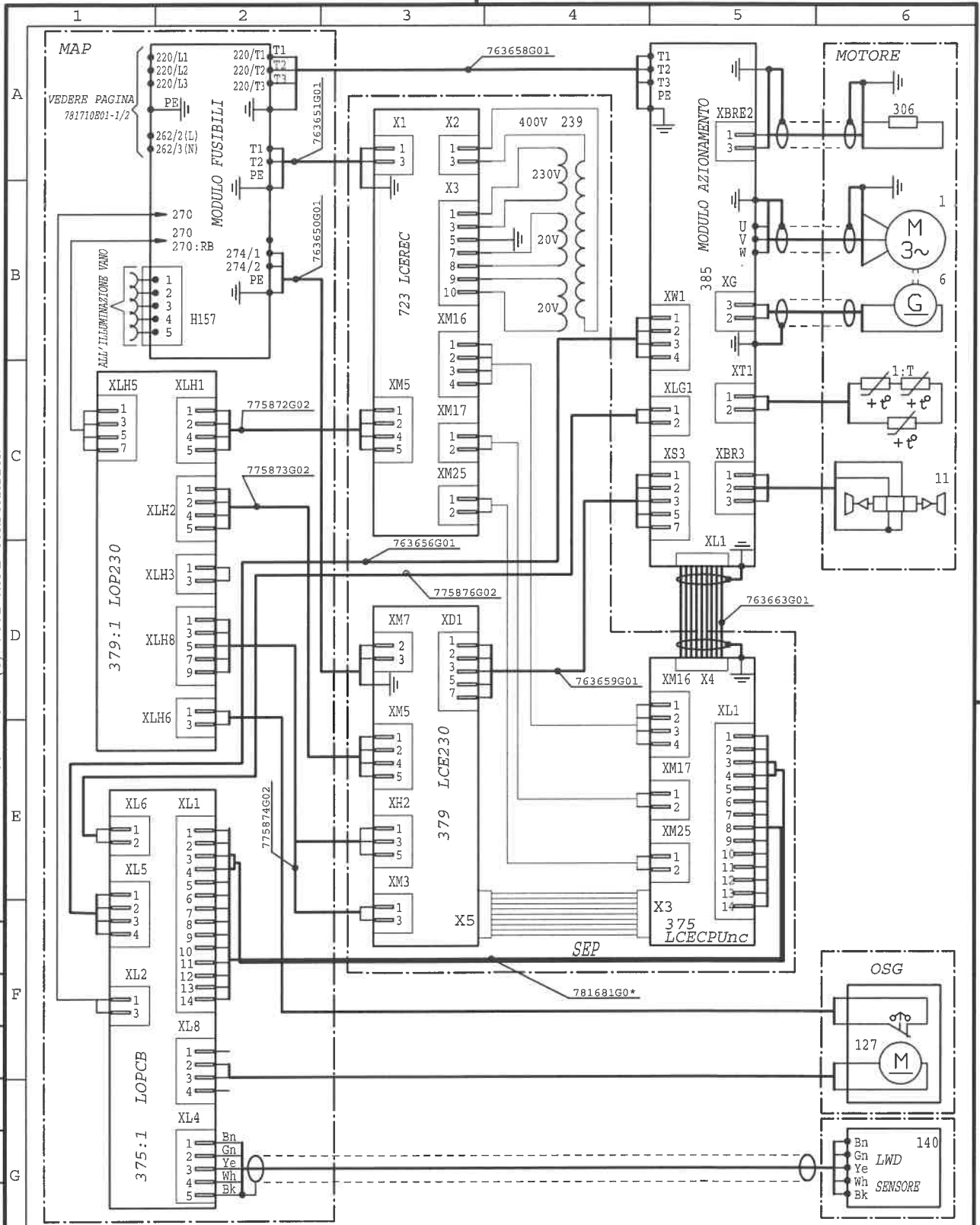
Sales ref. no.	Draw. no.	Issue	Page
-	781710E01	A	1/2

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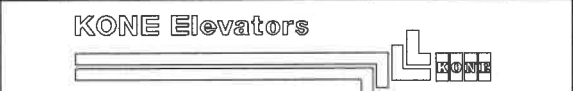
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A	Added XM25 connection	9-9-02	MMA	
Issue	Change	Date	Des	Appr



Designer	T. Tinti		Checker	A. Jokivalli		Language	it	
Dept.	RES	Date	30.10.2001	Approver	P. Huotari		Product c.	LCE
ELETTRIFICAZIONE								
MECCANICA, CONTROLLO E MAP								

Sales ref. no.	-	Draw. no.	781710E01	Issue	A	Page	2/2
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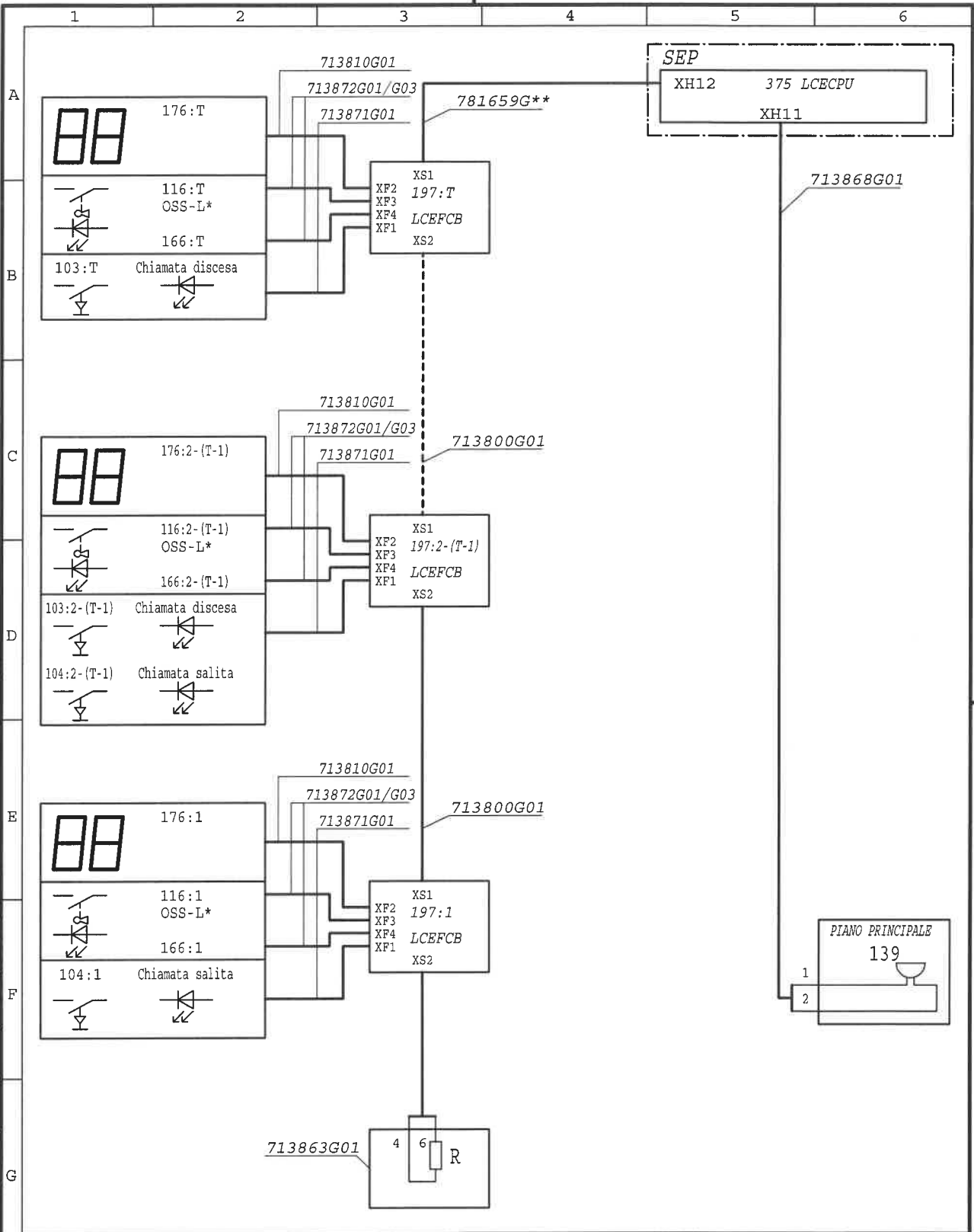
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**SEP**

XH12	375 LCECPU
XH11	

PIANO PRINCIPALE

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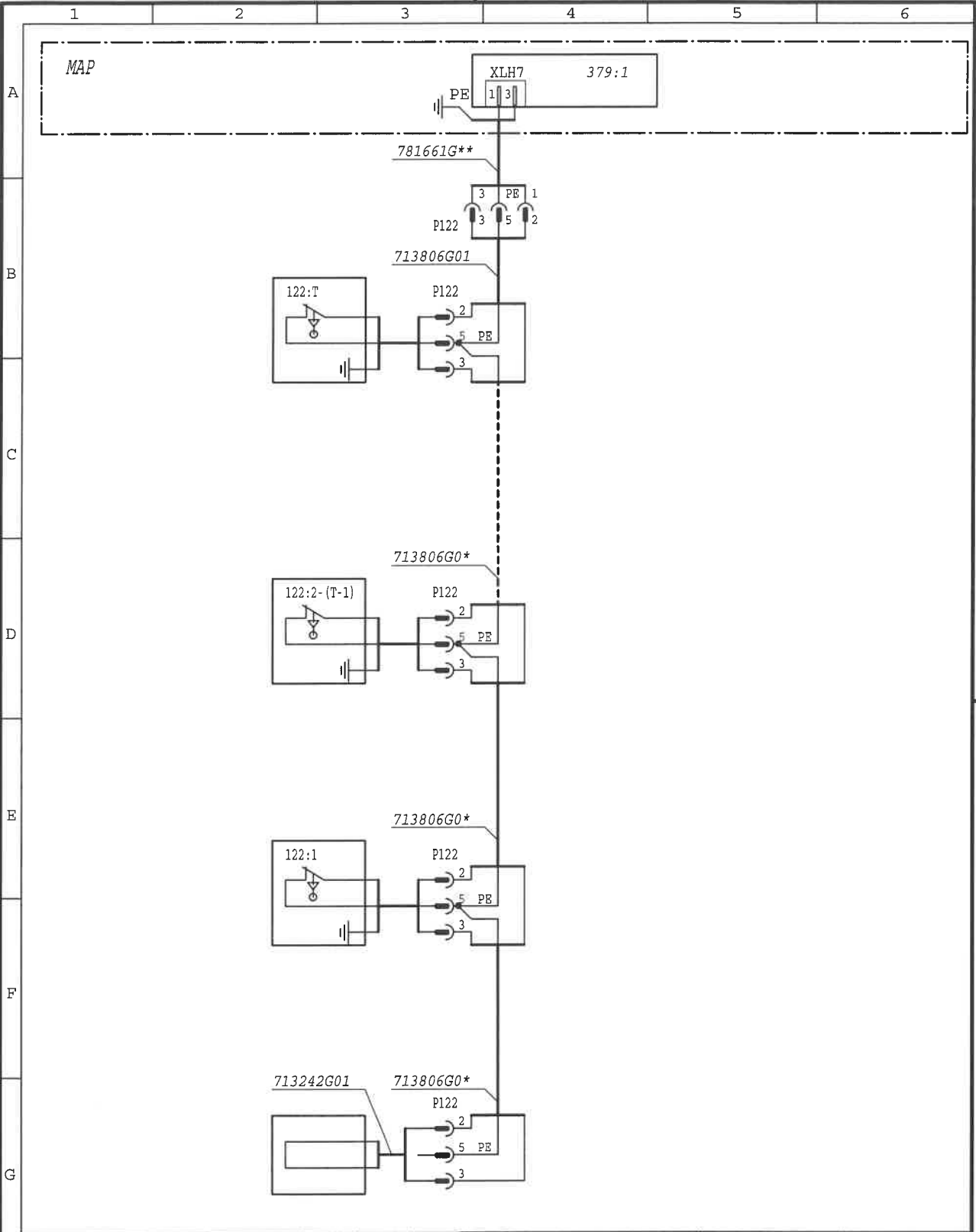
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					Designer <b>J. Kantola</b>		Checker <b>A. Jokivalli</b>		Language <b>it</b>											
					Dept. <b>ECC</b>		Date <b>17.05.2002</b>		Approver <b>P. Huotari</b>											
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Issue	Change	Date	Des	Appr																
<b>CHIAMATE E SEGNALI</b>						Sales ref. no. <b>-</b>		Draw. no. <b>811851E02</b>		Issue <b>-</b>										
						Page <b>1/3</b>														

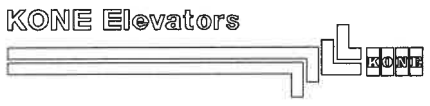
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Issue	Change	Date	Des	Appr

Designer J. Kantola		Checker A. Jokivalli	Language it
Dept. ECC	Date 17.05.2002	Approver P. Huotari	Product c. LCE



ELETRIFICAZIONE DI VANO  
CATENA SICUREZZE

Sales ref. no. -	Draw. no. 811850E02	Issue -	Page 2/3
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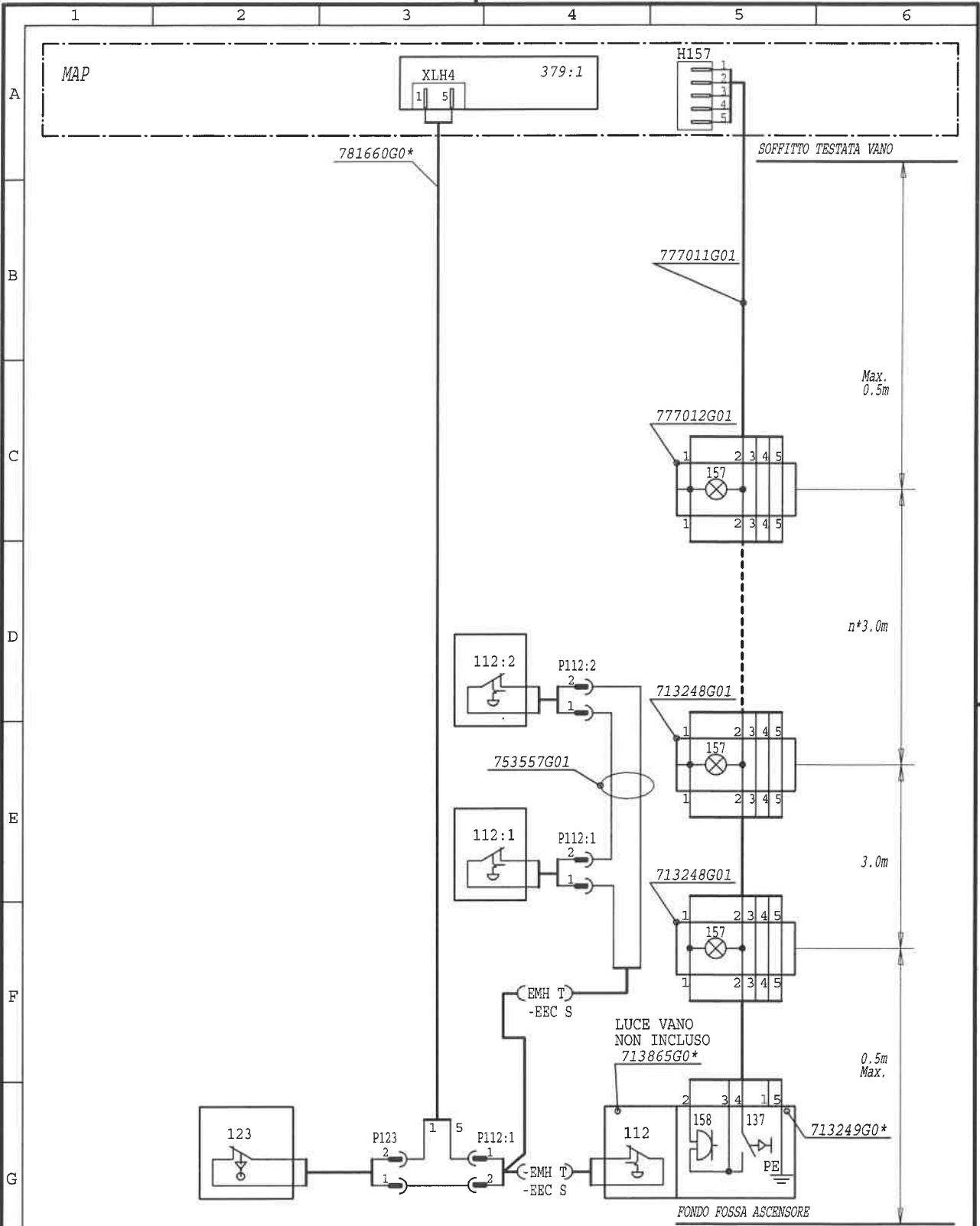
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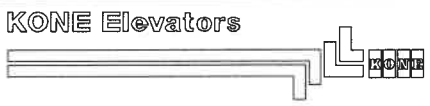
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B	EMH T added	17/5/02	JKa	
A	777012G01 instead of two 713248G01 Added 777011G01	21/2/02	A.Z.	
Issue	Change	Date	Des	Appr

Designer T. Tinti		Checker A. Jokivalli		Language it
Dept. RES	Date 30.10.2001	Approver P. Huotari		Product c. LCE



**ELETRIFICAZIONE DI VANO**  
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Sales ref. no. -	Draw. no. 781716E02	Issue B	Page 3/3
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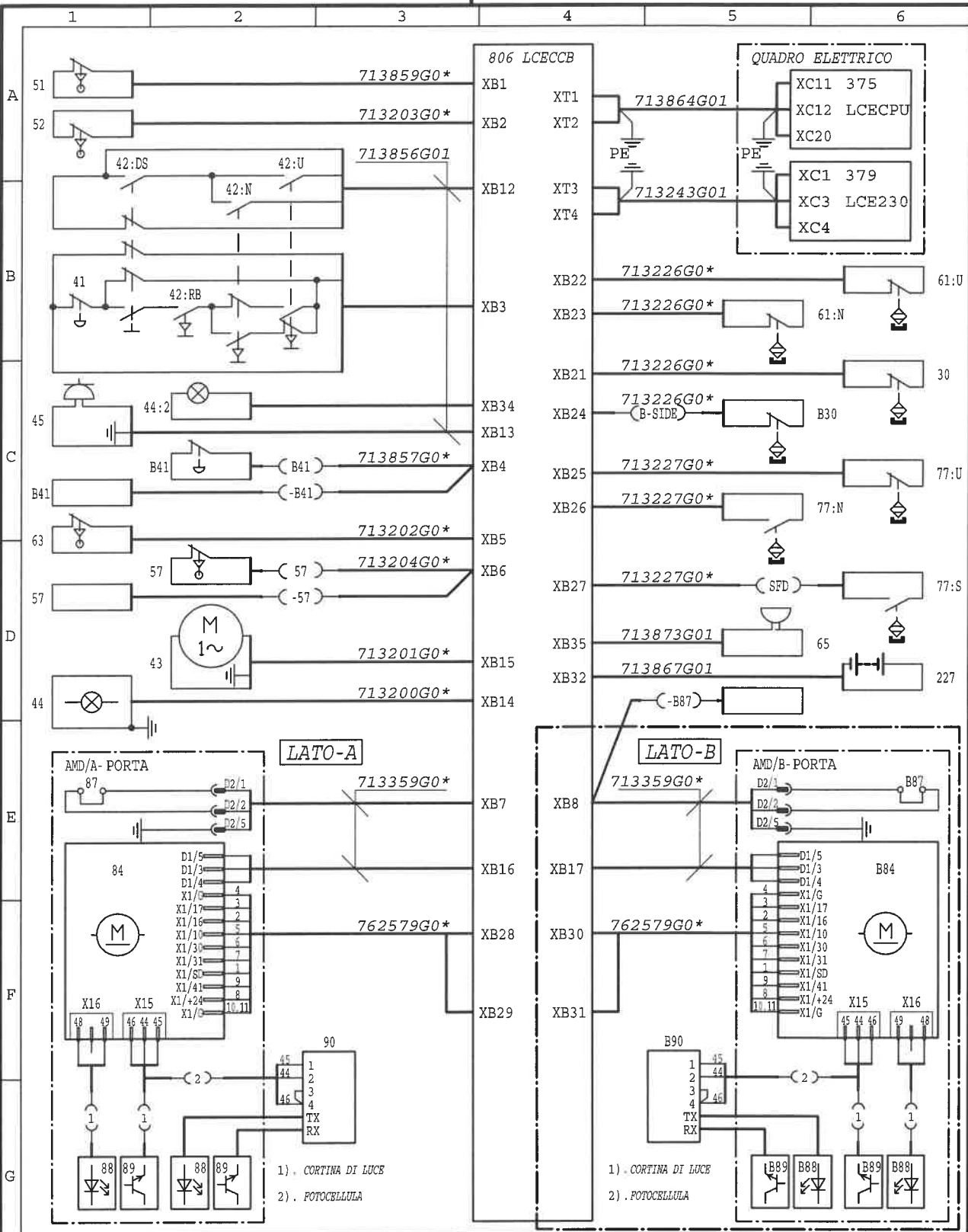
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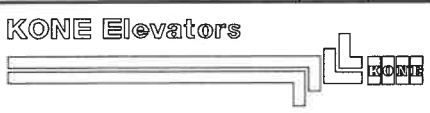
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Issue	Change	Date	Des	Appr

Designer <b>J. Kantola</b>	Checker <b>A. Jokivalli</b>	Language <b>it</b>
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Product c. <b>LCE</b>		



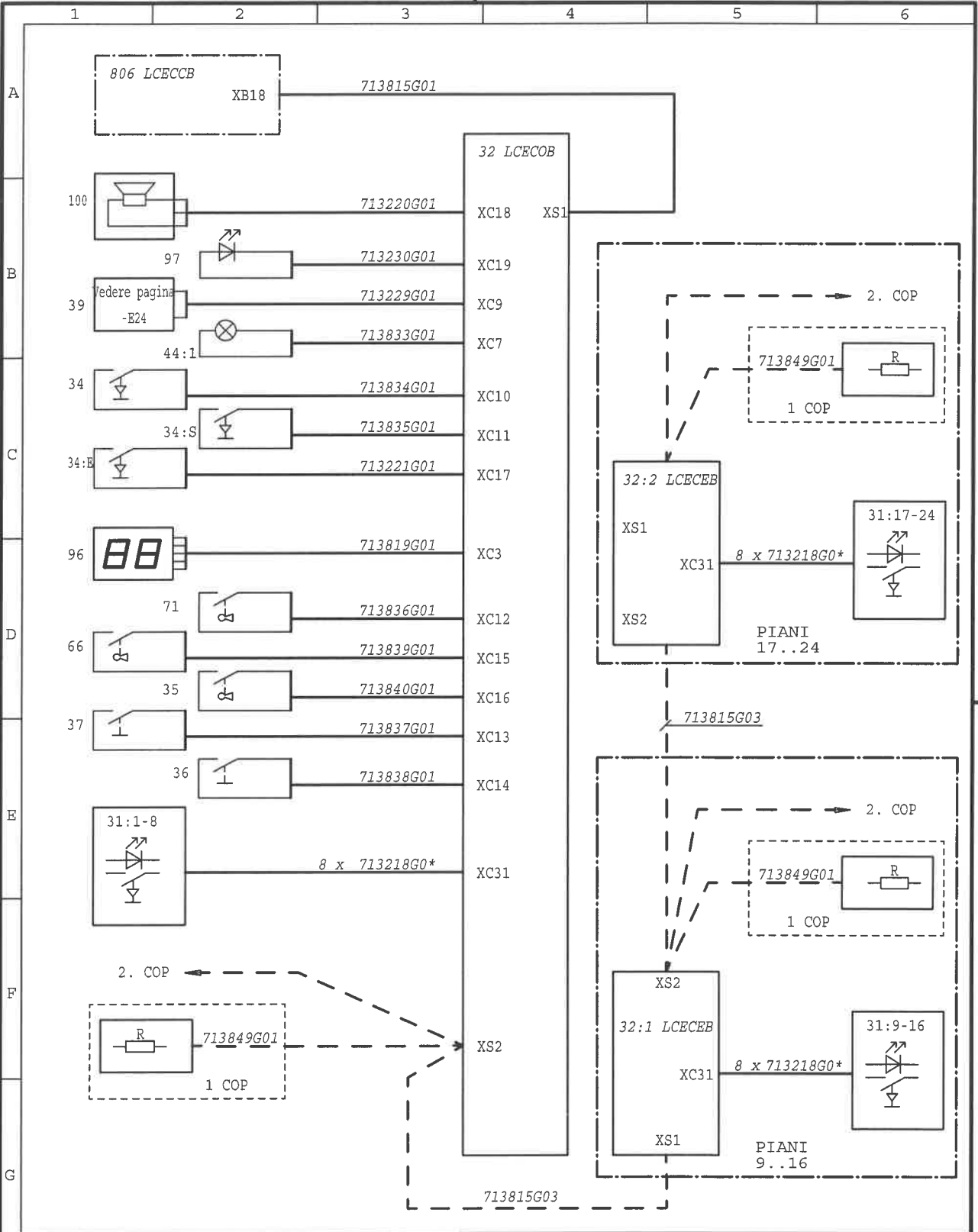
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Sales ref. no. -	Draw. no. <b>802002E03</b>	Issue -	Page <b>1/2</b>
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Issue	Change	Date	Des	Appr
A	2. COP added	20/02	JKa	

Designer	J. Kantola		Checker	A. Jokivalli		Language	it		
Dept.	ECC	Date	26.07.2001		Approver	P. Huotari		Product c.	LCE

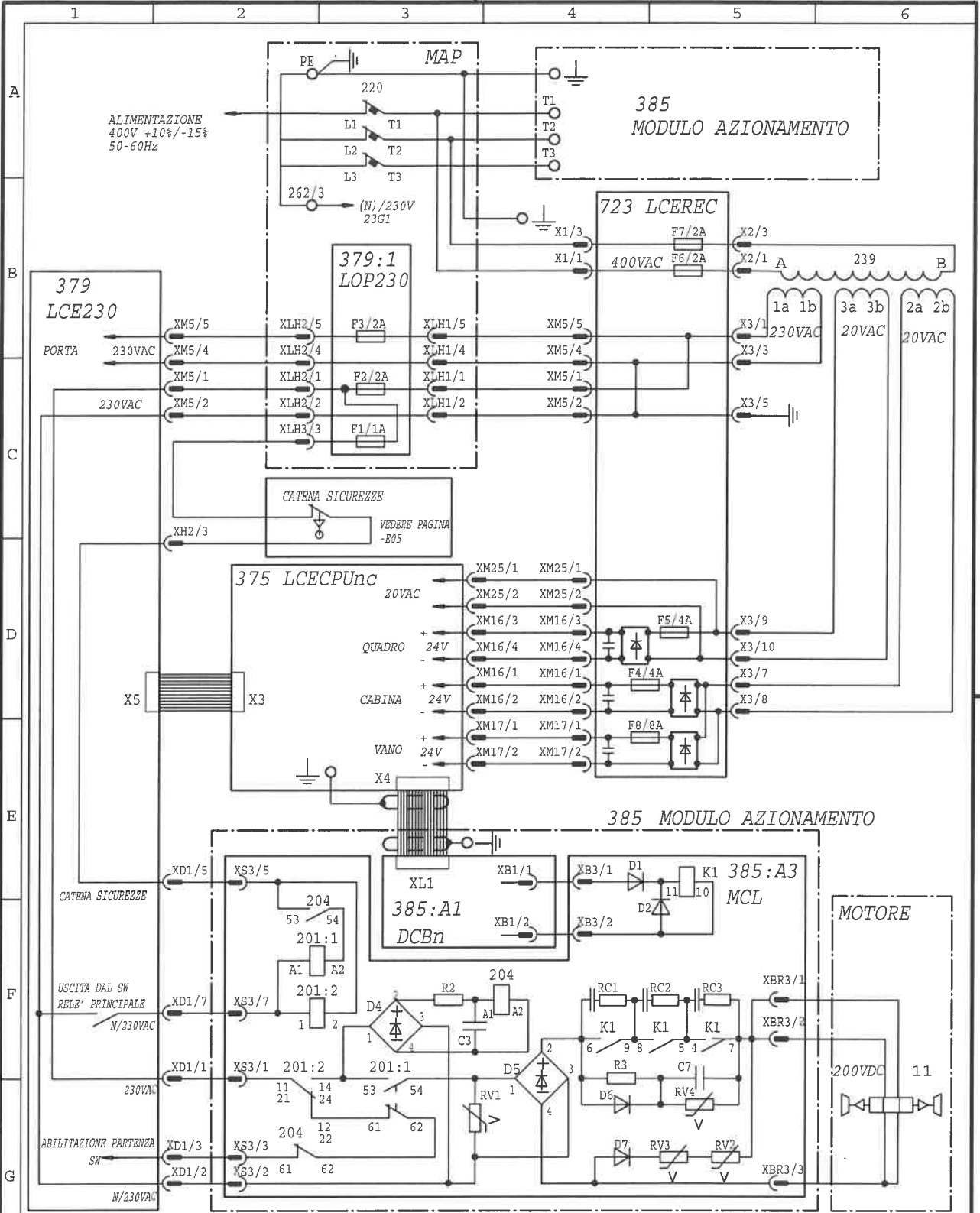
**KONE Elevators**

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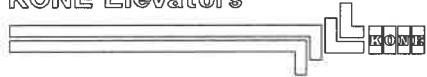
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B	ADDED XM16/1 and XB1/2	26-9-02	kaimma5	eccajo
A	ADDED XM25 Cable	6-9-02	kaimma5	eccajo
Issue	Change	Date	Des	Appr

Designer	T. Tinti	Checker	A. Jokivalli	Language	it
Dept.	RES	Date	29.10.2001	Approver	P. Huotari
Product c.					LCE

KONE Elevators

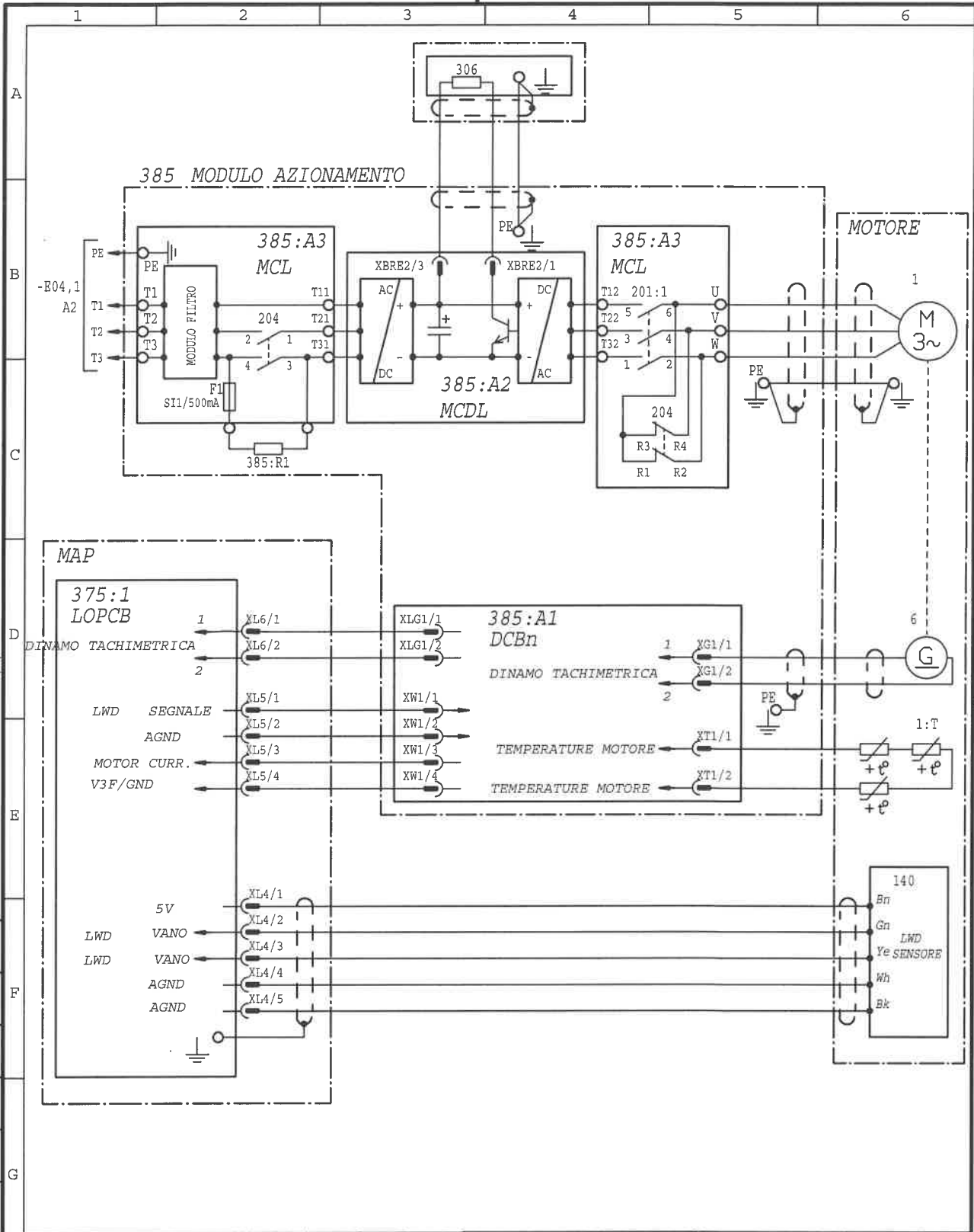


MODULO AZIONAMENTO

V3F16L

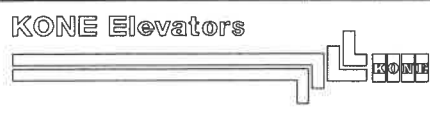
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-	781712E04	B	1/2

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B	ADDED XM16/1-XB1/2 (page 1)	26-9-02	kaimma	eccajo
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Issue	Change	Date	Des	Appr

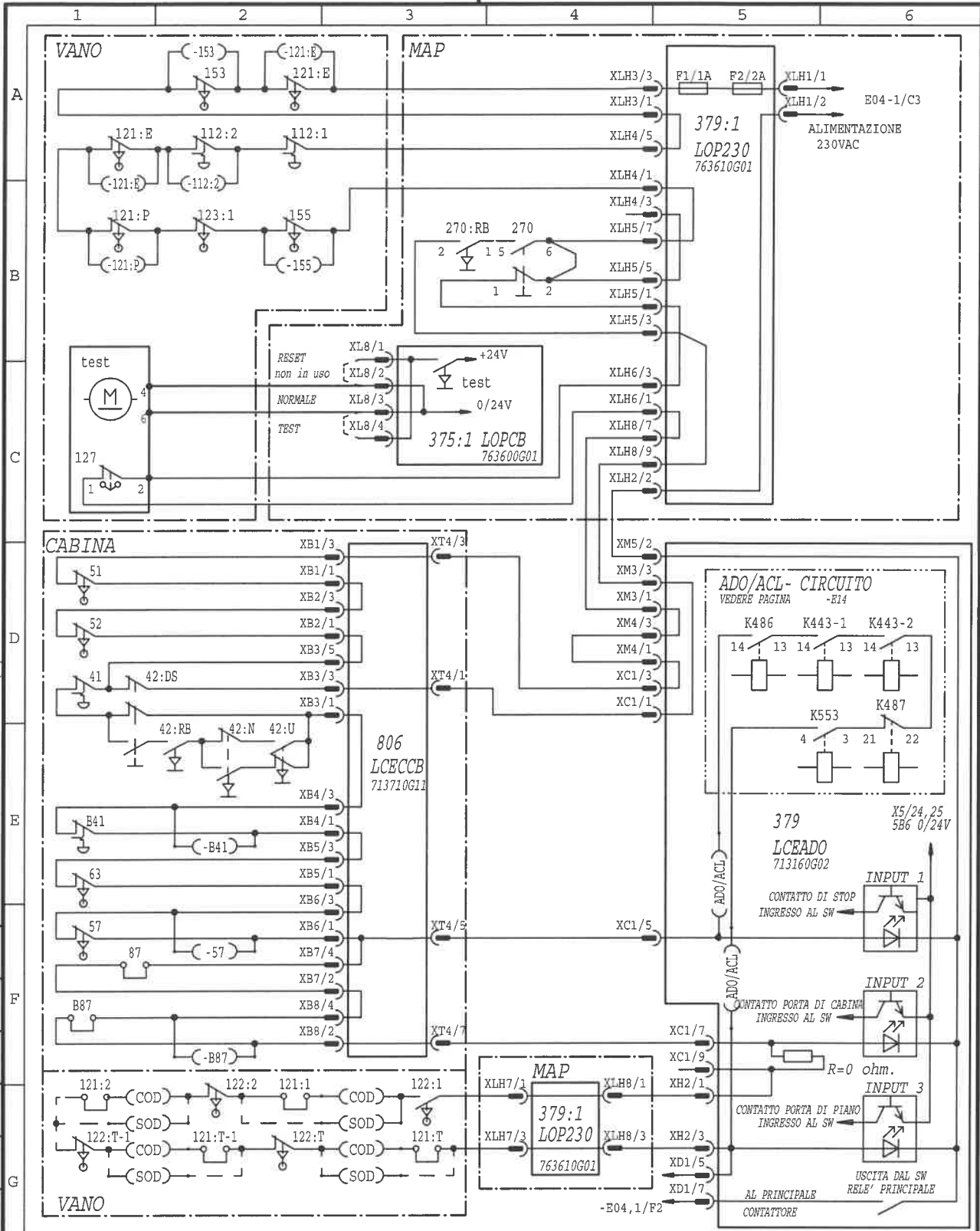
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Dept. <b>RES</b>	Date <b>29.10.2001</b>	Approver <b>P. Huotari</b>		Product c. <b>LCE</b>



<b>MODULO AZIONAMENTO</b>			
<b>V3F16L</b>			
Sales ref. no. -	Draw. no. <b>781712E04</b>	Issue <b>B</b>	Page <b>2/2</b>

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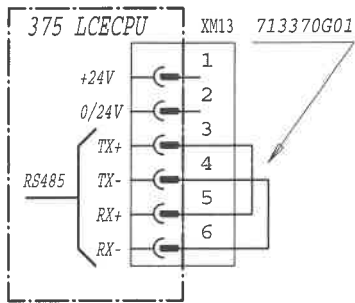
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Designer <b>J. Kantola</b>	Checker <b>A. Jokivalli</b>	Language <b>it</b>
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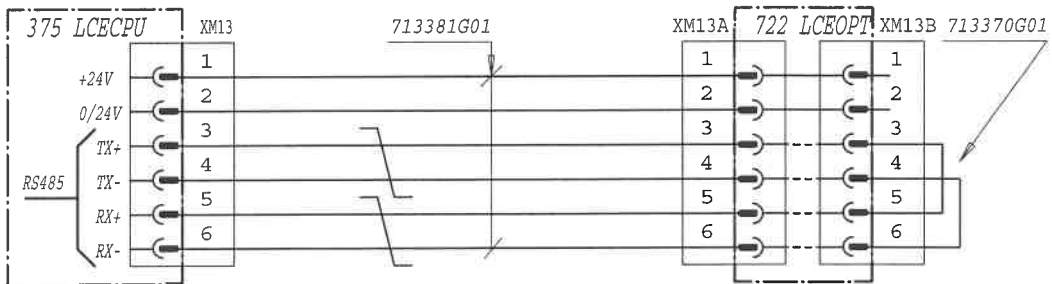


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Sales ref. no. -	Draw. no. <b>811850E05</b>	Page <b>1</b>
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Simplex senza LCEOPT



Simplex con LCEOPT

				Designed by <b>T. SYRMAN</b>		Checked by <b>HRCKVA</b>		Language <b>it</b>	
				Dept. <b>ECC</b>		Date <b>12.06.1998</b>		Approved by <b>HECATA</b>	
				Date		Product code <b>LCE</b>			
Issue				Change description				Date	
				Des. by		Appr. by			
				<b>COLLEGAMENTO OPZIONI PC-BOARD</b> <b>SIMPLEX</b>					
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-				713310E06		-		1	

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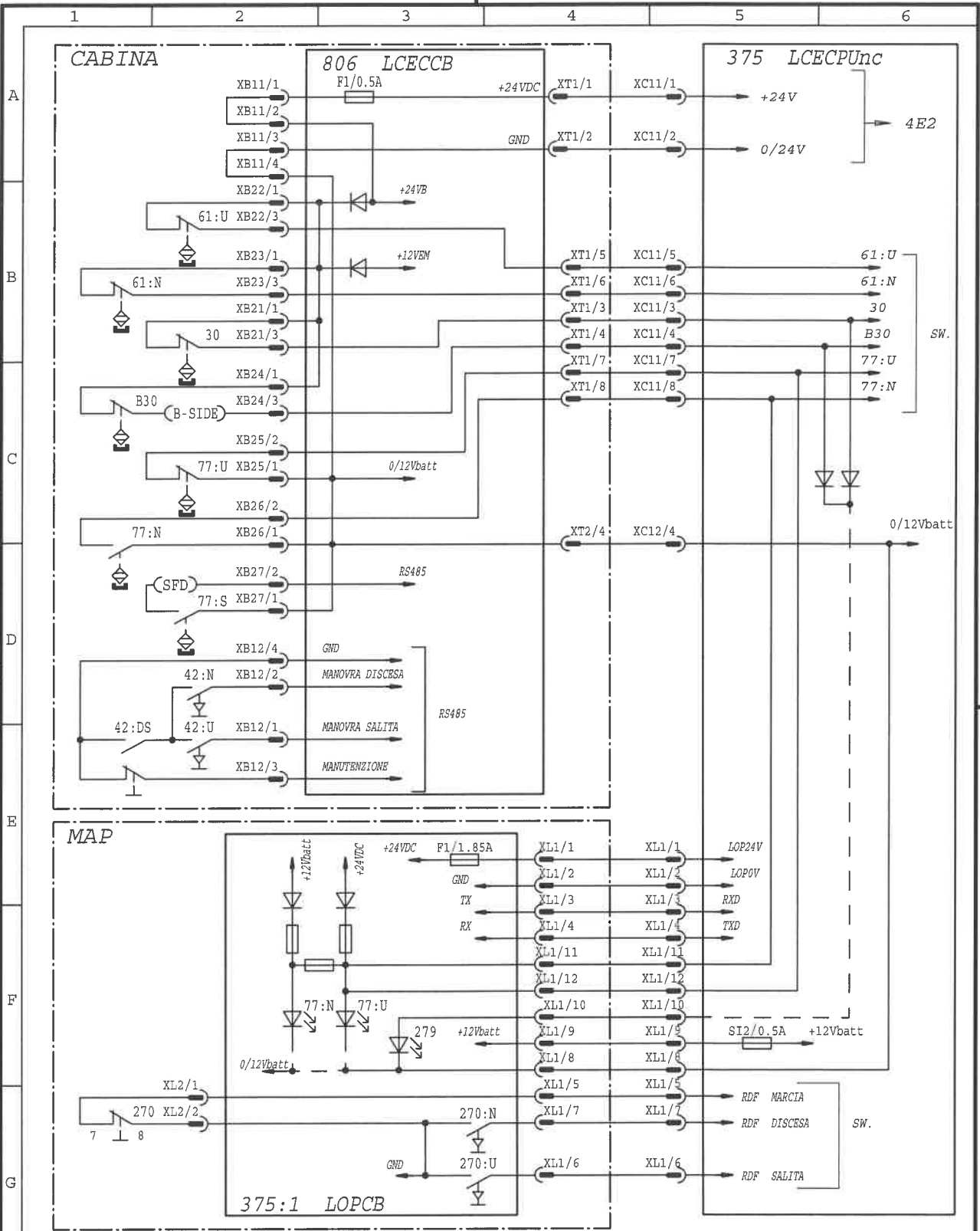
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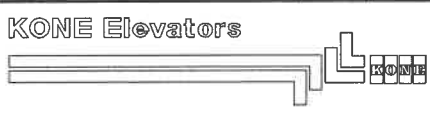
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Issue	Change	Date	Des	Appr

Designer <b>J. Kantola</b>	Checker <b>A. Jokivalli</b>	Language <b>it</b>
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Product c. <b>LCE</b>		

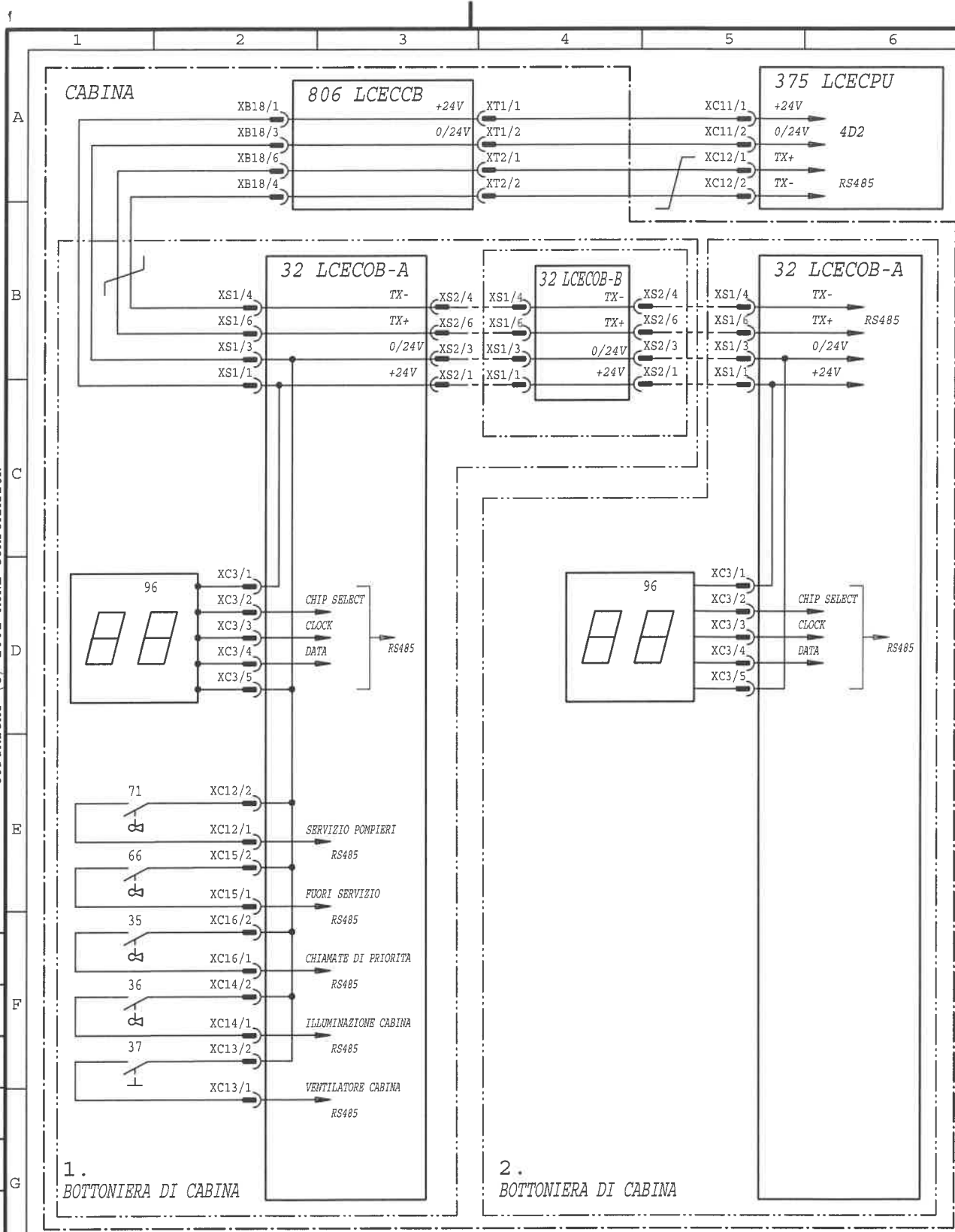


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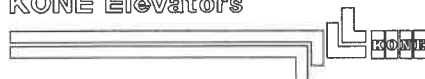
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Issue	Change	Date	Des	Appr
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Designer	Checker	Language
J. Kantola	A. Jokivalli	it
Dept.	Date	Approver
ECC	31.07.2001	P. Huotari
Product c.		LCE

KONE Elevators



SEGNALI IN CABINA

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Sales ref. no.	Draw. no.	Issue	Page
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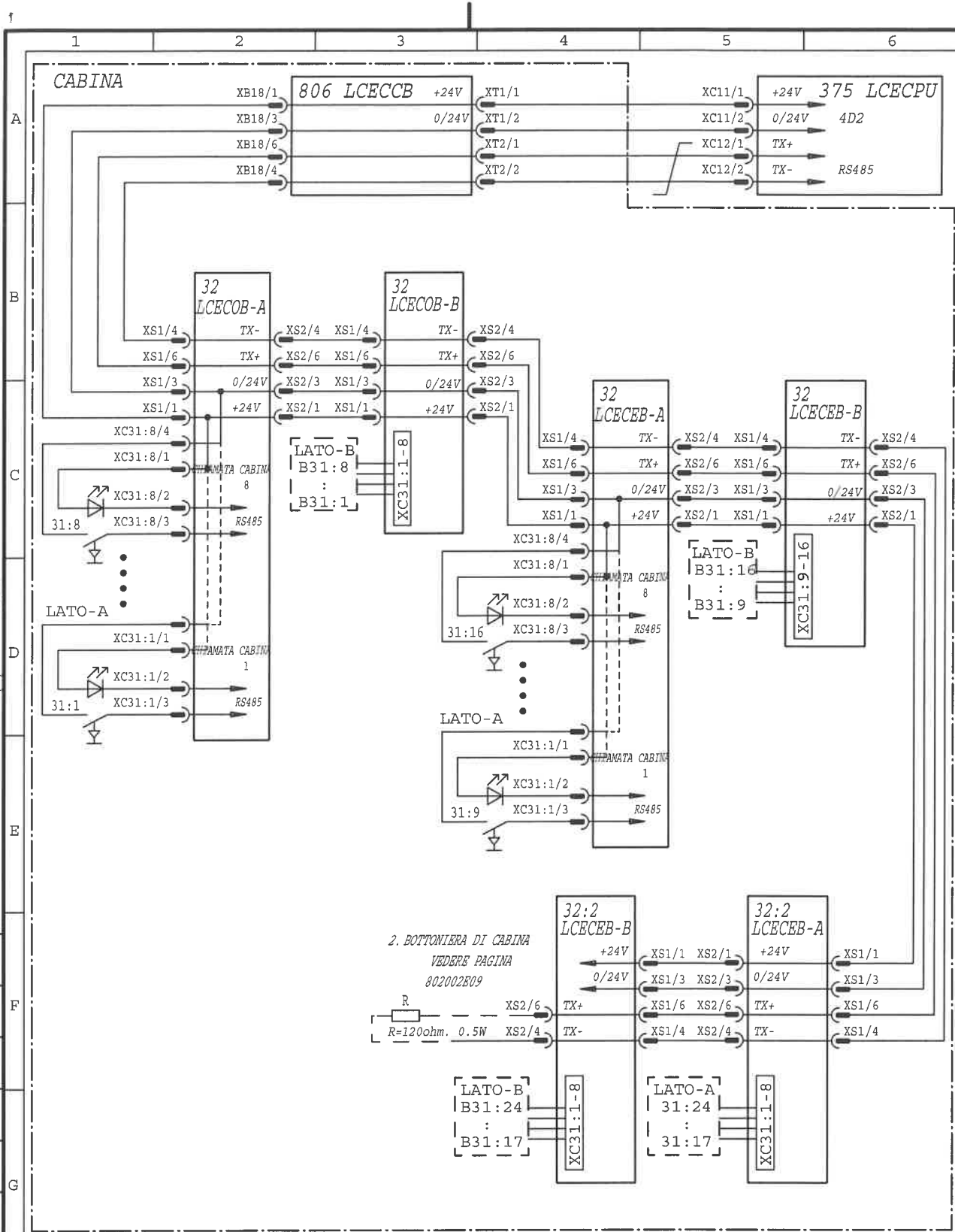
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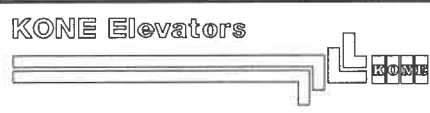
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Issue	Change	Date	Des	Appr
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Designer	J. Kantola	Checker	A. Jokivalli	Language	it
Dept.	ECC	Date	31.07.2001	Approver	P. Huotari
				Product c.	LCE



CHIAMATE CABINA  
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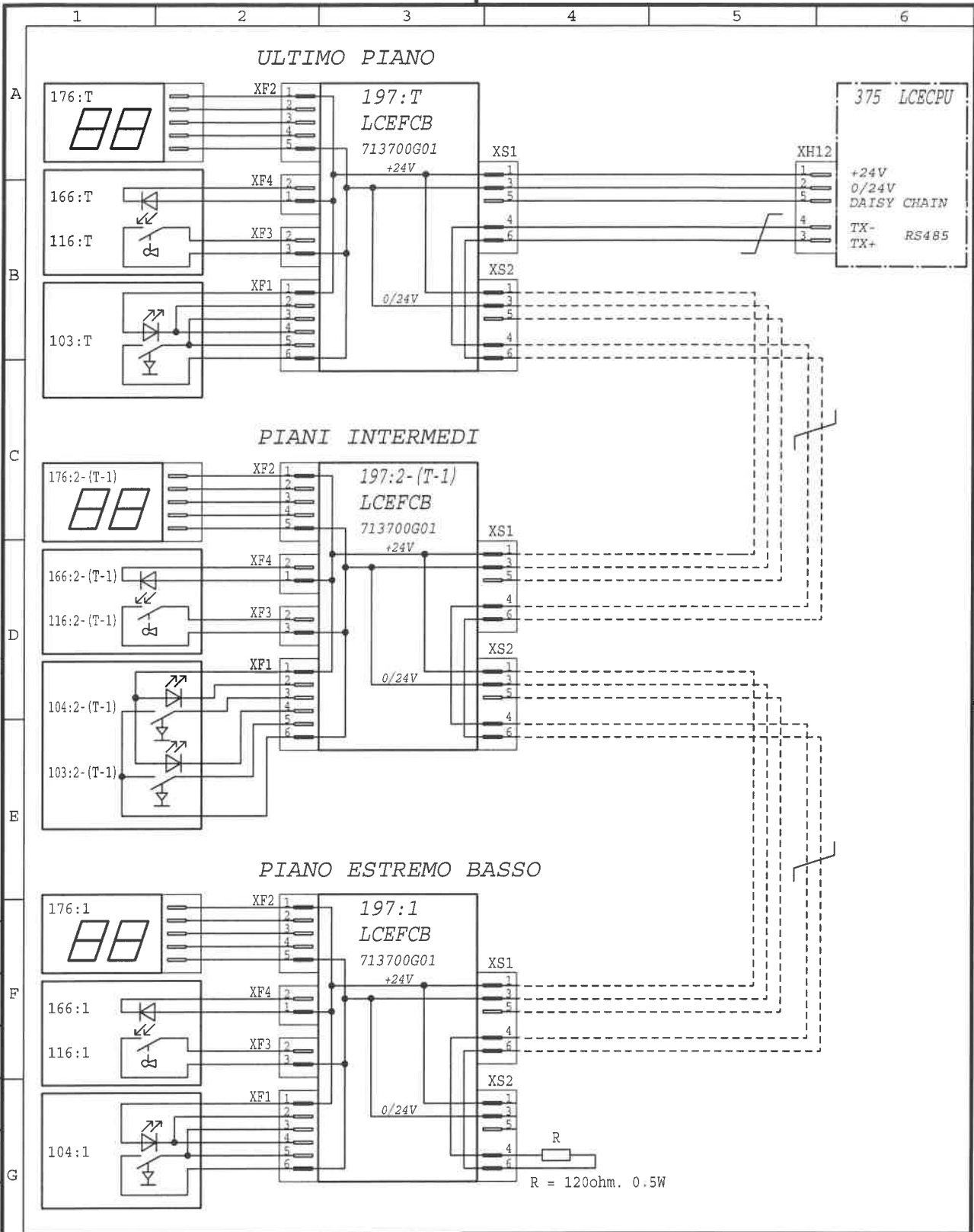
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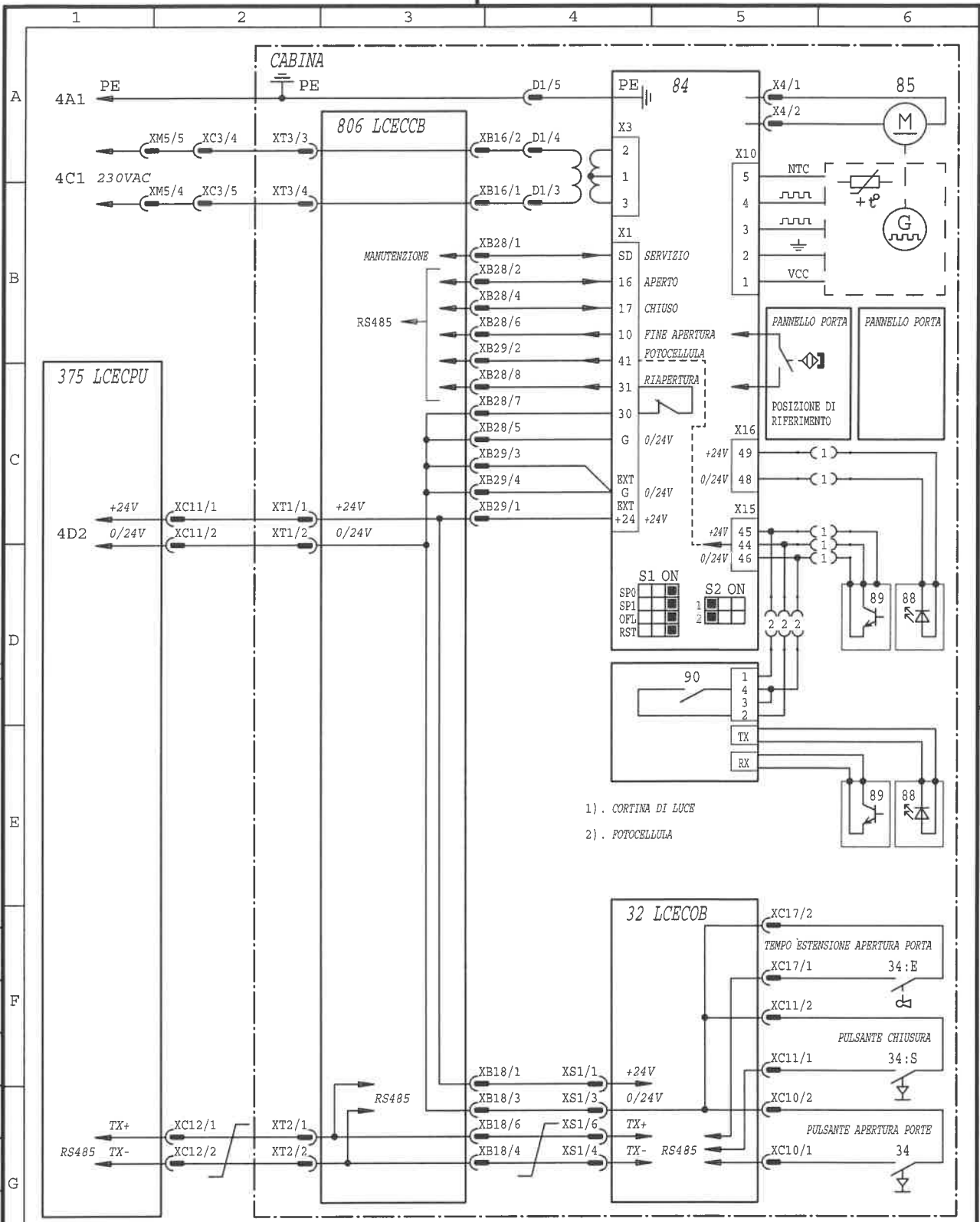
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Dept.	ECC	Date	12.06.1998	Approver	HECATA
				Product c.	LCE



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(FC)

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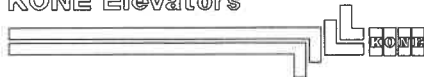


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- 2). POTOCELLULA

Issue	Change	Date	Des	Appr

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Product c. <b>LCE</b>		

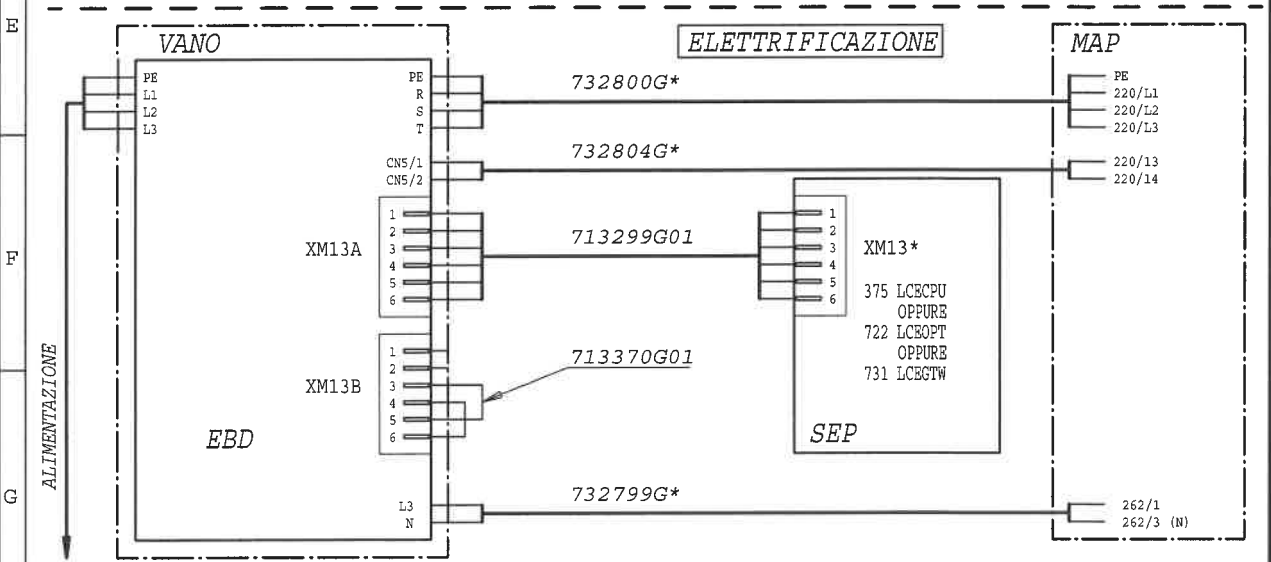
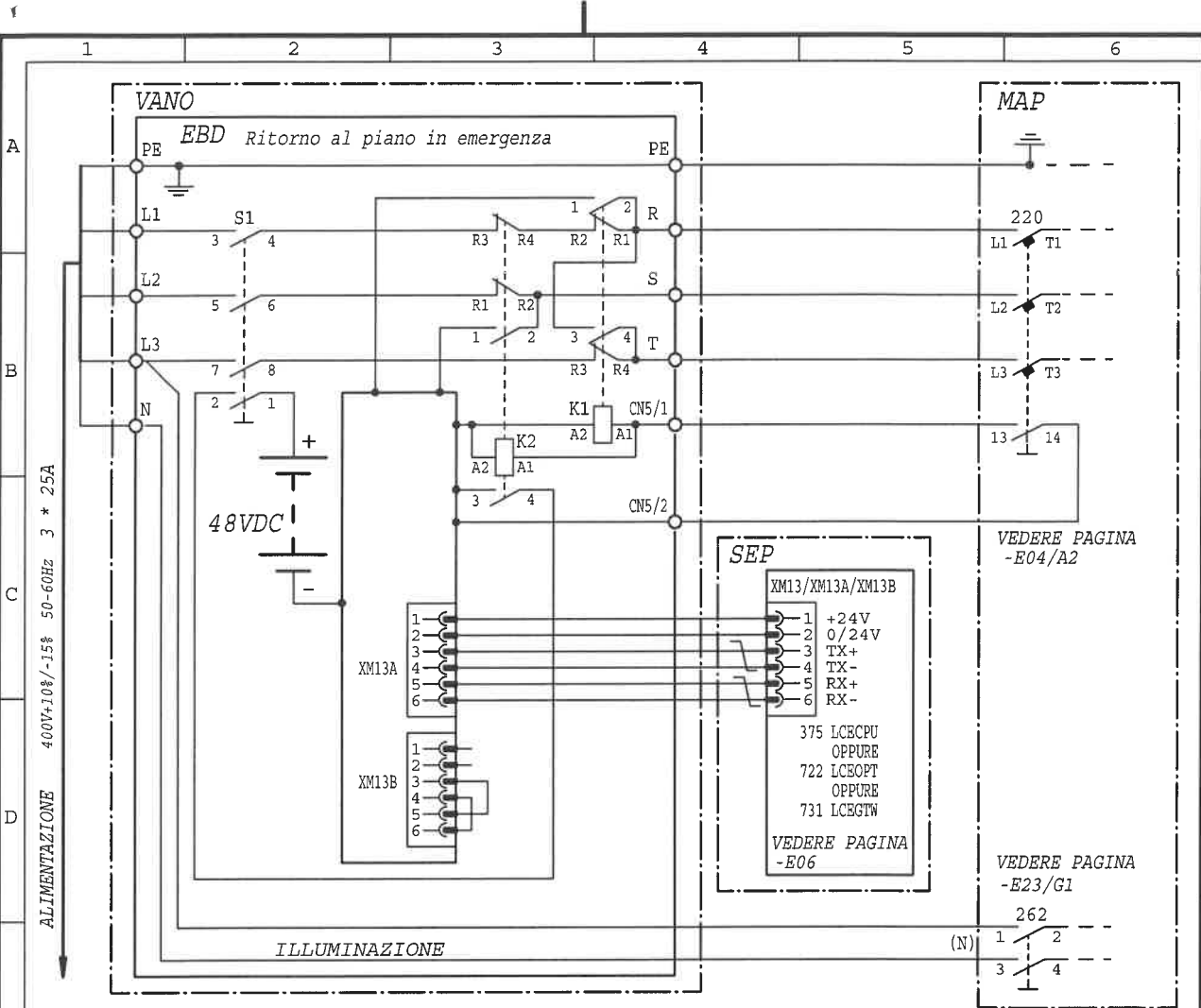
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**MODULO PORTE**

**AMD-A MARCIA 1**

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Issue	Change description	Date	Des. by	Appr. by

Designed by <b>T. Tinti</b>	Checked by <b>A. Jokivalli</b>	Language <b>it</b>
Dept. <b>RES</b>	Date <b>29.10.2001</b>	Approved by <b>P. Huotari</b>
Product code <b>LCE</b>		



**EBD EMERGENCY BATTERY DRIVE**

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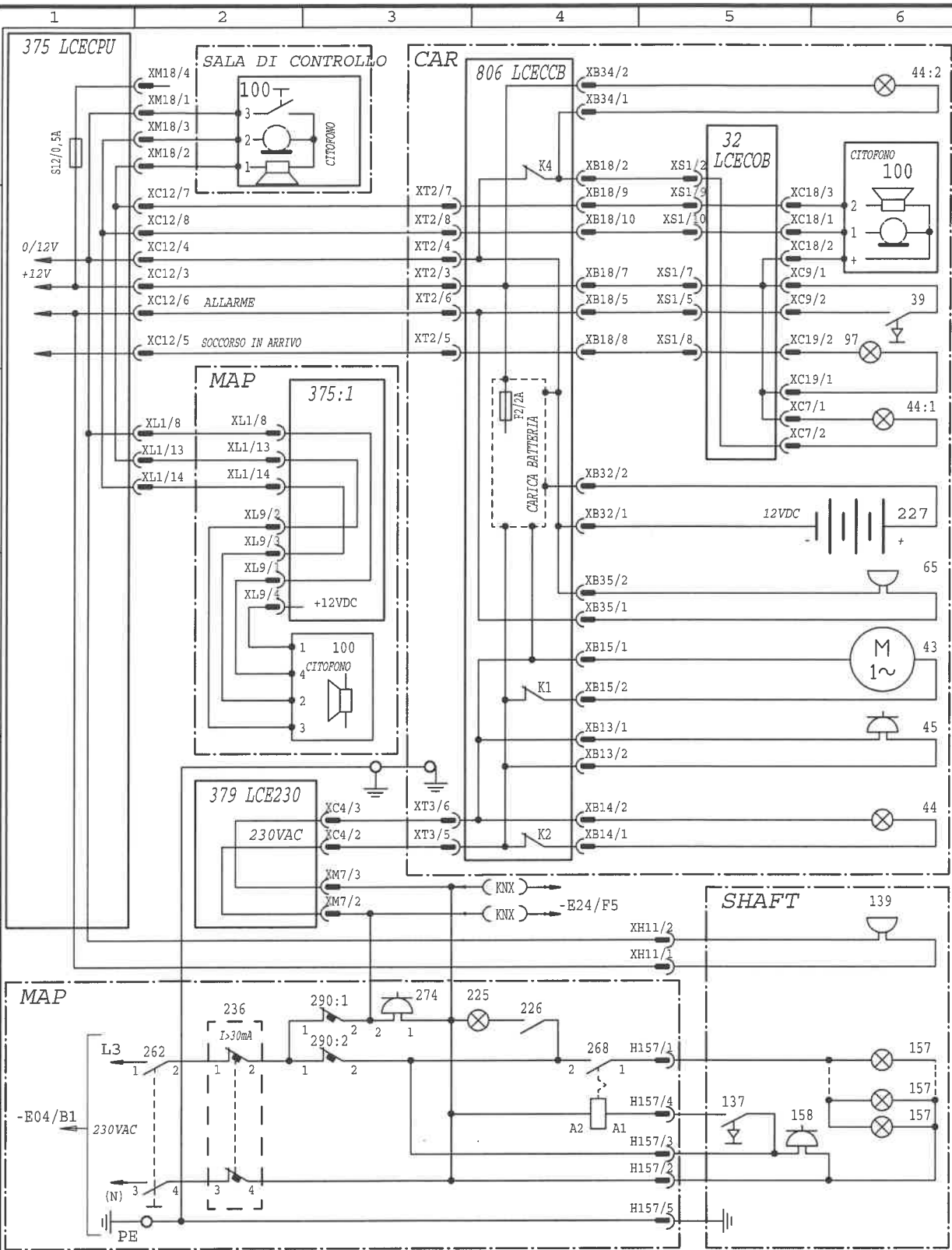
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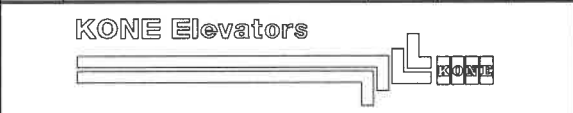
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Designer	T. Tinti		Checker	A. Jokivalli		Language	it	
Dept.	RES	Date	29.10.2001	Approver	P. Huotari		Product c.	LCE

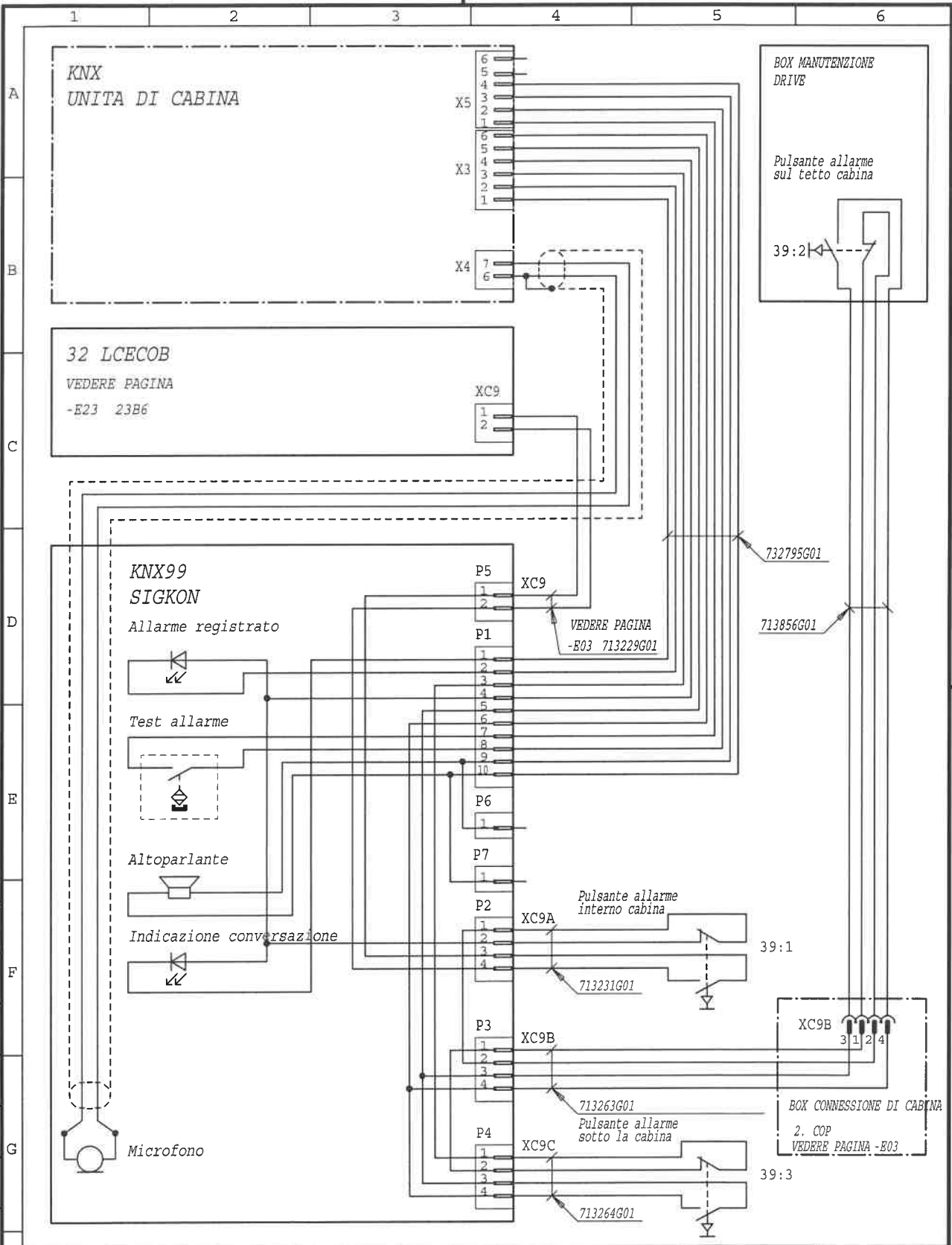


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Sales ref. no.	Draw. no.	Issue	Page
	781711E23	-	1

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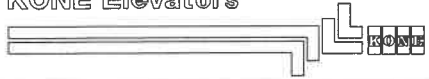
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E	Added comment see page E03	6/6/01	JKa	
D	New version of SIGKON	02.10.00	finobj	
Issue	Change description	Date	Des. by	Appr. by

Designed by	T. SYRMAN		Checked by	HRCKVA	Language	it	
Dept.	ECC	Date	12.06.1998	Approved by	HECATA	Product code	LCE

KONE Elevators

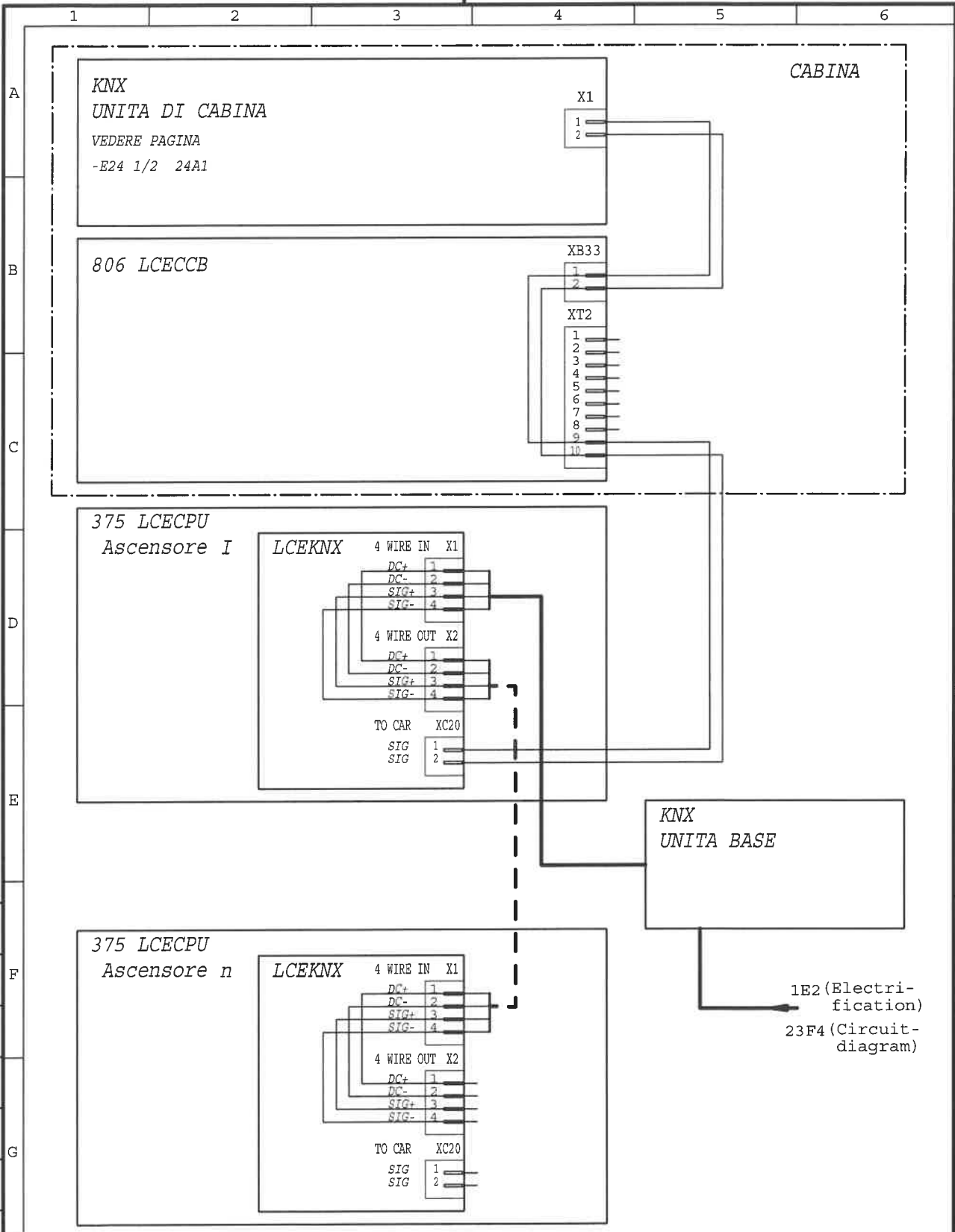


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**KNX**

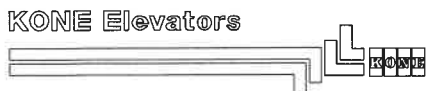
Sales ref. no.	-	Drawing no.	713310E24	Issue	E	Page	1/2
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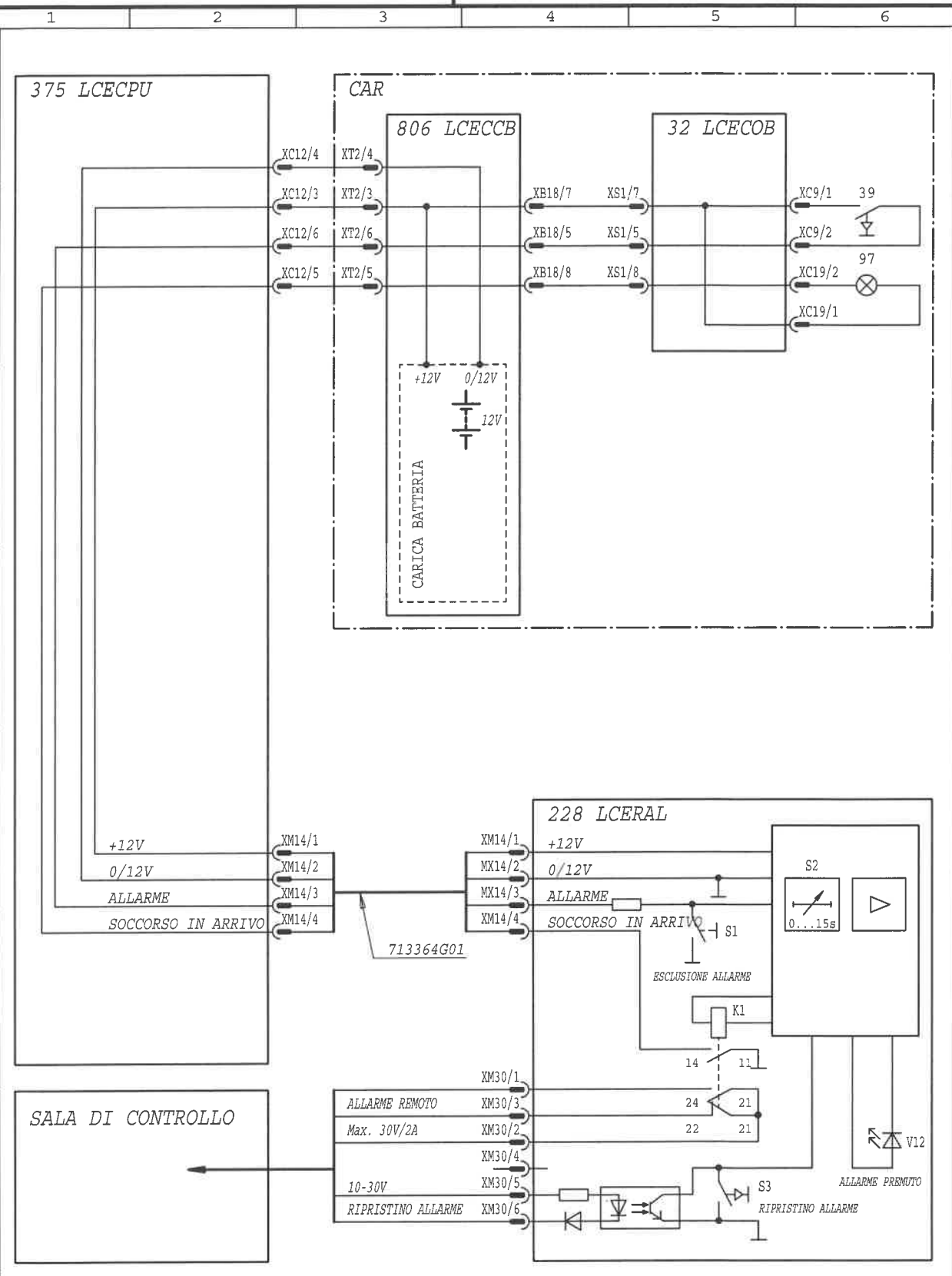


E	Added comment see page E03 (Pagel)	6/6/01	JKa	Designed by <b>T. SYRMAN</b>	Checked by HRCKVA	Language it
D	Changed contact numbers of X1/KNX	02/10/00	finobj	Dept. ECC	Date 12.06.1998	Approved by HECATA
Issue	Change description	Date	Des. by	Appr. by		Product code LCE



**DISPOSITIVI IN AGGIUNTA**  
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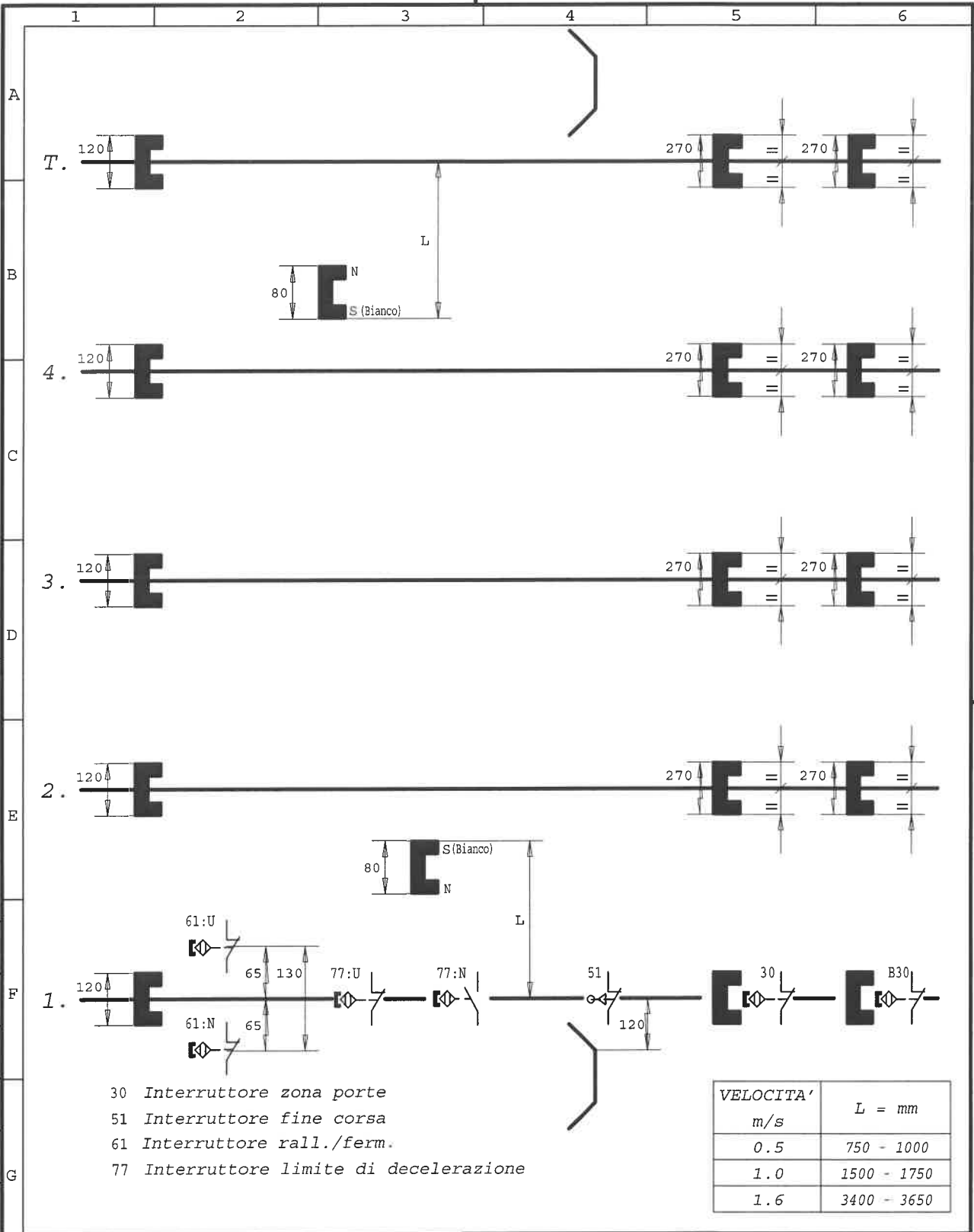
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Issue		Change description	Date	Des. by	Appr. by	Designed by <b>T. SYRMAN</b>	Checked by <b>HRCKVA</b>	Language <b>it</b>
						Dept. <b>ECC</b>	Date <b>12.06.1998</b>	Approved by <b>HECATA</b>
						<b>LCE ALLARME REMOTO</b>		
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Issue	Change	Date	23/01	Des	JKa	Appr
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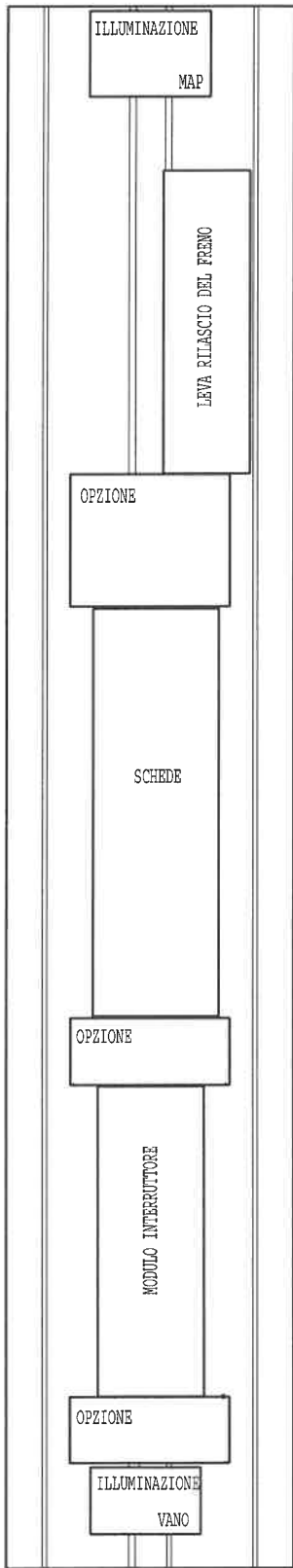
Designer	T. SYRMAN	Checker	HRCKVA	Language	it
Dept.	ECC	Date	12.06.1998	Approver	HECATA
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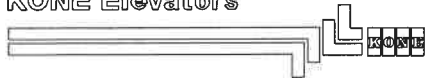
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A	Reference 811850E91 added	20/02	JKa	
Issue	Change description	Date	Des. by	Appr. by

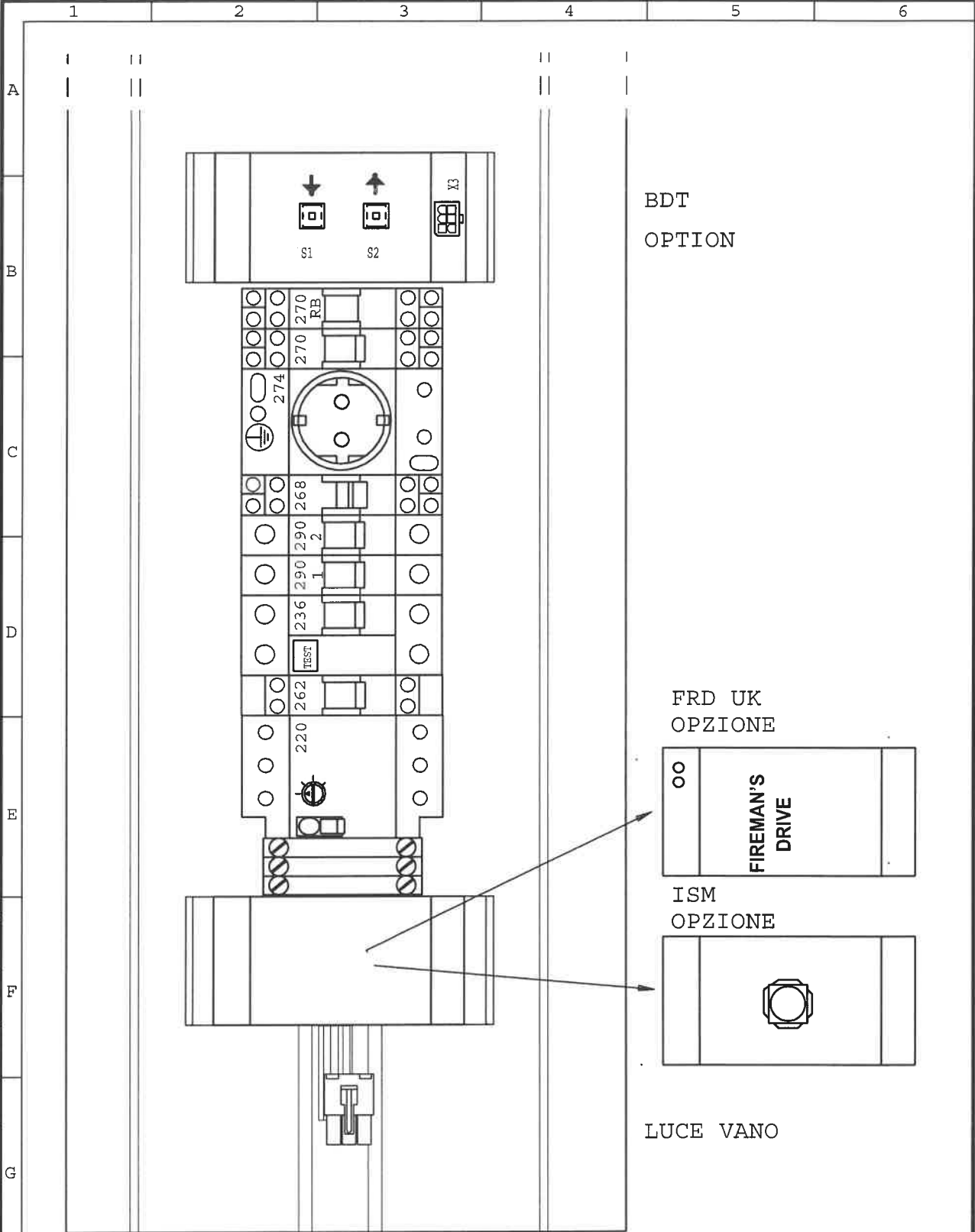
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Product code LCE		

KONE Elevators



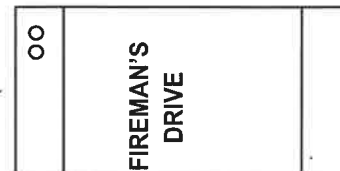
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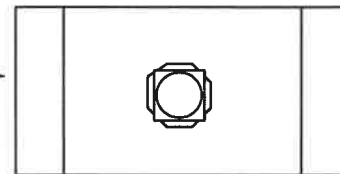


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LUCE VANO

Issue	Change description	Date	Des. by	Appr. by

KONE Elevators



Designed by T. Tinti	Checked by	Language it
Dept. RES	Date 29.10.2001	Approved by
Product code LCE		

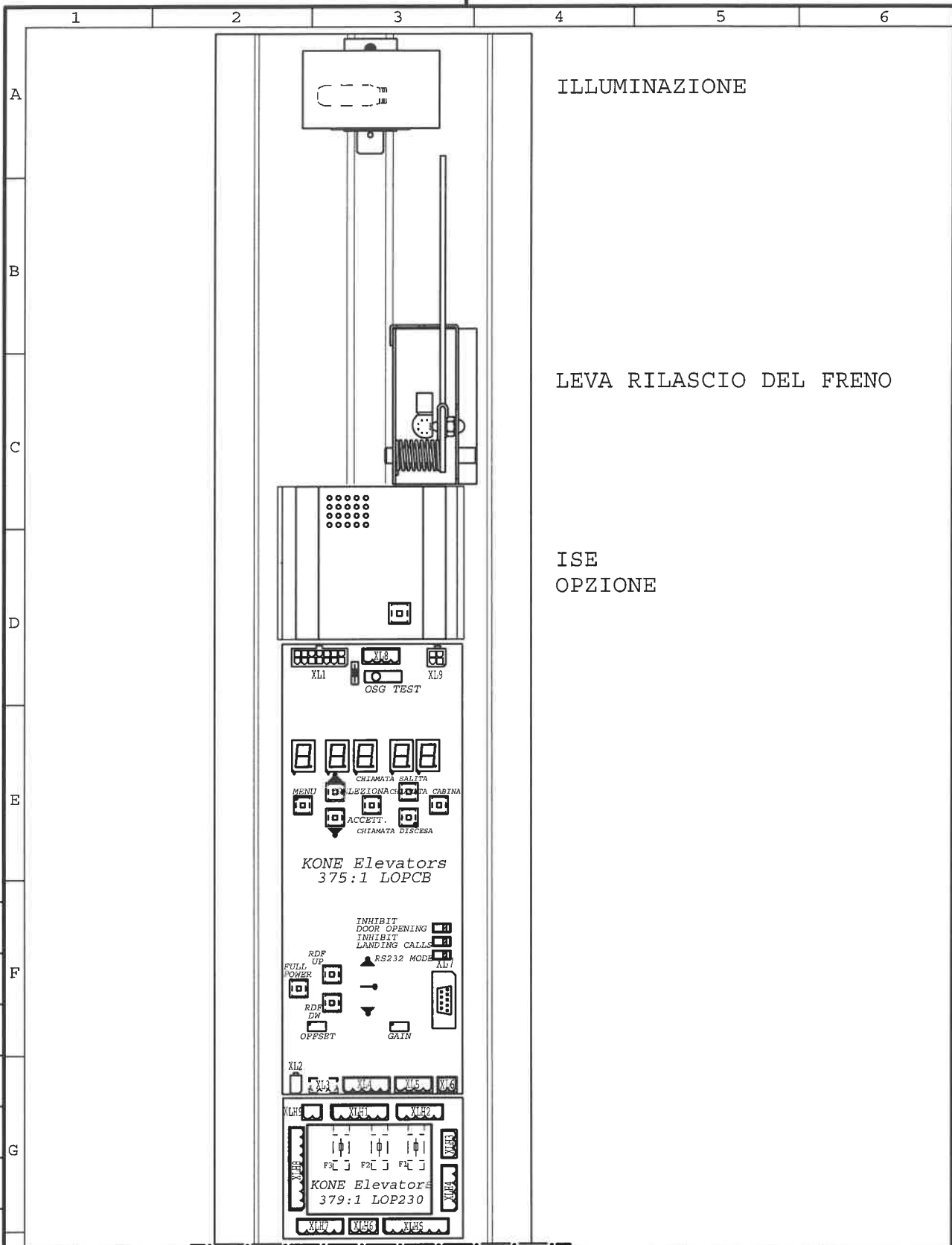
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Sales ref. no. -	Drawing no. 781710E91	Issue -	Page 1
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ILLUMINAZIONE

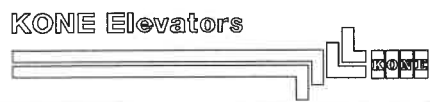
LEVA RILASCIO DEL FRENO

ISE  
OPZIONE

KONE Elevators  
375:1 LOPCB

KONE Elevators  
379:1 LOP230

Issue	Change description	Date	Des. by	Appr. by

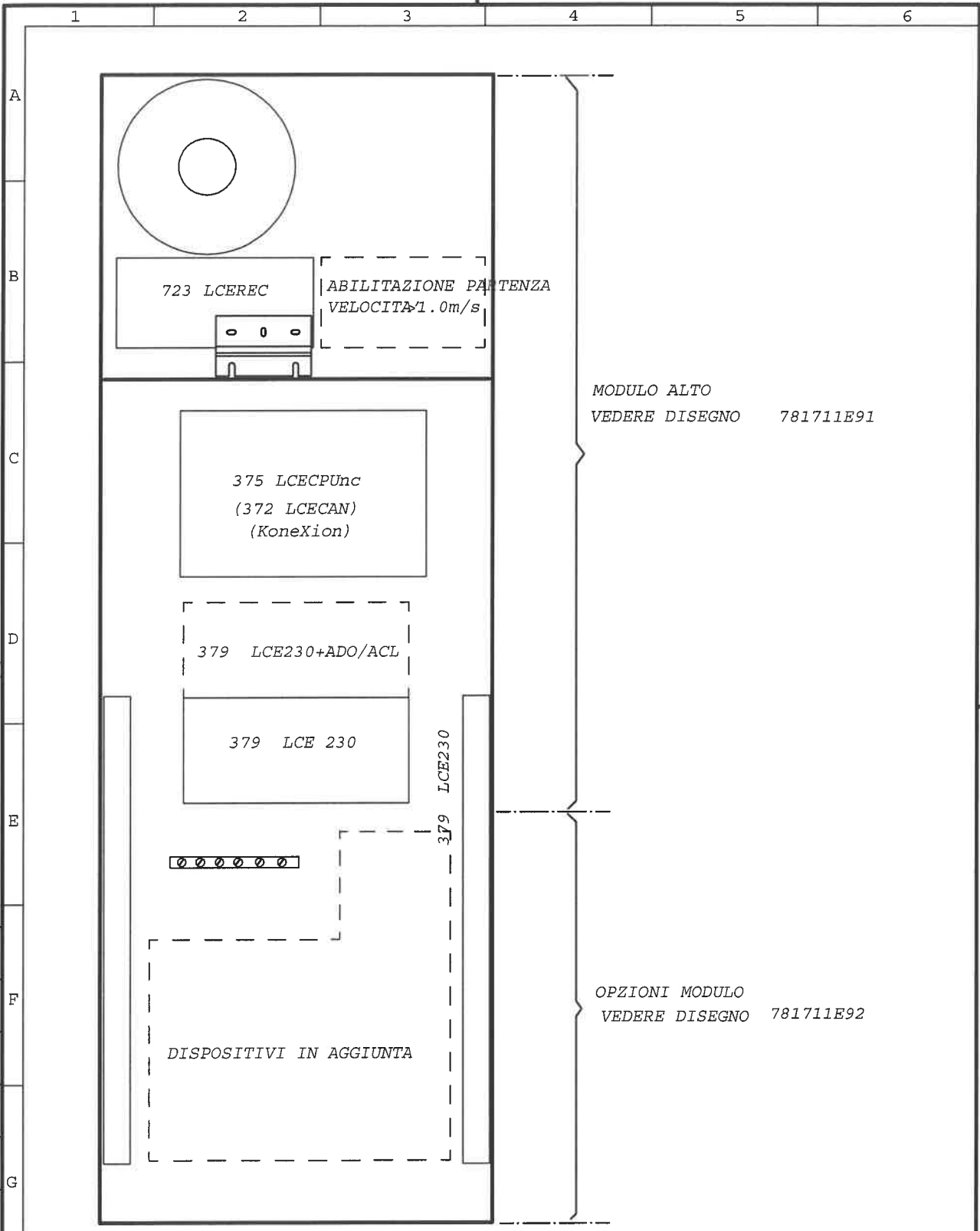


Designed by <b>T. Tinti</b>		Checked by		Language <b>it</b>
Dept. <b>RES</b>	Date <b>29.10.2001</b>	Approved by		Product code <b>LCE</b>
<b>DISPOSIZIONE PER MODULO IN ALTO</b>				
Sales ref. no. <b>-</b>	Drawing no. <b>781710E92</b>	Issue <b>-</b>	Page <b>1</b>	

WIRING DIAGRAM

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MODULO ALTO  
VEDERE DISEGNO 781711E91

OPZIONI MODULO  
VEDERE DISEGNO 781711E92

A	Add start permit Text	09.03	A.Z.	
Issue	Change	Date	Des	Appr

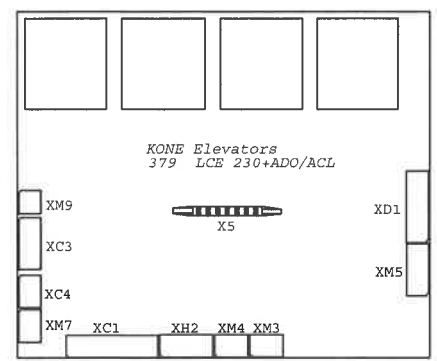
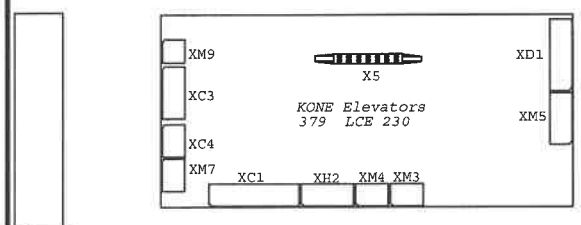
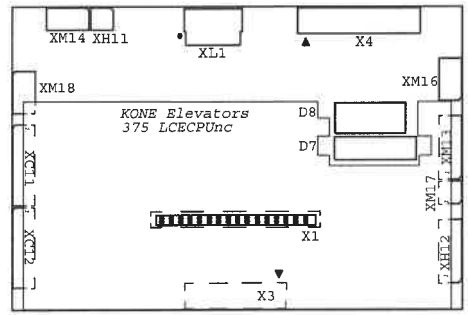
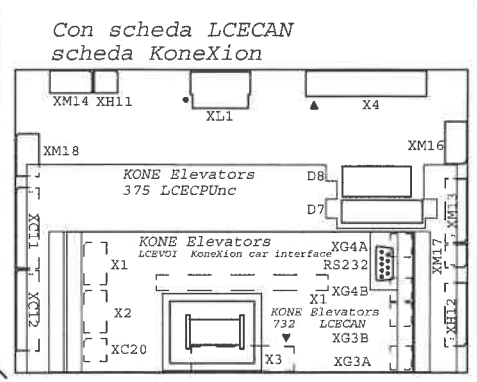
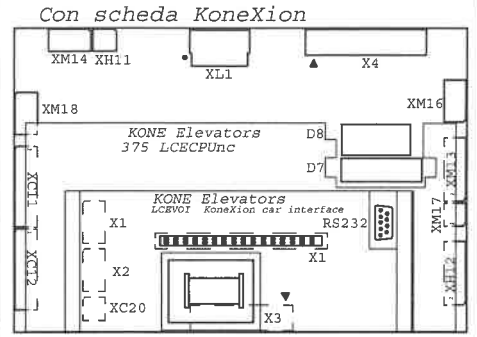
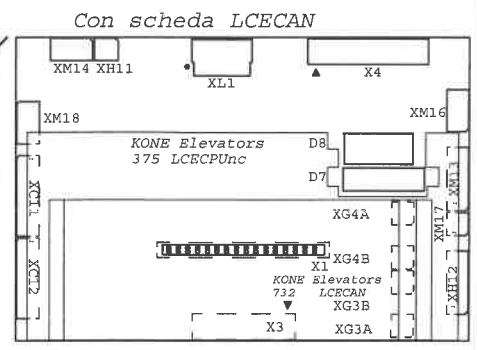
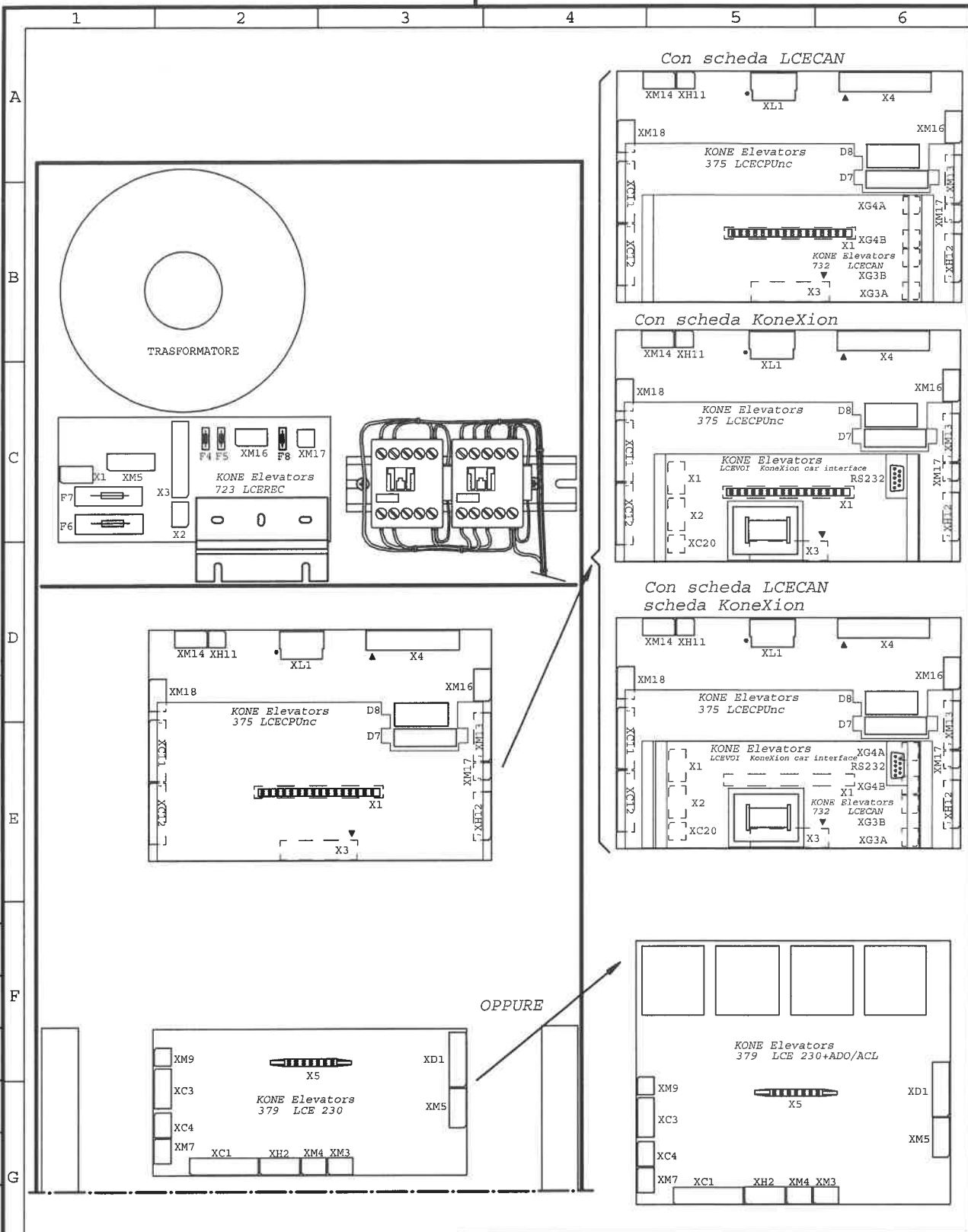


Designer T. Tinti		Checker A. Jokivalli	Language it
Dept. RES	Date 29.10.2001	Approver P. Huotari	Product c. LCE

DISEGNO PER SEP

Sales ref. no. -	Draw. no. 781711E90	Issue A	Page 1
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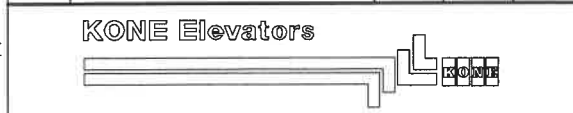
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OPPURE

A Add start permit contactor		09.03	A.Z.	
Issue	Change	Date	Des	Appr

Designer T. Tinti		Checker A. Jokivalli		Language it
Dept. RES	Date 29.10.2001	Approver P. Huotari		Product c. LCE

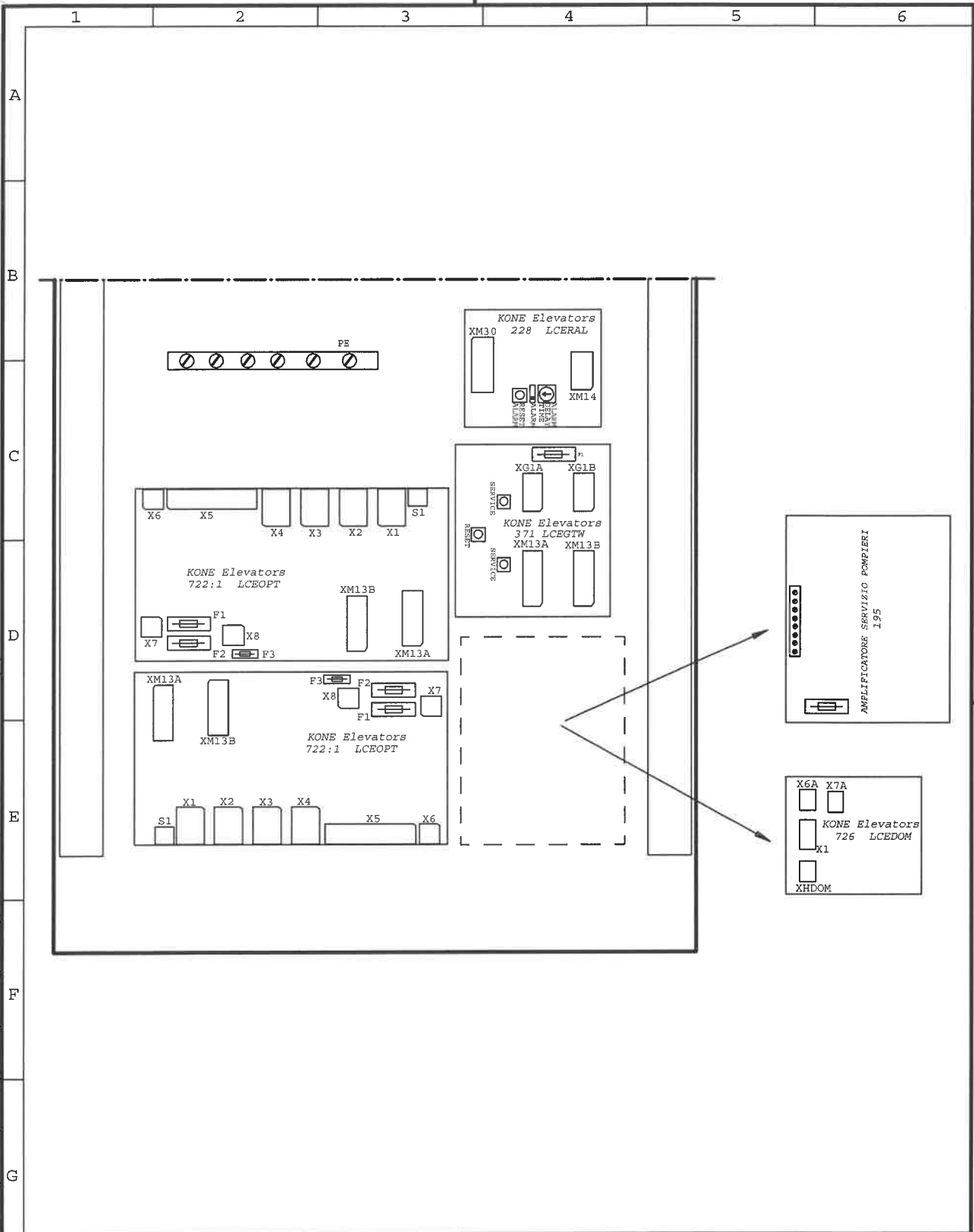


DISPOSIZIONE PER MODULO IN ALTO

Sales ref. no. -	Draw. no. 781711E91	Issue A	Page 1
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					Designer T. Tinti		Checker A. Jokivalli		Language it		
					Dept. RES		Date 29.10.2001		Approver P. Huotari		
					Date		Des		Appr		
Issue					Change						
Date					Des					Appr	
					DISEGNO PER OPZIONI MODULO						
Sales ref. no.					Draw. no.			Issue		Page	
-					781711E92			-		1	

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1                      2                      3                      4                      5                      6

A

SIGMA/DELTA CHIAMATE E SEGNALI

VEDERE PAGINA

	SIGMA	DELTA	NOTE
-E02	713872G0*	661522-24G0*	Chiamate e segnali di piano
B	-E03	713220G0*	(100) Citofono
		713229G0*	(39) KNX/Allarme
		713834G0*	(34) Pulsante apertura porte
		713835G0*	(34:S) Pulsante chiusura porta
		713221G0*	(34:E) Estensione apertura porta
		713838G0*	(36) Illuminazione cabina
		713837G0*	(37) Ventilatore cabina
C		713819G0*	(96) Posizione cabina
	(&-E09)	713218G0*	661520-21G0* (31:*) Pulsanti chiamata cabina oppure 751222G0*
D	-E24	713231G0*	(39:1) Pulsante allarme
		713229G0*	(39) KNX/Allarme

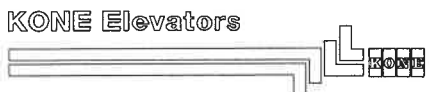
EURECA/MCD DIAGRAMMA CAVI CABINA

VEDERE PAGINA

	EURECA	MCD	NOTE
E	-E03	713203G0*	(52) Contatto paracadute
		713204G0*	(57) Contatto uscita di emergenza
		713201G0*	(43) Ventilatore cabina
		713200G0*	(44) Illuminazione cabina
F			
G			
H			

MONOSPACE      TRANSYS      NOTE

-E03      713859G0\*      728783G0\*      (51) Interruttore fine corsa

C	36 cable added	20/02	JKa	Designed by P. Laiho	Checked by A. Jokivalli	Language it
B	(51) cable added	35/01	JKa	Dept. ECC	Date 20.03.2000	Approved by A. Tamminen
	Issue	Change description	Date	Des. by	Appr. by	Product code LCE
				MCD/DELTA ELETRIFICAZIONE		
				SPECIFICAZIONE		
				Sales ref. no. -	Drawing no. 771664	Issue C
						Page 1

WIRING DIAGRAM

# LIBRETTO DI ESERCIZIO ASCENSORE conforme alla Dir. 95/16/CE

Installato nello Stabile di proprietà COMUNE DI TORINO

Installato in \_\_\_\_\_ VIA GHEDINI 2

Nel Comune di \_\_\_\_\_ TORINO TO

Installatore \_\_\_\_\_ Kone S.p.A.

N° di impianto \_\_\_\_\_ 10311950

Matricola \_\_\_\_\_



## 1. DESCRIZIONE DELL'ASCENSORE

Installato nel comune di ..... TORINO TO  
All'indirizzo ..... VIA GHEDINI 2  
Proprietario ..... COMUNE DI TORINO  
Installatore ..... Kone S.p.A.  
N° di impianto ..... 10311950  
Modello ..... PW10/10-19  
N° dei disegni di disposizione ..... 10311950  
Numero di fermate ..... 6  
Corsa ..... 17,630 m  
Portata nominale Q ..... 800 kg  
Capienza ..... 10 persone  
Velocità nominale ..... 1,00 m/s  
Tensione ..... 380 V  
Frequenza ..... 50 Hz  
Potenza ..... 5,7 kW  
Tipo di azionamento ..... ELETTRICO MONOSPACE  
N Funi ..... 6  
Tipo funi ..... PAWO  
Normativa di riferimento ..... Dir. 95/16/CE

Esame finale eseguito il ..... 19/09/2003

Ascensore messo in servizio il .....

**2. SUCCESSIVI EVENTUALI CAMBIAMENTI DEL PROPRIETARIO O DEL  
LEGALE RAPPRESENTANTE**

Ragione sociale .....

Indirizzo .....

..... li .....(timbro e firma).....

Ragione sociale .....

Indirizzo .....

..... li .....(timbro e firma).....

Ragione sociale .....

Indirizzo .....

..... li .....(timbro e firma).....

Ragione sociale .....

Indirizzo .....

..... li .....(timbro e firma).....

Ragione sociale .....

Indirizzo .....

..... li .....(timbro e firma).....

### **3. DITTA INCARICATA DELLA MANUTENZIONE**

#### **Dichiarazione da redigere prima di porre in uso l'ascensore**

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne la manutenzione alla ditta

.....  
che l'assume ai sensi e per gli effetti degli artt. 12 e 15 del DPR 30.04.1999, n.162 e della L. 5.03.1990, n. 46.  
La Ditta di manutenzione Il Proprietario

#### **eventuali successivi cambiamenti della Ditta di manutenzione**

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne la manutenzione alla ditta

.....  
che l'assume ai sensi e per gli effetti degli artt. 12 e 15 del DPR 30.04.1999, n.162 e della L. 5.03.1990, n. 46.  
La Ditta di manutenzione Il Proprietario

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne la manutenzione alla ditta

.....  
che l'assume ai sensi e per gli effetti degli artt. 12 e 15 del DPR 30.04.1999, n.162 e della L. 5.03.1990, n. 46.  
La Ditta di manutenzione Il Proprietario

**4. SOGGETTO INCARICATO DELLE VERIFICHE PERIODICHE**

**Dichiarazione da redigere prima di porre in uso l'ascensore**

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne l'incarico per l'esecuzione delle verifiche periodiche a

.....  
 che l'assume ai sensi e per gli effetti dell'art. 12, comma 2, lettera f) del DPR 162/99.

per l'organismo notificato

Il Proprietario

\_\_\_\_\_

\_\_\_\_\_

**eventuali successivi cambiamenti del soggetto incaricato delle verifiche periodiche**

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne l'incarico per l'esecuzione delle verifiche periodiche a

.....  
 che l'assume ai sensi e per gli effetti dell'art. 12, comma 2, lettera f) del DPR 162/99.

per l'organismo notificato

Il Proprietario

\_\_\_\_\_

\_\_\_\_\_

Il sottoscritto ..... in qualità di  
 Proprietario;  Legale Rappresentante dello stabile ove è installato l'impianto avente

n° di matricola.....

a far data dal ..... dichiara di affidarne l'incarico per l'esecuzione delle verifiche periodiche a

.....  
 che l'assume ai sensi e per gli effetti dell'art. 12, comma 2, lettera f) del DPR 162/99.

per l'organismo notificato

Il Proprietario

\_\_\_\_\_

\_\_\_\_\_

**5. COMPONENTI DI SICUREZZA**

<i>Elenco dei componenti</i>	<i>Tipo di componente</i>	<i>N° certificato</i>
Dispositivi di blocco delle porte di piano	AMDL2-R1	TÜV-A-AT-1/98/004CETV/1
Paracadute della cabina	SGB08	FI97-978/1
Limitatore di velocità della cabina	OL35	TÜV-A-AT-1/98/001CEGB
Ammortizzatori della cabina	AUTAN 5	AP002/300184
Ammortizzatori del contrappeso	AUTAN 5	AP002/300184
Valvola di blocco o limitatrice di flusso	---	---
Dispositivo contro l'eccesso di velocità verso l'alto	OL35 + FRENI	TÜV-A-AT-1/98/001 CEGB NL.97.400.1002.002.03
Paracadute del contrappeso	SGB05	TÜV-A-AT-1/99/004CEFV
Limitatore di velocità del contrappeso	---	---









**7. REGISTRO DELLE VISITE SEMESTRALI**

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no



Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:

sì

no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:

sì

no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no



Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
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Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
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Valvola di caduta	
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Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:                      sì                       no



Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:

sì

no

Data	Ditta incaricata della visita semestrale	Incaricato	Firma

Dispositivo	Riscontro
Funi e loro attacchi	
Circuito di manovra	
Controllo porte e dispositivi di blocco	
Limitatore di velocità e paracadute	
Extracorsa	
Condizioni di isolamento dei circuiti	
Efficienza dei collegamenti a terra	
Funzionamento dell'impianto	
Dispositivo limitatore di eccessiva velocità in salita della cabina	
Valvola di caduta	
Ammortizzatori	
Conservazione e manutenzione dell'impianto	

L'ascensore può essere mantenuto in esercizio:

sì

no











## LISTA DEI CERTIFICATI "CE" PER I COMPONENTI DI SICUREZZA

Nome del Costruttore	Kone S.p.A.
Indirizzo del Costruttore	Via Figino, 41 20016 Pero (MI)
Prodotto	<i>ASCENSORE ELETTRICO MONOSPACE</i>
Conforme alla	Dir. 95/16/CE
Numero di impianto	10311950
Anno d'installazione	2003
Indirizzo dell'ascensore	VIA GHEDINI 2
Proprietario	COMUNE DI TORINO
Installatore	Kone S.p.A.

MODELLO	Organismo che ha effettuato l'esame CE del tipo dell'ascensore modello	N° certificato
PW10/10-19	LIFTINSTITUUT (n id. 0400)	NL.97.400.1002.002.06

<i>Elenco dei componenti</i>	<i>Tipo di componente</i>	<i>N° certificato</i>
Dispositivi di blocco delle porte di piano	AMDL2-R1	TÜV-A-AT-1/98/004CETV/1
Paracadute della cabina	SGB08	FI97-978/1
Limitatore di velocità della cabina	OL35	TÜV-A-AT-1/98/001CEGB
Ammortizzatori della cabina	AUTAN 5	AP002/300184
Ammortizzatori del contrappeso	AUTAN 5	AP002/300184
Valvola di blocco o limitatrice di flusso	---	---
Dispositivo contro l'eccesso di velocità verso l'alto	OL35 + FRENI	TÜV-A-AT-1/98/001 CEGB NL.97.400.1002.002.03
Paracadute del contrappeso	SGB05	TÜV-A-AT-1/99/004CEFV
Limitatore di velocità del contrappeso	---	---

**D.P.R. 30 APRILE 1999 N. 162 – ARTT. 13 - 14  
VERIFICHE DI ASCENSORI IN SERVIZIO PRIVATO**

Il sottoscritto **Dott. Ing. Antiseri Stefano** ha provveduto il giorno... **17/07/2006**..... alla verifica periodica dell'ascensore elettrico matr... **1272/1561**....num fermate...**6**... impianto num.. **10311950**..installato nello stabile di proprietà/gestione **AEM**... in...**Ghedini** n...**2** ...comune...**Torino**...

**riscontrando:**

Apparato argano-motore..... **efficiente**.....  
Circuito di manovra ..... **protetto**.....  
Funi..... **non presentano fili rotti**.....  
Componenti di sicurezza e di blocco..... **efficienti**.....  
Paracadute ..... **funzionante alla prova**.....  
Conservazione e manutenzione dell'impianto..... **normale**.....  
Funzionamento dell'impianto ..... **nella norma**.....  
Condizioni delle difese ..... **regolari**.....  
Condizioni di isolamento dei circuiti ..... **nella norma**.....

**PRESCRIVENDO:**

- 1) Applicare sul pavimento del locale macchina il tappeto antifolgorazione da 50.000V in prossimità del quadro di manovra.

L'ascensore può essere mantenuto in esercizio ? .....**SI**.....

La ditta di manutenzione

**SIMET****L'INGEGNERE ISPETTORE****Ing. Stefano Antiseri****C.V.E. srl****Sede Legale**

Via R. Grazioli Lante 76 int. 2- 00195 Roma



## CERTIFICATO DI CONFORMITA' REI 60 (AMD)

Il sottoscritto Graziano Portigliotti attesta che l'elemento :

1) descrizione: Porta automatica di piano, apertura telescopica

2) fabbricato da : KONE Ascensori S.p.A. - Via Figino 41, 20016 Pero (MI)

3) tipo : AMDL2V120x210-60

4) nr. Impianto : 10311950 VIA GHEDINI 2 - TORINO PORTATA 800 KG

5) anno di fabbricazione : 2003

è conforme al tipo certificato :

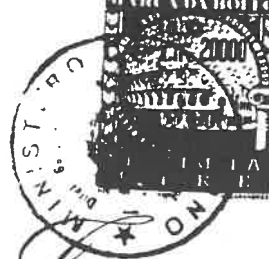
Direttiva : 95/16 /CE

certificato n. 128193/1969RF del 07/07/99 rilasciato da I.G.

Pero il 26/11/03

KONE S.p.A.  
Graziano Portigliotti  
Direttore Tecnico Ascensori





# Ministero dell'Interno

DIREZIONE GENERALE DELLA PROTEZIONE CIVILE  
E DEI SERVIZI ANTINCENDI  
SERVIZIO TECNICO CENTRALE  
ISPETTORATO PER LE ATTIVITÀ E LE NORMATIVE  
SPECIALI DI PREVENZIONE INCENDI

VISTO il Decreto Ministeriale 14 dicembre 1993 concernente **NORME TECNICHE E PROCEDURALI PER LA CLASSIFICAZIONE DI RESISTENZA AL FUOCO ED OMOLOGAZIONE DI PORTE ED ALTRI ELEMENTI DI CHIUSURA**;

VISTO il Decreto Ministeriale 27 gennaio 1999 concernente **RESISTENZA AL FUOCO DI PORTE ED ALTRI ELEMENTI DI CHIUSURA. PROVE E CRITERI DI CLASSIFICAZIONE**;

VISTA l'istanza presentata dalla ditta **KONE ASCENSORI S.p.a.**, sita in Via Figino, 41 - 20016 - **PERO (MI)**, intesa ad ottenere l'omologazione della porta resistente al fuoco di propria produzione denominata **AMDL2V 120x210-60** avente classe di resistenza al fuoco **REI 60**, tipo **PER VANO ASCENSORE** con dimensioni **1550 x 2387 mm**

VISTI il certificato di prova n° **I.G.128193/1969RF**, emesso il **07/07/99** da **ISTITUTO GIORDANO S.p.a.** - Via Rossini 2 - 47041 - **BELLARIA (RN)**, nonché i documenti costituenti parte integrante del certificato stesso;

## SI OMOLOGA

con il numero di codice **MI106REI060P009** il prototipo della porta denominata **AMDL2V 120x210-60**, avente classe di resistenza al fuoco **REI 60**, tipo **PER VANO ASCENSORE CON DIMENSIONI 1550 x 2387 mm** **SCORREVOLE ORIZZONTALMENTE A DUE ANTE UGUALI AD APERTURA TELESCOPICA**, prodotta dalla ditta **KONE ASCENSORI S.p.a.** sita in **Via Figino, 41 - 20016 - PERO (MI)** e se ne **AUTORIZZA** la riproduzione ai sensi del Decreto Ministeriale citato in premessa.

Sul marchio e sulla dichiarazione di conformità, afferenti ad ogni fornitura di porte resistenti al fuoco oggetto della presente omologazione, dovranno essere riportati, oltre ai dati di cui al punto f) dell'art.3 del D.M. 14 dicembre 1993, il numero di codice e la data dell'omologazione stessa.

Si richiamano tutti gli obblighi di legge spettanti al produttore e a tutti i soggetti comunque interessati, a norma del Codice Civile, del Codice Penale e del Decreto Ministeriale 14 dicembre 1993.

Roma, **26 APR. 2000**  
Fasc.4101/140/ 104

IL DIRIGENTE DEL SERVIZIO TECNICO CENTRALE  
(Dott. Ing. Giorgio MAZZINI)

N.B. IL PRESENTE ATTO DI OMOLOGAZIONE  
E' RIPRODUCIBILE UNICAMENTE  
NELLA SUA INTEGRALE STESURA

ISTITUTO POLIGRAFICO E ZECCA DELLO STATO - S

**DICHIARAZIONE "CE" DI CONFORMITA'**  
**Numero di impianto 10311950**

Visto l'esito delle verifiche condotte in conformità alla Direttiva 95/16/CE - DPR 162/99 all. XIII, il sottoscritto **G. Portigliotti**, in qualità di Procuratore della Kone S.p.A. con sede in Via Figino 41 Pero (MI) – P.IVA 12899760156, iscrizione registro imprese n. 05069070158, dichiara che il seguente ASCENSORE.

Installato da .....Kone S.p.A.  
Data verifica finale .....19/09/2003  
Ente collaudatore e N° attestato CE .....KONE S.P.A.  
Tipo ..... Model 3  
Azionamento .....ELETTRICO MONOSPACE  
Portata nominale Q [kg] .....800  
Numero di persone .....10  
Velocità nominale v [m/s] .....1,00  
Corsa [m].....17,630  
Numero di fermate.....6  
Numero di impianto.....10311950  
Nominativo del Proprietario.....S.I.A.R. S.R.L.  
Installato a .....TORINO TO  
Indirizzo .....VIA GHEDINI 2  
Norma tecnica di riferimento .....Dir. 95/16/CE  
Organismo che ha effettuato l'esame CE  
di tipo dell'ascensore.....LIFTINSTITUUT (n id. 0400)  
Buikslotermeerplein, 381 - 1025XE Amsterdam  
Attestato CE .....NL.97.400.1002.002.06  
N° del certificato del Sistema di Qualità.....CE-ASC.13.0001.99/0157  
Organismo che ha verificato il Sistema  
di Qualità..... LLOYD'S REGISTER  
CERTIFICATION S.r.l. (n° id. 0088)  
Via Dell'Orso 4 – 20121 Milano

**È CONFORME ALLE DISPOSIZIONI DELLA NORMA DI RIFERIMENTO**

Avvertenze: il collaudo non ha interessato:

- la normativa antincendio dello stabile nel suo complesso;
- l'eventuale rispondenza a norme per l'accessibilità da parte di disabili;

I punti sopra specificati ricadono sotto la responsabilità del Proprietario.

Pero, 01/10/2003

G. Portigliotti  
KONE S.P.A.  
Procuratore



Copia per il Proprietario

QUESTA DICHIARAZIONE DI CONFORMITA' CE E' SOGGETTA ALLE CONDIZIONI PREVISTE DALLA KONE SPA NELLA PROCEDURA "COLLAUDO E MESSA IN ESERCIZIO DI ASCENSORI A DIRETTIVA 95/16/CE"

**DICHIARAZIONE DI CONFORMITA' DELL'IMPIANTO  
ALLA REGOLA DELL'ARTE**Art. 9 Legge n. 46 del 5 Marzo 1990

Il sottoscritto **G. Portigliotti** in qualità di Procuratore della Kone S.p.A. operante nel settore installazione impianti di sollevamento e movimentazione, con particolare riferimento agli apparecchi elevatori di trasporto per persone e merci, ed ogni correlata attività di riparazione, manutenzione ed assistenza - con sede in Via Figino, 41 - Comune di Pero - Provincia di Milano - P.IVA 12899760156 - iscrizione registro imprese n. 05069070158

esecutrice dell'impianto elevatore                      10311950  
inteso come nuovo impianto  
commissionato da:    S.I.A.R. S.R.L.  
installato nel Comune di:                                    VIA GHEDINI 2 - TORINO TO

**D I C H I A R A •**

sotto la propria responsabilità, che l'impianto è stato realizzato in modo conforme alla regola dell'arte secondo quanto previsto dall'art. 7 della Legge n. 46/1990, tenuto conto delle condizioni di esercizio e degli usi a cui è destinato l'edificio, avendo in particolare:


- seguito la normativa tecnica applicabile all'impiego (Dir. 95/16/CE)
- 
- secondo le "disposizioni per favorire il superamento e l'eliminazione delle barriere architettoniche negli edifici privati" (D.M. 236/89 - L.n.13 del 9/1/89)
- installato componenti e materiali costruiti a regola d'arte e adatti al luogo di installazione, art. 7 della Legge n. 46/1990;
- controllato l'impianto ai fini della sicurezza e della funzionalità con esito positivo, avendo eseguito le verifiche richieste dalle norme e dalle disposizioni di Legge.
- le tipologie dei materiali utilizzati sono conformi al progetto dell'ascensore modello depositato.

**D E C L I N A**

ogni responsabilità per sinistri a persone o a cose derivanti da manomissione dell'impianto da parte di terzi ovvero da carenze di manutenzione o riparazione.

Pero. 01/10/2003

G. Portigliotti  
**KONE S.P.A.**  
Procuratore



- Un esemplare della dichiarazione di conformità firmato anche dal Responsabile Tecnico è stato inviato dalla Kone alla CCIAA di Milano Via Meravigli 9/B.

**AVVERTENZE PER IL COMMITTENTE:**

La presente dichiarazione di conformità è stata redatta in 4 esemplari di cui uno, firmato dal Direttore Tecnico, per la CCIAA (vedi sopra), due consegnati al Committente e uno per archivio amministrativo Kone.

Copia per il Proprietario

10311950



LIFTINSTITUUT



GEACCREDITEERD DOOR  
DE RAAD VOOR ACCREDITATIE

# EC TYPE-EXAMINATION CERTIFICATE

Acting under the Wet op de gevaarlijke werktuigen issued by the Liftinstituut  
(Stichting Nederlands Instituut voor Lifttechniek), identification number Notified Body 0400,  
commissioned by departmental order no. ARBO/APM/97/00293 of april 23<sup>rd</sup> 1997

*to my*  
KONE S.p.A. Ascensori  
Pezzano Porcigliotti  
Ascensore Tecnico Ascensori

Certificate nr. : NL.97.400.1002.002.06      Object nr.: 1002-002-06

Description of the product : Traction lifts (with MX05, MX06 and MX10 machinery)  
rated loads: 320 kg up to and including 1000 kg  
nominal speeds: 0.63 m/s and 1.0 m/s

Trademark, type : KONE E-line MonoSpace, Release 2.0

Name and address of the manufacturer : KONE Ascensori  
Via Figino, 41  
20016 Pero (Milan) - Italy

Name and address of the certificate holder : KONE International S.A.  
6-Ave. E. Van Nieuwenhuysse  
1160 Brussels - Belgium

Certificate issued on the basis of the following requirements : Lifts Directive 95/16/EG

Test laboratory :

Date and number of the laboratory report :

Date of EC type-examination : December 2000 – October 2001

Annexes with this certificate : Report belonging to the EC type-examination certificate  
nr.: NL.97.400.1002.002.06

Additional remarks : See report

Conclusion : The (model) lift meets the requirements of the Lifts Directive 95/16/EG  
taking into account any additional remarks mentioned above.

Issued in Amsterdam  
Date of issue : October 30<sup>th</sup>, 2001

*Amey*  
LIFTINSTITUUT  
managing director

## Report EC-type examination nr. NL.97.400.1002.002.06

- Manufacturer:** KONE Ascensori  
Via Figino 41  
20016 Pero (Milan) - Italy
- Examined lift:** E-line MonoSpace Release 2.0
- Purpose of addition:** EC-type examination of the updated E-line MonoSpace series of passenger lifts.
- Location inspected model lift:** KONE Ascensori (test facility)  
Via Figino 41  
20016 Pero (Milan) - Italy
- also pilot models in:  
Peine - Germany,  
Bad Münden - Germany  
Tilburg - The Netherlands  
Kotka - Finland  
Vimercate - Italy
- Examinations by:** Mr. P.R. de Jong  
Mr. H.B. Kaptein
- Examination dates:** December 11<sup>th</sup>, 2000 (test tower Pero - Italy)  
May 17<sup>th</sup>, 2001 (pilot Peine - Germany)  
June 20<sup>th</sup>, 2001 (pilot Bad Münden - Germany)  
June 25<sup>th</sup>, 2001 (pilot Tilburg - The Netherlands)  
June 29<sup>th</sup>, 2001 (pilot Kotka - Finland)  
July 25<sup>th</sup>, 2001 (pilot Vimercate - Italy)
- Examinations based on:** Lifts Directive 95/16/EC (edition Sept. 1995), EN 81-1 (edition August 1998) and Amendment 2 to EN 81-1 for MRL Electric Lifts (rev. 5, issued Nov. 1999)
- Manufacturing account:** Mr. L. Galbiati, R&D manager KONE Ascensori, Pero (Milan)
- Revisions of report:**

## 1. Description of the lifts

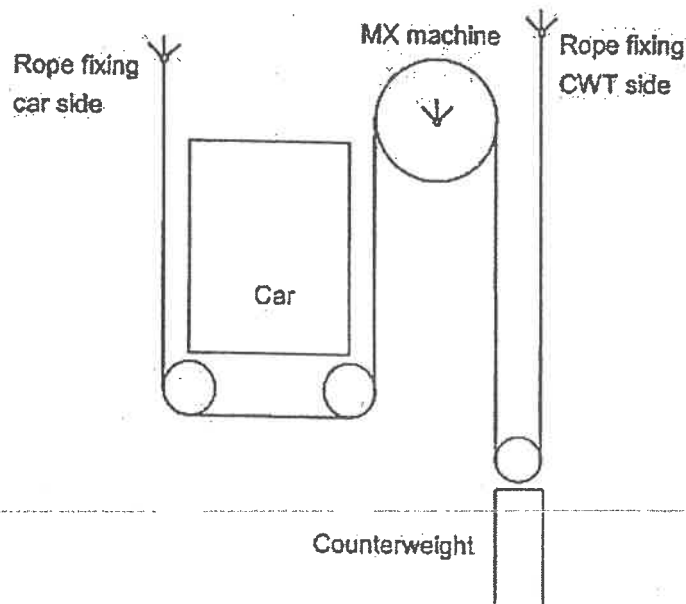
The E-line MonoSpace lift, Release 2.0 is a machineroomless concept. The machinery, drive and control are installed in the headroom of the well.

A maintenance access panel (MAP) is integrated to the topmost landing doorframe or is installed in a separate casing next to the door of the topmost landing or on the floor below the topmost landing in the same configurations.

The suspension is of the underslung type with a reeving factor 2 : 1. The machine as well as the rope fixing brackets are mounted on the guide rails.

The main characteristics of the layout are given in figure 1. For more details we refer to the technical file.

**Diagram of layout**



The main characteristics concerning the model description are listed on the next pages.

## GENERAL DATA

Machinery	MX 05				MX 06	MX 10		
Rated loads (kg)	320	400	450	480	630	630 - 800	900	1000
Max. number of persons	4	5	6	6	8	8 - 10	12	13
Rated speeds	0.63 m/s and 1.0 m/s							
Travel height	40 m / 60 m with compensation chain							
Number of floors (max.)	24							
Interfloor distance (max.)	10000 mm							
Floor distance (min.)	2450mm (single car entrance), 400 mm (opposite car entrances)							
Nr. of lifts in group (max.)	3							
Maintenance Access Panel (MAP)	outside the well (normally at top landing floor)							
Control and drive	in the well							
Headroom of the well (min.)	car height + 1400 mm (for car heights of 2100 - 3250 mm)							
Car type	EuReCa Rel. 1 (slingsless) / MCD (sling)							
Location of cwt.	sideways of car travel (left or right)							
Pit depth (min.)	1250 mm							
Structure of the well	concrete / brick / steel frame / steel structure with glass							

Car widths	Car depths	Car heights	Door widths	Door heights
750 - 1600 mm	850 - 2100 mm	2100 up to 3250 mm with MCD car	700 - 1400 mm	2000 - 2700 mm

## DRIVE SYSTEM

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Machinery	MX 05	MX 06	MX 10
Machinery weight (nom.)	190 kg	230 kg	330 kg
Number of ropes	see page 7		
Roping factor	2 : 1		
Traction sheave			
Pitch diameter	340 mm	400 mm	480 mm
Wrap angle	180°		
Undercut width	6.1 mm	6.3 mm	6.3 mm
Undercut angle	100°	105°	105°
Opening angle	30°		
Electrical drive system	V3F16L		
Hoisting motor power	2.8 kW	3.7 kW	5.7 kW
Nominal current	9 A	11 A	16 A
Motor temp. control	P.T.C. - protection		
Brake	drum type, double acting (nr. 616260), operating only after the machine has stopped.		
EC type certificate	NL97.400.1002.002.02 (revision 1.0), certified as ascending safety device for the machinery types MX05, MX06 and MX10 (only in cooperation with an overspeed governor of which the contact for deactivation of the brake is set within the limits of 115% of the nominal car speed)		
Levelling accuracy	+/- 5 mm		
Rescue operation	electrical (recall drive) or manual (release of brake / special tool)		



## COUNTERWEIGHT

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Frame type	CWF05	CWF06	CWF10
Performance	bolted framework with fillers		
Main dimensions	2434 x 425 mm	2300 x 525 mm	2300 x 700 mm
Nett weight (frame + pulley)	51 kg	63 kg	87 kg
filler bits	cast iron, iron, lead, concrete		
Balancing factor	50%		
Pulley for suspension	ø 330 mm ( one piece on top side)		
Buffer striker plate	square 150 mm		
Safety gears (optional) (progressive types) and nr. of EC type-certificate	SGB01 - TÜV-A-AT-1/99/ 001 CEFV or TÜV-A-AT-1/99/ 001 CEFV/I SGB05 -- TÜV-A-AT-1/99/ 004 CEFV or TÜV-A-AT-1/99/ 004 CEFV/I		

## WELL

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Construction	concrete / brick / steel frame / steel structure with glass		
Horizontal intersection dimensions	according to data given in layout drawings (differences between slingless types of cars and sling types of cars)		
Min. height of headroom	at application of polyurethane buffers with height of 200 mm (max. stroke 180 mm)	for EuReCa cars (with maximum cwt. down overtravel of 130 mm): for MCD cars with: - CF06UP slings (with maximum cwt. down overtravel of 110 mm): - CF10UP slings (with maximum cwt. down overtravel of 100 mm):	3600 mm 3600 mm 3595 mm
(all data are to apply for cars with an internal height of 2100 mm and a balustrade with a height of 700 mm; for cars of more internal height or a balustrade of 1100 mm, the headroom has to enlarged accordingly)	at application of polyurethane buffers with height of 100 mm (max. stroke 90 mm)	for EuReCa cars (with maximum cwt. down overtravel of 130 mm): for MCD cars with: - CF06UP slings (with maximum cwt. down overtravel of 100 mm): - CF10UP slings (with maximum cwt. down overtravel of 100 mm):	3500 mm 3500 mm 3500 mm
Support of machinery	against one guide rail		
Support of ropes on car side	springy onto support bracket of cantilever plate fixed on car guide rail		
Fixing of ropes on car side	metal self tightening wedge type sockets with welded thread rods fixed by intermediate springs and washers by fixing nuts, counter nuts and hand spliced eyes; the dead parts of the ropes are secured by one rope grip and a tie-wrap; the ropes are fixed in line to a support that is fixed to the rope fixing beam		
Support of ropes on counterweight side	springy onto support bracket, swinging fixed to horizontal strip-beam between one car guide rail and one cwt. guide rail		
Fixing of ropes on counterweight side	metal self tightening wedge type sockets with welded thread rods fixed by intermediate springs and washers by fixing nuts, counter nuts and hand spliced eyes; the dead parts of the ropes are secured by one rope grip and a tie-wrap; the ropes are fixed in line to a support that is fixed to the rope fixing beam		
Load control device	strain gauge in rope suspension device		
Hoisting facilities	sockets poured in the ceiling for fixing hooks, beams and lifting loops; fixed means for hoisting have to be installed outside the minimum required vertical free spaces and the required rectangular block		

## ELECTRICAL EQUIPMENT

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Machinery	MX 05	MX 06	MX 10
Types of power supply	L1+L2+L3+N+PE (TN-S or TN-C-S); L1+L2+L3+N (TT); L1+L2+L3+PEN (TN-C); L1+L2+L3 (IT); 380 V / 400 V / 415 V		
Main power supply (min.)	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	4 mm <sup>2</sup>
Fuses (max.)	3 x 20 Amp	3 x 25 Amp	3 x 25 Amp
Light power supply	L + N + PE ; 230 V (fuse max. 6 A)		
Safety chain supply	230 V AC (fuse F1/glass max. T 1 A)		
Control	LCECPU		
Printed circuit boards	<ul style="list-style-type: none"> <li>- 713713 H02 or 713713 H03 or 713713 H04, with resp. report nrs. 255, 300, 320 (IMQ), and</li> <li>- 713123 H02 (supported by PCB 713124 H02), with report nr. 254 (IMQ), or</li> <li>- 713123 H03 (supported by PCB 713124 H03), with report nr. 312 (IMQ), and</li> <li>- 713163H04 (LCE 230 + ADO/ACL, pre-opening of doors), with report nr. 01197 dated 04-06-2001 (Fimtekno), and</li> <li>- 713613 (LOP230), with report nr. 213 (IMQ)</li> </ul>		
Inspection control	permanently connected movable control station on car roof		
Recall control	fixed switch and buttons in MAP		
Alarm device	two-way voice communication device		

## LANDING DOORS

For	All models	
Manufacturer	KONE	
Types	AMD	
Widths (side opening)	700 mm up to 1400 mm (all doors two or four panels)	
Widths (central opening)	800 mm up to 1400 mm	
Heights	2000 mm up to 2700 mm	
Landing door locking device and nr. of EC type-certificate	AMDL1-R1 - TÜV-A-AT-1/99/003 CETV/1 or TÜV-A-AT-1/99/003 CETV/2 AMDL2-R1 - TÜV-A-AT-1/99/004 CETV/1 or TÜV-A-AT-1/99/004 CETV/2 AMDL3-R1 - TÜV-A-AT-1/99/005 CETV or TÜV-A-AT-1/99/005 CETV/1 AMDL4-R1 - TÜV-A-AT-1/99/006 CETV or TÜV-A-AT-1/99/006 CETV/1 AMDL1-R2-EN - 9831/1(FI) or TÜV-A-AT-1/00/016 CETV AMDL2-R2-EN - 9832/1(FI) or TÜV-A-AT-1/00/017 CETV AMDL3-R2-EN - 9833/2(FI) or TÜV-A-AT-1/00/018 CETV AMDL4-R2-EN - 9834/2(FI) or TÜV-A-AT-1/00/019 CETV	
AMDL1 = centr. opening / 2 panels	AMDL1-R2-IP54 - TÜV-A-AT-1/99/008 CETV or TÜV-A-AT-1/99/008 CETV/1	
AMDL2 = side opening / 2 panels	AMDL2-R2-IP54 - TÜV-A-AT-1/99/009 CETV or TÜV-A-AT-1/99/009 CETV/1	
AMDL3 = centr. opening / 4 panels	AMDL3-R2-IP54 - TÜV-A-AT-1/99/010 CETV or TÜV-A-AT-1/99/010 CETV/1	
AMDL4 = side opening / 3 panels	AMDL4-R2-IP54 - TÜV-A-AT-1/99/011 CETV or TÜV-A-AT-1/99/011 CETV/1	
	AMD full glass doors	STC 9911 (FI)
	AMD doors with full height windows	STC 991 (FI)
	AMD doors with half height windows	STC 9913 (FI)
	AMD finger protection strip (State of Conformity)	STC 993 (FI)

## CAR

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Manufacturer	KONE		
Car types	EuReCa Rel. 1 / MCD		
Sling type Eureka cars	none		
Sling types MCD cars	CF06	CF06 / CF10	CF10
Performance of walls	steel plate (zinc coated or painted) / stainless steel / skin plate / polycarbonate laminate / glass (optional: local decoration)		
Finish of floor	steel plate, stainless steel, aluminium, linoleum, rubber, (optional: local designed flooring)		
Door sill load	maximum 40% of rated load		
Weight	see tables for EuReCa Rel. 1 car and MCD car at chapter 3.1.4 (page 10)		
Car widths	750 - 1600 mm		
Car depths	850 - 2100 mm		
Car heights	2000 mm up to 3250 mm with MCD car		
Entrance	single, or opposite (except for 320 kg) for other rated loads depending of car dimensions)		
Levelling / re-levelling	ADO/ACL (optional)		
Door safety device	photocell device or curtain of light (both optional)		
Door operator			
type	permanent magnet synchr. motor (drive 2) or DC motor (drive 1)		
drive	V3F (drive 2) or pulse width modulated closed loop (drive 1)		
Door types	AMDC (railings 1 and 2) and full glass doors		
Door widths (side opening)	700 - 1400 mm		
Door widths (central opening)	800 - 1400 mm (not for 320 kg car)		
Door heights	2000 - 2700 mm		
Car door locking device and nr. of EC type-certificate	AMDC1-R1 - TÜV-A-AT-1/99/001 FKTV or TÜV-A-AT-1/99/001 FKTV/1 AMDC2-R1 - TÜV-A-AT-1/99/002 FKTV or TÜV-A-AT-1/99/002 FKTV/1 AMDC3-R1 - TÜV-A-AT-1/99/003 FKTV or TÜV-A-AT-1/99/003 FKTV/1 AMDC4-R1 - TÜV-A-AT-1/99/004 FKTV or TÜV-A-AT-1/99/004 FKTV/1 AMDC1-R2 - TÜV-A-AT-1/99/006 FKTV/1 or TÜV-A-AT-1/99/006 FKTV/2 AMDC2-R2 - TÜV-A-AT-1/99/007 FKTV/1 or TÜV-A-AT-1/99/007 FKTV/2 AMDC3-R2 - TÜV-A-AT-1/99/008 FKTV/1 or TÜV-A-AT-1/99/008 FKTV/2 AMDC4-R2 - TÜV-A-AT-1/99/009 FKTV/1 or TÜV-A-AT-1/99/009 FKTV/2		
Car position indicator	dot matrix / seven segment / display		
Pulleys for suspension	ø 330 mm (2 pieces on bottomside)		
Car guiding	sliding and roller shoes		
Safety gears (progressive types) and nr. of EC type-certificate	SGB01 - TÜV-A-AT-1/99/ 001 CEFV or TÜV-A-AT-1/99/ 001 CEFV/1 SGB02 - TÜV-A-AT-1/99/ 002 CEFV or TÜV-A-AT-1/99/ 002 CEFV/1 SGB05 - TÜV-A-AT-1/99/ 004 CEFV or TÜV-A-AT-1/99/ 004 CEFV/1 SGB08 - FI 978/1		

## WELL (CONTINUATION)

For rated loads	320 - 480 kg	630 kg	630 - 1000 kg
Traction ropes			
Type	regular lay 8x19 (steel core or fibre core)		
Diameter	nom. $\varnothing$ 8 mm		
Strength	1570 N / mm <sup>2</sup>		
Breaking load	minimum 28.5 kN or 36.2 kN (see number of ropes)		
Certificate	inspection certificate 3.1B acc. to DIN 50049 and EN 10204 produced		
Number of ropes (min.)			
EuReCa and MCD cars max. travel height: 70 m min. break.load: 28.5 kN	4	5	6
EuReCa cars only max. travel height: 70 m min. break.load: 36.2 kN	4 3 for 320 kg up to max. travel height of 40m only	4	5
Rope terminals	metal self tightening wedge type sockets with welded thread rods		
Parking plate dimensions	for guide rails T70: 346 x 360 mm (main hole: 80 x 225 mm) for guide rails T82: 346 x 360 mm (main hole: 97 x 225 mm) for guide rails T89: 351 x 475 mm (main hole: 100 x 315 mm) for guide rails T89: 286 x 840 mm (main hole: 100 x 307 mm) (MCD car only)		
Overspeed governors	type 80420 / OL 35		
tripping parts	two types: one with testing groove and one without testing groove		
tripping speed	flyweights against pressure of adjustable springs		
rope	0.42 m/s up to 4.81 m/s		
breaking load	$\varnothing$ 6 - 6.5 mm		
EC type-certificates	minimum for $\varnothing$ 6 mm: 19,6 kN / minimum for $\varnothing$ 6,5 mm: 27,41 kN works certificate for both diameters acc. to DIN EN 10204-2.1 produced		
Car guide rails (min.) (cold drawn, lubricated or dry)	T70x65x9	T70x65x9 <sup>(1)</sup> T82x68x9 <sup>(2)</sup>	T82x68x9 <sup>(3)</sup> T89x62x16 <sup>(4)</sup>
Bracketing distance car guide rails	2500 - 3200 mm	$\leq$ 2500 mm <sup>(1)</sup> 2500 mm - 3200 mm <sup>(2)</sup>	$\leq$ 2500 mm <sup>(3)</sup> 2500 mm - 3200 mm <sup>(4)</sup>
Counterweight guide rails (min.)	HT60x50x16 (rolled profile, thickness 2 mm); T70x65x9, T82x68x9 and T89x62x16 (cold drawn/lubricated or dry) in case a safety gear is installed on the counterweight		
Bracketing distance counterweight guide rails	HT60x50x16, T70x65x9, T82x68x9 and T89x62x16: according maximum car bracketing distance		
Down overtravel of car	min. 100 mm		
Pillars car travel	for EuReCa cars (all loads and MX05, MX06 and MX10 machinery), and for MCD cars up to and incl. 630 kg (with MX05 and MX06 machinery) use in pair for entire load range two parts telescopic square steel tube, sand filled (acc. draw.nr. 776500) adjustable from 1250 up to 1750 mm top support plate for buffer square 150 mm fastening with two brackets (fixed to the guide rail, shoving to pillar) for MCD cars (load range 630 - 1000 kg with MX10 machinery) single use in centre of the pit two parts telescopic square outside reinforced steel tube (acc. draw.nr. 755815) adjustable from 1250 up to 1750 mm fastened on flat base plate between the car guide rails		

## WELL (CONTINUATION)

For	All models
Car buffers (polyurethane) and nr. of EC-type certificate (two pieces needed)	ACLA Ø125x200 mm - AP 002/300398, AP 002/300431, AP 002/300399 (resp. AUTAN 35, AUTAN 5.1, AUTAN 6) P+S Ø125x100 mm - AP 006/E2 (version D, Diepocell) ACLA Ø140x100 mm - AP 002/300184 or AP002/300183
Car buffers (springs), for MCD car with CF10UP sling only (one piece needed)	D x d x t = ø90 x ø75 x 15 ; spaces between decompressed windings : 11 mm decompressed height: 332 mm (with touch- and fixing plates: 350mm) maximum stroke : 136 mm ; one set of 4 springs, one piece needed <u>Note:</u> the springs can be replaced by the following polyurethane buffers ACLA Ø140x100 mm - AP 002/300184 or AP002/300183
Down overtravel of the counterweight	130 mm / 100 mm, depending on type of car (see min. height of headroom)
Counterweight buffers (polyurethane) and nr. of EC-type certificate (one piece needed)	ACLA Ø125x200 mm - AP 002/300398, AP 002/300431, AP 002/300399 (resp. AUTAN 35, AUTAN 5.1, AUTAN 6) P+S Ø125x100 mm - AP 006/E2 (version D, Diepocell) ACLA Ø140x100 mm - AP 002/300184 or AP 002/300183
Tension wheel of O.S.G.	ø 204 mm
Protection of travel of counterweight	screen fixed to the back side of the counterweight rails
Depth of pit	at application of polyurethane buffers with height of 200 mm (max. stroke 180 mm) or spring buffers (max. stroke 136 mm)
	for EuReCa cars (with maximum car down overtravel of 150 mm): 1400 mm (in some cases absolute minimum: 1385 mm)
	for MCD cars of all sling types (with maximum car down overtravel of 120 mm): 1400 mm (in some cases absolute minimum: 1380 mm)
Depth of pit	at application of polyurethane buffers with height of 100 mm (max. stroke 90 mm)
	for EuReCa cars (with maximum car down overtravel of 130 mm): 1250 mm
	for MCD cars with: - CF06UP sling (with minimum car down overtravel of 60 mm): 1245 mm - CF10UP sling (with minimum car down overtravel of 60 mm): 1286 mm - CF10UP low pit sling (with minimum car down overtravel of 60 mm): 1235 mm
Entrance of pit	fixed ladder stored against the side wall of the well at the closing side of the lowest landing door within the reach of 700 mm, or not-fixed, inalienable ladder stored against the side wall of the well at the closing side of the lowest landing door within the reach of 700 mm; sloping erected and locked in the bottom rail of the landing door

## 2. Examinations

The examination is meant to check whether compliance with the Lifts Directive is met. The models are examined based on the EN 81-1, issue of August 1998. Additional demands based on EN 60204-1 are made on issues not covered by EN 81-1. For other issues relevant harmonised standards are used. Issues not covered by the above mentioned standards are directly related to the essential demands of the Lift Directive.

The examination includes:

- examination of the technical file consisting of:
  - risk analysis for deviations of EN 81-1
  - all relevant information on the models
  - calculations
  - instruction manual
- examination of three representative models in order to establish conformity with the technical file
- tests and inspections to check compliance with the essential demands of the Lift Directive.

Compliance with the Directive EMC is not examined by Liftinstituut and therefore excluded from this EC-type examination.

## 3. Results

### 3.1. Calculations

Calculations are made according to EN 81-1, issue August 1998. Additional car strength calculations, machine fixing point's calculations and rope fixing points calculations were made. At a later point of time also additional calculations were produced for the added buffers, the new type of pillars and for the reduced height of the headroom of the well and for the reduced depth of the pit thanks to the practise of these new parts.

For the purpose to issue a new report again additional calculations were produced for the guide rails (for rated loads of 630 kg and 1000 kg), for the friction force appearing with the modified grooves of the traction sheave and for the modified design of the parking plate for the locking pin to fix the car onto the guide rail column.

The calculations were checked and found in order. There has been given special attention to the fact that it should be possible to conduct final inspections without the need of calculations. This means that, were possible, system limits are given.

#### 3.1.1. Car strength calculations

Calculations are made with a Finite Elements method that covers the complete range as stated in the model descriptions. The calculations were made for the Eureka car Rel. 1.0, as well as for the MCD car.

#### 3.1.2. Guide rail calculations

The calculations are made according to EN 81-1, issue August 1998. For final inspections KONE supplies tables (see annex of this report) from which the maximum allowable bracketing distance could be determined. This information, together with the guide rail information laid down in the model description, enables final inspections without the need of a calculation check.



Additional calculations are made for the models with rated loads of 630 kg up to and included 1000 kg to check whether less heavy guide rails could be used. This was resulting in the following.

In case the bracketing distance is equal to or less than 2500 mm, T70x65x9 guide rails can be applied for rated loads of 630 kg only. Similar for the same bracketing condition T82x68x9 guide rails can be applied for rated loads of 800 kg up to and included 1000 kg.

Nowadays it isn't necessary to check graphics for the maximum allowed bracketing distance; this distance can be determined from the tables with characteristics of this report, see WELL at page 7.

### 3.1.3. Minimum and maximum car mass

The minimum required mass of the two different cars (EuReCa and MCD) could be checked according to the following tables. Two remarks are relevant in order to read the table correctly:

- the table is valid for 50 % balancing
- the mass of the car includes door(s), pulleys, decoration etc.

The maximum permissible mass of the car can also be checked in the same tables.

The numbers of the masses in the tables are obtained by comparing the output data of all relevant components.

#### For EuReCa cars

rated loads (kg) travel 40 m	minimum and maximum car weight (kg) related to the travels													
	travel 3.5m		travel 10 m		travel 20 m		travel 30 m		travel 40 m		travel 50 m		travel 60 m	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max
320	205	780	220	780	245	780	270	780	295	780	350	780	385	780
400	280	750	300	750	320	750	345	750	370	750	450	750	490	750
450	330	720	345	720	370	720	395	720	420	720	525	720	570	720
480	360	710	375	710	400	710	425	710	445	710	525	710	570	710
630	470	820	490	820	520	820	550	820	585	820	585	820	585	820
800	553	1350	572	1350	601	1350	631	1350	661	1350	770	1350	770	1350
900	637	1250	657	1250	686	1250	716	1250	745	1250	860	1250	860	1250
1000	722	1150	741	1150	771	1150	801	1150	830	1150	950	1150	950	1150

Note : traction calculations were performed with:

$$\alpha = 180^\circ, \beta = 105^\circ (100^\circ \text{ for MX05 machinery}) \text{ and } \gamma = 30^\circ$$

#### For MCD cars

rated loads (kg)	minimum and maximum car weight (kg) related to the travels													
	travel 3.5m		travel 10 m		travel 20 m		travel 30 m		travel 40 m		travel 50 m		travel 60 m	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max
320	205	780	220	780	245	780	270	780	295	780	350	790	385	790
400	280	750	300	750	320	750	345	750	370	750	450	750	490	750
450	330	720	345	720	370	720	395	720	420	720	525	720	570	720
480	360	710	375	710	400	710	425	710	445	710	525	710	570	710
630	470	820	490	820	520	820	550	820	585	820	585	820	585	820
800	620	1400	650	1400	690	1400	730	1400	770	1400	770	1400	770	1400
900	710	1350	735	1350	780	1350	820	1350	880	1350	860	1350	860	1350
1000	800	1300	825	1300	870	1300	910	1300	950	1300	950	1300	950	1300

Note : traction calculations were performed with :  $\alpha = 180^\circ, \beta = 105^\circ (100^\circ \text{ for MX05 machinery}) \text{ and } \gamma = 30^\circ$

### 3.1.4. Blocking device

The layout of the blocking device on the roof of the car isn't changed and for this device no additional calculations are performed.

### 3.1.5. Parking plate

At the Release 2.0 of the E-line MonoSpace the same, already for Rel. 1.6 modified, parking plates for fastening the car to the guide rail column with the help of the locking pin will be used. The plates have smaller dimensions compared to the versions used before and only four holes to insert the locking pin of the car. The parking plates are mounted to the car guide rails at the spot of a connection of the upper parts of the car guide rails. The new performance of the parking plate is available in three different dimensions depending on fixing on the guide rails T70 or T82 or T89. Besides there is an additional parking plate for MCD cars guided by T89 rails. New calculations for bending, shear stress and combined stress are performed for the different rated loads combined with the possible guide rails to apply; the calculations are checked and approved.

### 3.1.6. Rope fixing points

Because of the application of smaller guide rails for the car, the rope fixing brackets are verified. It has occurred that the asymmetric bending moment cause by the rope fixing increased at the place where the distance to guide rails was the biggest. To decrease the stress peak the rope fixation point was raised for 290 mm. The brackets of the car guide rail above and underneath the rope fixing bracket remained in their original position.

### 3.1.7. Risk Assessment

For the E-line MonoSpace, Release 2.0 a new Risk Assessment was produced. This R.A. covers the basic concept with deviations of the standard EN 81-1. This R.A. will be used also for other KONE E-line products, deviating on more aspects for their specific concept (MX 10 Special, MX 20 Special, MicroSpace). The R.A. was examined and compared to the former issue; no remarks were to make.



## 3.2. Measurements

### 3.2.1. Noise level

Goal of the measurements was to obtain information about the noise level persons are experiencing during normal use, maintenance, and inspection activities. The results are only related to the examined models of Release 1.0, and based on these results only expectations for lifts installed in the future can be concluded. In our opinion the results were satisfactory at that time and the nowadays installations produce less noise.

The following measurements were made:

- 1) In the car: at a height of 1,6 m, face towards car entrance, nominal speed.
- 2) On the car roof: at a height of 1,6 m, face towards machine/landing doors, inspection speed.
- 3) In front of the open control cabinet, at a height of 1,6 m, face towards cabinet, nominal speed.

In all cases normal runs, and emergency stops in the most unfavourable positions, were made. Noise level meter used: Brüel & Kjaer type 2236.

### 3.2.2. Current measurements

Current measurements were made in order to check the machine and balancing factor. According to Kone the balancing factor should be 50 %. The balancing factor established during the examinations of the pilot models were all about 50 %.

The Release 2.0 model with the new drive also has an updated control. The current used by the lift motor no longer will be measured directly on the main connectors of the supply, but a DC-voltage can be measured on the pins TP1(+)/TP2(-) of the LOP-CB board in the MAP. The measured voltage is equivalent to the motor current (0.34 VDC = 1A).

Voltage meter used: Voltcraft Clamp-on Ammeter F113

### 3.2.3. Speed measurements

The following speed measurements were made:

- nominal speed
- inspection speed
- rescue drive speed

Also the speed of the Rel. 2.0 model can be measured in an indirect way. Again a DC-voltage can be measured as a deducible value of the speed. This value is measured on the pins TP3(+)/TP4(-) of the LOP-CB board in the MAP and is in fact a deducible value of the tacho voltage. The real value of the speed can be verified by the indicated deducible values for the tachometer in the next table:

E-line MonoSpace (with LOP-CB assembling GO1)			
Motor type	Nom. speed	Voltage on test points TP3(+) / TP4(-)	
		Minimum (-8%)	Maximum (+5%)
MX05	0.63 m/s	1.15 VDC	1.31 VDC
MX05	1.0 m/s	1.82 VDC	2.08 VDC
MX06	0.63 m/s	1.15 VDC	1.32 VDC
MX06	1.0 m/s	1.83 VDC	2.09 VDC
MX10	0.63 m/s	1.12 VDC	1.27 VDC
MX10	1.0 m/s	1.77 VDC	2.02 VDC

To check this method the speed was measured in another way also. At this method a stopwatch was activated and deactivated by two magnets installed at a fixed distance (0.5 m or 1.0 m) on the car. With the help of the measured interval of time, the real speed can be calculated.

All measured values were within the limits as stated in paragraph 12.6 of EN 81-1.  
Voltage meter used for the indirect measurement: Voltcraft Clamp-on Ammeter F113.  
Meter used for the direct measurement: Eduscho stopwatch and two pulse magnets.

### 3.2.4. Isolation resistance

The machine supply, the safety chain and the lighting supply were measured.  
All values were substantially higher than the values required in paragraph 13.1.3 of EN 81-1.  
Isolation resistance meter used: Chauvin Arnoux, C.A 6513 Megohmmeter.

### 3.2.5. Lighting

Lighting intensities outside the well in front of the MAP, as also in the well, in the pit and in the car were measured (all values at least 50 Lux). Besides the lighting intensities at the machinery and in front of the casings of the drive and the control in the well were measured (at least 200 Lux).

Conclusion: all measured lighting values are more than sufficient compared to the values required by the standard or required because of deviating circumstances.

### 3.2.6. Alarm devices

The alarm devices in the car and at the bottom side of the car were checked and found in order. No outgoing telephone line, nor the Konexion device was installed in the test lift. Therefore the two-way voice communication couldn't be checked at the certification visit.

### 3.2.7. Other measurements and checks

Other measurements and checks required by the standard EN 81-1, Annexes D1 and D2 are executed at the examination for the certification, like tests of the overspeed governor, of the safety gear, of the brake of the machine, the traction test (with measurements of the rope-slipping), slipping of the traction sheave (or not raising the car) when the counterweight is stopped by its buffer, activation of the limit switches, check on balance of the car and counterweight, check of the load weight device, etc.

All checks resulted in satisfying the requirements of the standard.

### 3.3.1. Examination of the models

In this section the results that are of importance for the models are discussed. At the examinations of "pilot"-lifts and a pre-examination of a test model various remarks were presented to KONE, which did lead to a number of improvements.

#### Maintenance Access Panel (MAP)

Outside the well a Maintenance Access Panel (MAP) is present, while the Shaft Electrification Panel (SEP) is located in the well. This MAP accommodates mechanical and electrical auxiliary means to move the car for maintenance conditions or at emergency situations.

The MAP can be executed as a stand alone casing (anodised aluminium) mounted on the outside (right onto the wall or in a recess) of the front wall, on the side wall of the well at the topmost landing or is integrated in the framework of the topmost landing door.

With additional conditions the MAP can be installed also at the same locations at the floor below the topmost landing floor.

The apparatus normally installed in the MAP can be installed also inside a special decorative housing integrated in the topmost landing door frame (f.e. like a control cabinet).

The cover of the casing (MAP or control cabinet) is provided with two self-closing key locks. In the upper part of this MAP the tilting mechanism to attach the lever for manually opening of the brake is situated, as also a someway extensional armature for lighting giving necessarily illumination (with a minimum intensity of 50 Lux).

In the bottom part several switches, buttons and fuses are present, namely the main switch for power supply (lockable with a key lock), the main switch for lighting, separate switches and fuses for the lighting of the well and the car, a switch for the recall drive and push buttons to activate this circuit, and a switch for the illumination of this MAP; further more a socket outlet for a service lamp or auxiliary tools is present.

The middle section of the MAP consists of two PCB's.

On the upper PCB (LOP-CB) a number of LED's to supervise various functions are present (the drive, the control, the modes of the control, the car and the car door conditions, the door zones, the safety circuit, etc. A two-way arrow indicated LED panel informs about direction and speed indication of the car, also at power off situations (for use during manual rescue operation). Some switches are present, f.e. to inhibit car door opening. Also a number of push buttons are present, f.e. the direction buttons to drive in recall mode and buttons to call various functions of the control (reading out the memory, fault finding, adjustments, etc.), as also buttons to set and execute car calls. All functions of these push buttons can be read out in codes from a five digit numeric display on the top side of this PCB. Also on this PCB two sets of pins are present to measure indirectly the nominal speed mode and the nominal current. Finally at the top of this PCB a connector for the buffer test (bridging) and to activate the overspeed governor testing safety gear are present.

The lower PCB (small one called LOP230) contains a number of connectors for different parts of the safety circuit. In the centre of this PCB some glass fuses of the control are located, including the glass fuse of the safety circuit (F1).

On the inside of the hinged door a declaration is fixed concerning the used indications on the components in the MAP, the steps to be taken in case of emergency operations with power on or manual (power off), and instructions to use the intercom connection with the car.

Because the MAP is located at a position which is accessible for public, the following measures have been taken to minimize the related risks:

- the casing is protected according (IP X3);
- for manually opening of the brake two actions are needed;
- the protection degree against direct contact inside the casing is IP 2X;
- a warning sign (flash) is fitted on the transparent protection cover of the PCB with connectors for the control inside the casing;
- the casing is vandalism resistant:
  - there are two self-locking door locks,
  - it is not possible to remove the door with simple means when it is in locked position.

### Accessibility of the machine

Access to the machine under safe conditions is possible by driving to that position on inspection drive.

Mostly only inspection activities have to be carried out. The only maintenance activity concerns adjustment of the brake. A locking pin with safety contact ensures a fixed working position. Replacement of machine and/or ropes can only be performed in a safe way with the use of proper hoisting equipment.

### Machine torque

The machine torque is limited in the drive module in such a way that maximum required rated loads can be serviced, even in cases of small overloads.

To fulfil the requirements of the standard EN 81-1, chapter 9.3.c and the Annexes D1 and D2, j (to verify with slip of the traction sheave in respect of the stationary suspension ropes), the limitations of the drive has to be increased or eliminated.

To meet these requirements the limitations of the drive V3F16L can be raised temporarily by a function implemented in the software of the control. This function (in the former control activated by the "full power" button) can be approached by menu 6\_80 and is divided in two sections, the first for testing the empty car cannot be raised if the counterweight is resting on the buffer and the machine is rotated in the "up" direction, the second for proving the safety gear is engaged fully if the car is loaded with 125% and the machine is rotating in the "down" direction. If the mentioned function is activated, movement of the traction sheave is only possible in the RDF mode. For safety reasons the function will be deactivated automatically 60 seconds after it is activated and movements of the car aren't performed by the press buttons of the RDF mode, or will remain activated as long as the buttons are pushed.

After the safety gear of an overloaded car (125%) is engaged, the drive isn't able to raise the car without other auxiliary means. However this isn't demanded by any requirement of the standard.

### Dynamic brake

Because gearless machines are used there is a danger of fast acceleration of the car when the brake is opened manually. Magnets inside the machine initiate an electro-magnetic field that limits the speed when the brake is opened in absence of supply energy. The balancing factor is of importance to ensure proper functioning of the dynamic brake with an empty car. If the car is loaded for more than 50%, acceleration downwards will occur. There are clear instructions to pump the brake lever; a LED display in the MAP indicates speed increment and the noise of the accelerating car is increasing. In the worst case the safety gear will be engaged.

## Accessibility of electrical equipment

Except for the MAP all electrical parts are located in the well. These parts are situated against the side wall on the front side of the well slanting underneath the machinery. The separate casings are built side by side vertically in such a way the bottom side of the lowest casing approximately levels with the topmost landing floor. Successively from the top to the bottom the following casings are to distinguish: for the braking resistors, for the drive module V3F16L, the SEP casing for the control (LCECPU), and if necessary a casing for options (f.e. the evacuation device EBD).

The casings of the drive and of the control are installed on sliding rails, the casings can be moved horizontally to a spot where attainability from the car roof to the entire width of the casing is possible.

Having these electrical components in the well implements that the casings are accessible from the roof of the car to solve electrical problems only. For that purpose a standing area on the front side of the car roof is present opposite of these casings. The minimum required area of 0.50 m width and 0.70 m deep for standing is present in most common performances of the car. In some cases this area is a little bit less width or a little bit less deep, but there won't be performed any maintenance activity from this spot.

To avoid collision with the car, shearing of the hands and to be able to reach all equipment in the casings, several requirements are stated (see conditions).

## Main supply

The main connection of the incoming supply is situated in the MAP and is connected to the main switch directly. This main switch has means for locking in the "off" position.

## Control

The control of the lift is located in the headroom of the well. The control board is the updated version of the LCECPU. An updated version of the interface board LCE230 is also applied. Compared to the former version of the LCE applied in other E-line MonoSpace lifts, in the new layout the glass fuse F1 (safety chain) is removed (now on the LOP230 PCB in the MAP), and the former connectors XM1, XM2 and XH1 are removed also; an additional wire bridge between XM2/1 and XM2/3 takes care of the continuity of the safety circuit.

Short-circuiting of the safety circuit during a travel on nominal speed was performed. The glass fuse (F1) of the control (located in the MAP) melted and the car executed an emergency stop.

## Interruption of the supply

The "start permit" function has been checked by disconnecting or bridging the output signal of the "hardware checking circuit" to the processor. The check was performed from the car roof on inspection mode; the performed actions were in accordance with the requirements.

The other (hardware) part of the check at which the main contactors (201:1 and 201:2) and the auxiliary contactors (201:3 and 201:4) are kept activated manually can't be performed at final inspections or periodical examinations anymore, because for this check it's needed to dismantle various parts of the drive.

Therefore KONE has issued a Declaration of Conformity for manufacturing the monitoring circuit for deactivation of the main and sub main contactors ("start permit"), being partly situated within the drive, according to the requirements of the standard EN 81-1; this check doesn't have to be performed!

## Temperature monitoring devices

There are two separate temperature-monitoring devices, one for the machinery (three PTC-resistors in series) and one located inside the drive unit (thermistor R1); the devices are acting as required in EN 81-1.

The circuit of the PTC-resistors was checked by disconnecting the plug-connector XT1 on the drive, attainable after the front cover is removed. The check was performed from the car roof on inspection mode, as well during travel as also at the start. The car doesn't stop if the check will be performed during travel; after the travel of the car is stopped, a new start isn't possible.

The functionality of the temperature monitoring of the drive (thermistor R1) can't be checked at final inspections, unit verifications or periodical examinations, because this thermistor is located inside the drive which should be dismantled for a big part.

This functionality is checked during the EC-type examination.

Again for this reason KONE has issued a Declaration of Conformity for manufacturing the circuit for temperature monitoring of the drive, according to the electrical diagrams; also this check doesn't have to be performed!

## Motor run time limiter

The run time is monitored by the drive. Though there is a procedure to check, the really set value could only be checked by reading the parameter. The function can be checked for the maximum value to set only (45 seconds).

## Device for levelling / re-levelling with doors opening / opened (optional)

ADO/ACL is a device for leveling and re-leveling with car doors and landing doors opening or opened. It can be installed as an option for E-line lifts produced by KONE.

The printed circuit board used for the option ADO/ACL-operation in the control cabinet (SEP) is mounted onto the same position as in case of not using this option. If ADO/ACL-operation is required, the LCE230 board in the SEP casing will be replaced entirely.

## Location of the brake resistors

The casing with brake resistors is located in the well fixed against the wall sidelong the machinery on a high level in the headroom. For the sake of heat-development some distance between the bottom side of the machinery or the controller and the top of the upper casing with the resistors (approx. 0.5 meter) is taken into account to avoid too much influence of this heat exposure on the lift motor or on the controller. In common this casing will be installed on top of the casings installed in the headroom of the well.

For the safe replacement of the resistor(s) a procedure is written.

## Overspeed governor

For initiating the safety gear the new type as well as the older type of the KONE overspeed governor OL 35 will be used. This new overspeed governor is similar to the existing type OL35, but isn't provided with a test groove any more, while also remote reset is substituted by manual reset. For this manual remote reset an auxiliary tool in the shape of a wooden stick with the length of approximately 0.5 m with a circular part at one end is present on the car roof stored with clamps against the balustrade. The overspeed governor will be installed on a high level in the headroom opposite to the machinery.

## Stop button on/near the machinery

This stop button can be omitted because while working on the machinery (f.e. adjustment of the brake) the car has to be blocked by the locking device. By the electrical safety device of the locking device (safety circuit interrupted) the same level of safety can be guaranteed; besides the stopping device on the car roof can be used (second interruption of safety circuit). Another reason to sustain this change is that the main contactors are checked for deactivation after every run.

For bigger repairs (f.e. exchange of the machine) also the main switch outside the well has to be switched off; at such circumstances a second man to perform this action will be at the site always.

## Standing area on the car roof

According to the requirements of the standard there has to be a working area for maintenance purposes with the dimensions of 500 x 600 mm. In front of electrical casings the size of this working area must have dimensions the width of the casing with a minimum of 500 mm, and the depth of 700 mm at least. The height of this area for common maintenance purposes has to be 1.80 m, in front of electrical casings this height has to be 2.00 m at least.

Because all electrical and electronically parts in the casings in the well don't need any maintenance, a working area to perform maintenance isn't required. It is sufficient to have enough standing area in case of revision or update of parts in the casing; in case of malfunction or revision mostly complete casings will be exchanged. These kind of activities will be performed by repair man instead of maintenance man.

Though at the top of most cars the required dimensions of the working area specified by the standard EN 81-1 are available, in a few cases the required width of this area isn't 500 mm at least. At the application of MCD cars with minimum internal depth dimensions and maximum internal width dimensions, the width of this area is less than 500 mm for 40 up to 150 mm.

Because the minimum required area extends underneath the main horizontal upper beam of the sling (free height underneath the bottom side of the beam at least 130 mm), no additional requirements are demanded for this situation.

## Minimum height of the headroom

The minimum free vertical space in the headroom is in accordance with the requirements of the standard EN 81-1. The vertical dimension depends on the nominal speed, on the possible jump of the car, on the maximum compression of the applied buffer for the counterweight and on the height of the balustrade that is used. Other dimensions that can influence the calculation are the used type of car, the internal height of the car, the thickness of the car roof and ceiling and the over travel of the counterweight. The minimum required dimensions for all nominal load ranges and for the different nominal speeds are given in the description of the lift characteristics (see the tables at page 6).

It has to be taken in account that the presence of permanently installed hoisting equipment in the headroom is allowed only outside the free vertical dimensions above the car roof and above the balustrade on the car roof, as well as outside the dimensions of the block for salvage.



## Lighting of the well

Because as well the machinery as also the electrical equipment is located in the headroom of the well, the intensity of this lighting in front of the machinery and the casings with electrification (working areas) is 200 Lux. This intensity of lighting is produced by a halogen lamp installed on a level as high as possible in a corner on the backside of the headroom. The lamp is installed outside of the projection of the car travel.

## Minimum depth of the pit

The minimum free vertical space underneath the travel of the car is according the requirements of the standard EN 81-1. Normally the depth of the pit depends on the nominal speed, on the maximum compression of the applied buffer for the car and the layout of the beam with pulleys underneath the car (normal layout or low pit layout). Other dimension that can influence the depth of the pit are the car floor construction, the car flooring thickness and the presence of a safety gear on the counterweight. The maximum over travel of the car is fixed at 130 mm. The minimum depth of the pit is also depending of the choice of the car, EuReCa or MCD. Furthermore the depth of the pit is depending of the height of the buffers to be used. In case the MCD car is applied or buffers with a non compressed height of 200 mm are applied, the minimum depth of the pit will be limited at 1400 mm. In case the EuReCa car is used and buffers with a non compressed height of 100 mm are applied, the minimum required depth of the pit can be limited to 1245 mm.

To have an overview of the minimum required height of the headroom at the use of different car types and the different buffers to use, see the tables of the lift characteristics at page 8.

## Entrance of the pit

For a safe and easy entrance of the pit a ladder is present according the requirements of the standards EN 131 (performance of the ladder only) and the EN 81-1 (fixed vertical installation or manual installation in case of the application of a not-fixed ladder).

## Buffers

Simulated measurements have been executed on an E-line MonoSpace lift for the purpose to reduce the height of the headroom of the well and to reduce the depth of the pit in case of use of the EuReCa type of car up to a nominal speed of 1 m/s. This appeared to be possible with the introduction of synthetic buffers with the non-compressed height of 100 mm besides the buffers with a non-compressed height of 200 mm.

Using buffers with a non-compressed height of 100 mm, the maximum compression can be reduced to 85% (=85 mm) only, because of the means for fastening. After consulting the suppliers of the buffers it has appeared that for cars with maximum mass and for the nominal load of 1000 kg the maximum compression of the car buffers (at 2 car buffers and 125% of the nom. load) the maximum acting compression will be 80 mm.

For this reason we can approve the use of these buffers with a non-compressed height of 100 mm, conditioned they meet to the required load range.



## Provisions for disabled users

Lifts intended to be used for the transportation of disabled users without a guide, shall conform the essential demand 1.6.1, annex I of the Lifts Directive.

As no relevant harmonised standards are present yet, we feel it is necessary to state which items were considered during the EC -type examination.

- the push buttons are marked clearly and therefore understandable for blind persons
- the push buttons are correctly dimensioned
- the push buttons are installed at a height between 0.9 and 1.1 m and therefore easily reachable.

In addition the following items are relevant:

- the stopping accuracy of the models is sufficient (typically +/- 5 mm)
- the car dimensions of the installed lift shall have to be chosen based on the intended use
- the door open time shall be sufficiently long to enable the users to enter or leave the car without problems
- there shall be an acoustic signal indicating that the car is present.

## Pillars under the travel of the car

Adjustable pillars will be used for pit depths between 1250 mm and 1750 mm; they exist of two steel tubes with square cross-section. The higher section is equipped with a square fixing plate (sq. 150 mm, two hooks bevelled) for the buffer on top and is closed at the bottom side. The lower section is only closed at the bottom side and will be placed in position without fixing to the floor of the pit. After telescopic adjustment for the height by filling with sand delivered along (min. required down overtravel of the car of 130 mm), the higher section will be fastened to the guide rails of the car by two brackets. Two bolts and nuts each will do clamping of the brackets. For MCD cars with CF10UP slings a single, telescopic adjustable buffer is used fixed onto a flat horizontal plate between the feet of the car guide rails. Also this pillar can be used for pit depths between 1250 mm and 1750 mm. The performance of this buffer is also out of two steel tubes with square cross-section, the top part telescoping within the bottom part. Fastening the two parts after adjustment is done with the help of 8 bolts. The bottom part is executed with reinforcements on the outside of two opposite sites.

Also the support plate on top of last type of pillar has dimensions of square 150 mm.

## Rescue of entrapped passengers

There are several possibilities to rescue entrapped passengers. First of all there is a rescue drive feature (RDF) with which the car can be driven electrically. Secondly manual lifting of the brake is possible. Both actions are described sufficiently.

In case of a power failure and a balanced load situation there is a possibility to add weight to the car roof, or to use a special lifting tool. With either method it is possible to get the car out of the balanced load situation.

If the safety gear is engaged with loads higher than approximately 80% of the rated load, in some cases the car can only be lifted out of the safety gear by using the special tool mentioned here fore.

This tool has the performance of a lever serviced manual hoist, with a lifting chain or lifting belt (webbing) as hoisting means. Special auxiliary clamping pieces are connected to a fixed part in the well (guide rail) and to the parts of the suspension ropes coming from underneath the car, going to the traction sheave.

By servicing the lever for lifting, two hooks (one at the end of the chain, the second attached to the chain-hoist itself or the hooks attached to the clamping pieces at both ends of the belt) are pulled towards each other (and because of that the special auxiliary clamping pieces also), therefore lifting the car. By this way the safety gear can be disengaged.

If the floor-to-floor distance exceeds 4,2 m special attention is needed in order to get safe access to the car roof.

The instruction manual shall clearly state how to act in case of these special rescue operations. Either KONE or the fire brigade only are allowed to carry out these special rescue operations.

### 3.4. Conditions

In this section the conditions are stated. The required conditions shall be checked at final inspections on installed lifts.

#### 3.4.1. Maintenance Access Panel (MAP)

- The MAP shall be integrated to the topmost landing door frame or be mounted as a stand alone casing against the front-/sidewall of the well (on the surface or in a recess); the apparatus normally installed in the MAP can be also installed on a rail inside a special decorative housing, which is integrated separately to the topmost landing door frame (f.e. like a control cabinet); in this case for the decorative housing the same protections are required as for a control cabinet installed on the landing floor level (IP33).  
This MAP in the different ways of installing as described here fore (or the decorative housing) can be located also at the landing below the topmost landing, conditioned there will be an additional service switch in the headroom of the well cutting the incoming power supply of the drive and the control.
- The MAP shall be located in an area which is suitably protected against weather conditions such as rain, wind and temperatures below + 5 degrees Celsius.
  - In case the MAP isn't protected by a ceiling or a roof of a building (f.e. galleries of living buildings in the open air), the MAP as well as the area in front to be used as the working area has to be protected by a shed of such dimensions that this working area remains dry to prevent people becoming wet or to stand in a wet working area performing activities on electrical equipment.
  - In case the MAP is protected like described here fore or is situated on a roofed-in gallery but do have a sidelong connection with the open air and low temperatures can be expected, it has to be prevented that the temperature in the MAP drops below + 5° C.
- In front of the MAP a horizontal free space of 50 x 70 cm as a working area is required; in case the space in front of the MAP allows the passing of public this minimum horizontal free space needs to have a depth of 1.20 m.  
In specific situations this depth might need to be enlarged, the essence is that in any case a free horizontal space of 50 x 70 cm is guaranteed.  
In addition, depending on the frequency of passing public and the nature of activities on site, the use of a fence guarding the working area might be needed.
- The MAP shall not be located in areas where interference with public can be expected to lead to dangerous situations.
- The MAP shall be vandalism resistant.
- The locking elements of the locks of the MAP cover must be installed in opposite directions; at the upper one on top side, at the lower one on bottom side.
- The MAP (with a closed door) shall be protected according IPX3.
- The lighting intensity on the apparatus and in front of the opened MAP shall be 50 Lux, supplied by a someway extractable lamp inside the MAP.
- The electrical equipment inside the MAP shall have a protection degree IP 2X.
- On the inside of the cover of the MAP all different electrical parts (switches, connectors, plugs and LED's) have to be indicated, as well as their different modes of switching.

- On the inside of the cover of the MAP an indication has to be present how to release the brake of the machinery manually, as also a warning indicating that special rescue operations have to be carried out either by KONE or by the fire brigade only (see also chapter 3.3.1, Rescue of entrapped passengers).
- Manual opening of the brake shall require two actions.
- The main power switch has to be situated at 0.60 m above landing floor level at least.
- The primary side of the main power switch has to be marked with the flash sign.
- The main power switch must have the possibility of locking in the "off"-position.
- The PCB with connectors and glass/ceramic fuses (379:1, LOP230) has to be covered, on this cover a flash sign has to be installed.
- Because movements of the car cannot be watched from outside the well, in the MAP the direction and the speed of the car have to be indicated by LED's in an arrow-shaped configuration (375:1, LOPCB).
- The LED-indications in the MAP for the speed, for the directions of movement of the car, and for the indication of the door zone must have emergency supply.

#### 3.4.2. Machinery

- The lighting intensity on the machine shall be 200 Lux.
- The horizontal distance sideways of the traction sheave up to the backside of the car guide rail must be 5 mm at least.
- The device for monitoring the temperature of the lift motor (circuit of PTC-resistors) can be checked on the drive after removing the front cover (connector XT1); this check has to be performed on inspection drive.
- The brake adjusting procedure shall be clearly stated in the instruction manual.
- A locking pin shall be provided on the car roof, with which the car can be secured at working height during inspection and adjustment activities of the machine; in secured position a safety contact engaged by the locking pin shall cut the safety circuit.
- It shall be clearly stated in the instruction manual how to act in case of machine and/or rope replacement.
- It shall be clearly stated in the instruction manual how to act in case of checking the traction.

Note: the stop button on/near the machinery can be omitted (see also par. 3.3.1).

#### 3.4.3. Torque

The machine torque is limited within the drive system. By raising temporarily this limitation in the software of the control (menu 6\_80) it has to be proved on recall mode that:

- The traction sheave will slip underneath the stationary suspension ropes in case the counterweight is resting on its buffer and the machine is rotating in the "up"-direction.
- The traction sheave will slip underneath the stationary suspension ropes in case the overloaded car (125%) is engaged by the safety gear and the machine is rotating in the "down"-direction.
- Engagement of the safety gear during the load test (125%) shall take place with the car roof at landing door level; if the torque is insufficient to disengage the safety gear by RDF mode, the car can be unloaded partly and/or the Special Lifting Tool can be used.

#### 3.4.4. Drive and control

- Because KONE has issued a Declaration of Conformity for manufacturing the monitoring circuit for deactivation of the main and sub main contactors ("start permit") and the circuit for monitoring the temperature of the drive (both circuits being partly situated within the drive and partly situated in the casing of the control), there's no need to dismantle the drive or to remove the cover of the control box for performing these checks at final inspections or periodical examinations. These checks are performed several times during the examination for certification.
- The once set function of the software (menu 6\_80/1 and 2) to raise the limitations of the drive has to reset automatically within 60 seconds if tests to perform slip of the traction sheave (see 3.4.3. Torque) aren't initiated; when running these tests (on recall mode) the function has to reset automatically after the direction button of the recall mode is released.

#### 3.4.5. Motor run time limiter

In order to verify compliance with paragraph 12.10 of EN 81-1 the motor run time limiter shall have to be checked either:

1. By verification; the manufacturer shall be able to show that the device is present and be able to show at which value the run time limiter is set,
2. or by testing.

#### 3.4.6. Well

- In the top of the well three lifting hooks/loops shall be permanently present, one above the car, one above the overspeed governor and one above the machine; on the construction drawings the following items shall be clearly stated:
  - a. the exact positions of the hooks/loops,
  - b. the minimum required bending radius to facilitate proper connecting of hoisting equipment,
  - c. the minimum load capacity of the hooks/loops.Fixed means for hoisting shall be located outside the free vertical distances or the safety block on the car roof. Removable means for hoisting must be stored on a fixed place on the car roof or in the pit or on the wall of the headroom, protected from falling down accidentally.
- Electrical cables may be installed directly to the walls if they are suitable for that purpose (thick sheath); besides they have to be fixed at every 0.50 m at least, as well in horizontal way as in vertical way.
- Wiring in the trunks of the well must be bundled and fixed to the backside of the trunks at regular distances (f.c. every 2 m), also for the purpose of strain relief.

#### 3.4.7. Lighting of the well

- The lamp for the delivery of an intensity of illumination of 200 Lux on the machinery and on the electrical casings in the headroom of the well has to be installed in the well as high as possible and also out of the projection of the travel of the car. Also because the lamp has to be directed, a very short strap must be used.

- It is permitted to install intermediate lamps in the well every 5 - 6 metres combined with a lamp installed on the balustrade on the car roof at machine side and shining downwards as long as the requirements of EN 81-1, chapter 5.9 are fulfilled (in this case the fixed lamp giving an illumination of 200 Lux within a distance of 0,50 m from the highest point in the well and a fixed lamp giving an illumination of at least 50 Lux at a level of 1 meter above the pit floor).

In case the lamp on the balustrade will be installed on the handrail it should be attended that the horizontal distance between the outer parts of the armature of the lamp and fixed parts in the well to pass must be 100 mm at least.

### 3.4.8. Electrical components in the well

For the different casings (the drive module, the control module, eventually a casing for options and the casing with resistors for the brake) in the headroom of the well near the topmost landing door the following requirements are valid:

- The lighting intensity in front of the casings where maintenance activities have to be performed shall be 200 Lux at least.
- The casings can be mounted to the wall or onto static frames in such a way that they can be moved (shifted) within the width of this working/standing area on the car roof.
- The covers of the separate casings may not fall down after loosen up the fixing screws (slot holes).
- The horizontal distance between the most extending parts on the front side of the casings and the most extending parts on the outside of the car opposite to the casings must be 50 mm at least.
- The horizontal distance of the outside of the balustrade on the car roof and the front side of the casings must be 100 mm at least.
- The horizontal distance between the inner side of the balustrade and the inner backside of the casings must not exceed 600 mm (maximum reach and handling).
- The connectors in the SEP casing that remain live after disconnecting the main power must be fixed with a flash warning sign indicating this danger (f.e. XC4 and XM7 on the PCB, and KNX which is floating).
- The drive (frequency converter) must be provided with a data-plate; amongst the relevant electrical data, also the type has to be indicated (for verification purposes).
- The (partly imperforated) casing with the resistors for heat dissipation of the braking current must be mounted against the wall on a high level in the headroom of the well next to the machinery at a distance of 0.5 m at least; for eventual exchange of this casing a procedure has to be available.

Notes: 1) The balustrade on the car roof shall be located within 0.15 m of the edges of the car;  
2) The drive module as well as the casing for control don't need to be approached for normal maintenance activities.

### 3.4.9. Headroom of the well

The clearances and free vertical distances in the top of the well must be in accordance with the requirements of the standard EN 81-1.

Calculations of the height of the headroom therefore are depending on the height of the car to apply, on the nominal speed of the car, on the buffers to apply and on the required balustrade on the car roof.

For the minimum required heights of the headroom at the different speeds and at minimum conditions for car dimensions and overtravel, see the main characteristics of the well at page 6.

### 3.4.10. Overspeed governor

- Both the overspeed governors KONE OL35 are possible to apply (the old one with a separate test groove, the new one without a test groove).
- The overspeed governor will be installed on a high level in the headroom of the well, opposite to the machinery.
- The data plate on the overspeed governor must be readable from the car roof side.
- Because the overspeed governor is installed on a high position in the well, means to reset the safety contact of the overspeed governor has to be available. This auxiliary device (wooden stick with a circular part at one end) must be stored on the car roof (clipped against the balustrade).

### 3.4.11. Car

- The casings of the drive module and the control module are installed against the wall of the well on horizontal sliding bars to get the fronts of these casings within a free reach from the car roof as much as possible. Through that it isn't possible to have the opened fronts of these casings fully opposite to a standing area (500 x 600 mm) at the car roof of small cars. However there won't be done normal maintenance activities within these casings; because of that a free working area isn't required.
- The minimum dimensions of the standing area on the car roof (500 x 600 mm) of the MCD-car opposite to the casings with electrical apparatus in the well aren't available in all cases. Particularly a small strip of the width of this area is located underneath the main beam (front side) of the car sling.  
Because this area still can be used for working, this deviation can be tolerated, conditioned the width of this strip doesn't exceed 150 mm. Besides no normal maintenance activities has to be provided (see former remark).
- Handrail and intermediate rail must be out of one piece, provided the distance to the guide rails is more than 10 cm (MCD car).
- The ends of the handrail and intermediate rail must be installed with such a stability that one of the requirements for car walls can be fulfilled (no elastic deformation larger than 15 mm).
- In case the inspection station (stored on the connection box) is installed on the back side of the car roof out of the reach of 1.00 m from the landing, a second stopping device is required on the front side of the car roof.
- The striker plates for the buffers underneath the car must have dimensions of square 150 mm at least.

### 3.4.12. Levelling / re-levelling

- The magnetic butt-straps for activating the oscillator switch of the door zones doesn't need to be fixed on the car guide rail permanently; sliding one or both the butt-straps out of the indicated door zone results in not opening of the doors.
- In the case levelling / re-levelling is wanted, a PCB (ADO/ACL) must be exchanged in the casing of the control (SEP).

### 3.4.13. Counterweight

- The counterweight can be equipped with a safety gear; in such cases the guide rails for the counterweight has to be have the same dimensions as the car: T70, T82, or T89.
- Because of the dimensions of the bottom beam of the counterweight, a striker plate must be applied at the top of the counterweight buffer. This striker plate must be grasped (not fastened) in the opening of the buffer by the help of the plastic bush that is fastened to the striker plate. The minimum dimension of the striker plate must be square 125 mm or square 150 mm, depending on the circular dimension of the applied buffer.

### 3.4.14. Balance

The balancing factor is important in relation to the applicable torque and the correct functioning of the dynamic brake:

- The balancing factor shall be 50% with a tolerance of +0 / -5%.

### 3.4.15. Guide rails of the car

- Car guide rails T70 can be used up to bracket distances of 2500 mm for nominal loads of 320 kg up to and included 630 kg; car guide rails T82 can be used up to bracket distances of 2500 mm for nominal loads of 800 kg up to and included 1000 kg. If there is a need of larger bracketing distances, guide rails must be chosen according to the tables of the characteristics of the well (see page 7).

### 3.4.16. Pit

- The minimum depth of the pit at the application of EuReCa cars can be decreased from 1400 mm down to 1250 mm, at the application of MCD cars the depth can be decreased from 1400 mm down to 1235 mm. This decrease is the result of the application of polyurethane buffers with a non-compressed height of 100 mm instead of 200 mm, and also a smaller overtravel. The limits for the application for both types of cars and for both types of buffers are given in the tables of the characteristics of the well (see page 8).
- For the EuReCa car two adjustable, telescopic (sand-filled) pillars will be used, fixed at two places to the car guide rails only; the support plates on top of the pillars for fixing the buffers must have dimensions of square 150 mm at least.
- For the MCD car driven by a MX10 machinery one adjustable (fastened by bolts), telescopic pillar will be used, fixed centrally on a base plate between the car guide rails.
- Parts of the bottom side of the car (casings around the pulleys) shall not interfere with the sides of the buffers, nor with the support plates on top of the pillars.
- Fixed vertical installed ladders, as well as vertical stored not-fixed ladders against the side walls of the well must be attainable within the reach of 0.70 m of the entrance of the bottom landing. Installation or storage of ladders beneath and/or integrated in the sill of bottom landing door isn't permitted.



- The not-fixed ladder to use for the entrance of the pit must be placed slantingly in the operational position at an angle of approx.  $70^\circ$  to the horizontal. In operational position the ladder has to extend the level of the bottom landing floor for some rungs/sports, or one of the beams must be enlarged for approx. 1.00 meter.  
An additional requirement is that this ladder can be stored against the wall of the well and is inalienable connected to the well/pit.
- If the horizontal distance between the apron of the car and the front wall of the pit is smaller than 0.15 m, the free vertical distance between the floor of the pit and the apron of the car must be 0.10 m at least.
- If the horizontal distance between the apron of the car and the front wall of the pit exceeds 0.15 m, the free vertical distance between the floor of the pit and the apron of the car must be 0.50 m at least, or the vertical surface below the sill of the bottom landing door must be continuous closed down to at least 0.10 m above the floor of the pit, or the horizontal distance between the apron of the car and the front wall of the well must be decreased until a dimension smaller than or equal to 0.15 m by a continuous closed vertical surface down to the floor of the pit, starting at the bottom of the apron of the bottom landing door.  
The continuous closed vertical surfaces must be composed of smooth and solid material (f.e. sheet metal proper supported) and match the same requirements like the aprons of other landing doors.

#### 3.4.17. Rescue operations

For special rescue operations additional equipment is needed. Depending on the situation a special lifting tool can be used.

- The tools shall be available to persons performing special rescue operations (KONE personal or the fire brigade) without undue delay.
- In the instruction manual it shall be clearly stated how to act in case special rescue operations are necessary.

#### 3.4.18. Special lifting tool

In addition to special rescue operations the special lifting tool is also needed with load testing in order to lift the car out of the engaged safety gear.

- The tool shall be available to persons performing the mentioned activities.

In order to ensure a safe use of the special lifting tool the following conditions shall be met:

- If the floor to floor distance exceeds 4.2 m, means shall be available to persons performing special rescue operations in order to ensure safe access to the car roof and in order to prevent persons from falling in the well because of an opened landing door.
- The ladder in the pit needed for mounting the tool, in case of engaged safety gear at the topmost landing, shall comply with the following demands:
  - a. it shall be hooked in proper insertion means, thus ensuring a fixed position when climbing the ladder,
  - b. it shall comply with EN 81-1, paragraphs 6.2.2.c and d.

### 3.4.19. Fire protection

Because no European legislation or harmonised standards are available at this moment, we feel compliance with local legislation is necessary. Local authorities will have to judge whether or not additional requirements are applicable. Compliance with the essential demands 4.2 and 4.10, annex I of the Lifts Directive shall have to be checked at final inspections and is excluded from this EC-type examination.

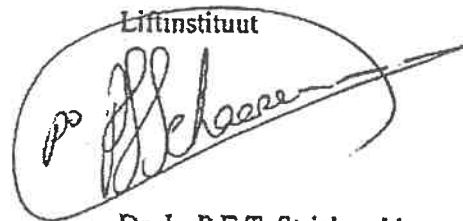
### 3.4.20. Common

- The unlocking key for the landing doors will be equipped with a warning notice pasted on the outside. To avoid damaging this notice, it must be protected with a thin transparent coating.
- Procedures to perform tests and checks must be available in the register to keep at the lift.

## 4. Conclusion

Based on the results of the examination of the described models Liftinstituut is able to issue an EC type-certificate.

Original date : October 30<sup>th</sup>, 2001

Liftinstituut  


Dr. Ir. P.E.T. Striekwold  
Technical Director

## ANNEX

Rated load	Car guide rails		K + Q (kg)	Max. bracketing distance mm	
Q = 320 kg	T 70		520	3200	
			668	3200	
			815	3200	
			963	3200	
			1110	3100	
Q = 400 kg	T 70		665	3200	
			786	3200	
			908	3200	
			1029	3200	
			1150	3000	
Q = 450 kg	T 70		755	3200	
			859	3200	
			963	3200	
			1066	3200	
			1170	3000	
Q = 480 kg	T 70		810	3200	
			905	3200	
			1000	3200	
			1095	3200	
			1190	3000	
Q = 630 kg	T 70	T 82	1065	2500	3200
			1161	2500	3200
			1258	2500	3200
			1354	2500	3200
			1450	2500	3200
Q = 800 kg	T 89		1380	3200	
			1573	3200	
			1765	3200	
			1958	3200	
			2150	3200	
Q = 900 kg (single entrance)	T 89		1560	3200	
			1708	3200	
			1855	3200	
			2003	3200	
			2150	3200	
Q = 900 kg (through type car)	T 89		1560	3000	
			1708	2900	
			1855	2900	
			2150	2800	
			2150	2800	
Q = 1000 kg (wide car: 1600 x 1400 mm)	T 89		1740	3200	
			1843	3200	
			1945	3200	
			2048	3200	
			2150	3200	
Q = 1000 kg (deep car: 1100 x 2100 mm)	T 89		1740	3100	
			1843	3100	
			1945	3100	
			2048	3100	
			2150	3100	

## APPENDIX

For reports of EC-type examinations with numbers:

NL.97.400.1002.002.01 (MonoSpace)  
NL.97.400.1002.002.01/1 (FuRe)  
NL.97.400.1002.002.01/2 (Additions)  
NL.97.400.1002.002.01/5 (Transys)  
NL.97.400.1002.002.01/8 (MX 20 - MonoSpace Special)

Manufacturer:

KONE Ascensori  
Via Figino 41  
20016 Pero (Milan)  
Italy

KONE OYJ  
Kuumolankatu 1  
FIN-05830 Hyvinkää  
Finland

Examinations based on:

Lifts Directive 95/16/EC and EN 81-1

Original EC-type

certifications performed by: Liftinstituut - Amsterdam (The Netherlands)

Scope of this appendix:

Safety component certificates of safety gears, of car door locks and of landing door locks are updated; the numbers of the EC-type examinations are changed for the reason that the name and address of the manufacturer has changed.  
The name of the certificate holder (KONE) is not changed.

Date of issue: October 18<sup>th</sup>, 2001

Liftinstituut



Dr. ir. P.E.T. Striekwold  
Technical Director

Liftinstituut declares that next to the safety components with the old EC-type examination numbers as indicated in the here fore mentioned existing reports, also the same safety components with new EC-type examination numbers are valid according the following tables. The new numbers will be processed in the next revisions of the concerning reports (see page 1).

### Safety gears (instantaneous)

Type number	old number of EC-type examination	new number of EC-type examination
HKD503-D	TÜV-A-AT-1/99/ 010 CEFV	TÜV-A-AT-1/99/ 010 CEFV/1

### Safety gears (progressive)

Type number	old number of EC-type examination	new number of EC-type examination
SGB01	TÜV-A-AT-1/99/ 001 CEFV	TÜV-A-AT-1/99/ 001 CEFV/1
SGB02	TÜV-A-AT-1/99/ 002 CEFV	TÜV-A-AT-1/99/ 002 CEFV/1
SGB05	TÜV-A-AT-1/99/ 004 CEFV	TÜV-A-AT-1/99/ 004 CEFV/1
SGB08	FI 978/1	FI 978/1 (not changed !)

### Locks for landing doors

Type number	old number of EC-type examination	new number of EC-type examination
AMDL1-R1	TÜV-A-AT-1/99/003 CETV/1	TÜV-A-AT-1/99/003 CETV/2
AMDL2-R1	TÜV-A-AT-1/99/004 CETV/1	TÜV-A-AT-1/99/004 CETV/2
AMDL3-R1	TÜV-A-AT-1/99/005 CETV	TÜV-A-AT-1/99/005 CETV/1
AMDL4-R1	TÜV-A-AT-1/99/006 CETV	TÜV-A-AT-1/99/006 CETV/1
AMDL1-R2-EN	9831/1(FI)	TÜV-A-AT-1/00/016 CETV
AMDL2-R2-EN	9832/1(FI)	TÜV-A-AT-1/00/017 CETV
AMDL3-R2-EN	9833/2 (FI)	TÜV-A-AT-1/00/018 CETV
AMDL4-R2-EN	9834/2 (FI)	TÜV-A-AT-1/00/019 CETV
AMDL1-R2-IP54	TÜV-A-AT-1/99/008 CETV	TÜV-A-AT-1/99/008 CETV/1
AMDL2-R2-IP54	TÜV-A-AT-1/99/009 CETV	TÜV-A-AT-1/99/009 CETV/1
AMDL3-R2-IP54	TÜV-A-AT-1/99/010 CETV	TÜV-A-AT-1/99/010 CETV/1
AMDL4-R2-IP54	TÜV-A-AT-1/99/011 CETV	TÜV-A-AT-1/99/011 CETV/1

### Locks for car doors

Type number	old number of EC-type examination	new number of EC-type examination
AMDC1-R1	TÜV-A-AT-1/99/001 FKTV	TÜV-A-AT-1/99/001 FKTV/1
AMDC2-R1	TÜV-A-AT-1/99/002 FKTV	TÜV-A-AT-1/99/002 FKTV/1
AMDC3-R1	TÜV-A-AT-1/99/003 FKTV	TÜV-A-AT-1/99/003 FKTV/1
AMDC4-R1	TÜV-A-AT-1/99/004 FKTV	TÜV-A-AT-1/99/004 FKTV/1
AMDC1-R2	TÜV-A-AT-1/99/006 FKTV/1	TÜV-A-AT-1/99/006 FKTV/2
AMDC2-R2	TÜV-A-AT-1/99/007 FKTV/1	TÜV-A-AT-1/99/007 FKTV/2
AMDC3-R2	TÜV-A-AT-1/99/008 FKTV/1	TÜV-A-AT-1/99/008 FKTV/2
AMDC4-R2	TÜV-A-AT-1/99/009 FKTV/1	TÜV-A-AT-1/99/009 FKTV/2

CITTA' DI TORINO  
DIVISIONE COMMERCIO  
SETTORE REGOLAMENTAZIONE  
SANZIONI - CONTENZIOSO - SANITA'  
UFFICIO ASCENSORI  
23/11/04

Prot.n.D06SCS 21721 / x.10.1

RANIERI SILVANA  
VIA GIULIO 22  
10122 TORINO

e p.c. A.R.P.A.  
VIA PRINCIPESSA CLOTILDE 1  
10144 TORINO

**OGGETTO:ASSEGNAZIONE NUMERO DI MATRICOLA ASCENSORE**

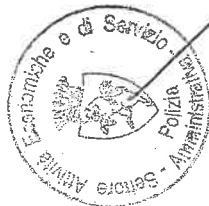
A seguito Vostra comunicazione presentata in data 23/11/2004, relativa all'installazione e messa in esercizio, nello stabile sito in Torino, **VIA GHEDINI GIORGIO 2**, di un impianto 10311950 KONE SPA :  
ASCENSORE  per trasporto di persone  persone e cose  soltanto cose con cabina munita di comandi accessibili a persona da parte dell'installatore KONE ASCENSORI.

**SI COMUNICA**

Ai sensi e per gli effetti dell'art.12 D.P.R. 30/4/1999 n.162 che il numero di matricola assegnato al suddetto impianto è: **1272/1561**  
Si avverte che ai sensi dell'art.16 la presente comunicazione deve essere allegata al libretto dell'impianto e resa disponibile per ogni eventuale controllo.

TORINO, li

2 - DIC. 2004



Il DIRIGENTE

(Ragione Sociale del Proprietario)

..... lì .....

Egregio Signor Sindaco  
del Comune di  
TORINO TO

**Oggetto: messa in esercizio di ASCENSORE in servizio privato n° 10311950**

Ai sensi dell'articolo 12 del DPR 30 aprile 1999, n. 162 relativo al "*Regolamento recante norme per l'attuazione della direttiva 95/16/CE sugli ascensori*", si comunica che nello stabile di Nostra proprietà, situato in VIA GHEDINI 2 - TORINO TO la ditta KONE S.p.A. Via Figino 41 - 20016 Pero (MI) ha provveduto all'installazione di un ASCENSORE, provvisto della marcatura CE ai sensi della Dir. 95/16/CE, avente le seguenti caratteristiche:

velocità [m/s] ..... 1,00  
portata [kg]..... 800  
corsa[m] ..... 17,630  
numero di fermate ..... 6  
tipo di azionamento..... ELETTRICO MONOSPACE

Si comunica altresì che la manutenzione dell'impianto è affidata alla Ditta:

.....

Le verifiche periodiche sull'impianto saranno eseguite dalla Ditta:

.....

Si allega la dichiarazione di conformità CE, di cui all'allegato II della Direttiva 95/16/CE redatta dalla Ditta KONE S.p.A. Via Figino 41 - 20016 Pero (MI).

In attesa di ricevere a breve la comunicazione del numero di matricola assegnato all'impianto, cogliamo l'occasione per porgere distinti saluti.

Il Proprietario o il Legale Rappresentante