NOTA: Acest desen nu constituie o obligatie de aplicare de către contractor.
El reprezintă doar un exemplu de circuit de cale utilizat la CFR si nu trebuie aplicat ca atare.

NOTE: It is not compulsory for the contractor to apply this drawing.
It is only an example of track circuit in use at CFR and shall not be applied as such.

D					
C					
B					
A					
Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANȚAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CFR

C.N.C.F. "C.F.R." - S.A.

CLIENT / CLIENT

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

CONSULTANT / CONSULTANT			Data Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza	12.2011	
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli	12.2011	
Verificat Checked	Expert Cheie Key Expert	P. Amodio	12.2011	

SUBCONTRACTANT / SUBCONTRACTOR AREX COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Stanciu - Dinulescu	12.2011	
Întocmit Elaborated	Proiectant Designer	Angelescu Sergiu	12.2011	

Reabilitarea liniei de cale ferata Brasov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h,
Tronsonul : Brasov - Sighisoara
Rehabilitation of the railway line Brașov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h,
Section : Brasov - Sighisoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
D.E. / D.D.

Denumire desen / Drawing Title :

Statia / Station CATA
Fise de montaj rama aparataj receptie 1
Wiring diagrams for receiving equipment frame 1

Codificare / Codification System	Scara / Scale Fără / No scale	LOT / LOT	Nr. / No 01 / 10

EA51 01 E 13 BX SE 01 3 2 013 1

RAMA APARATA

	1	2	3	4
9	IVL CI	② IVL BD	VL CI	① VL BD
8	25 Sil	③ 25 BD	1L CI	① 1L BD
7	17a Sil	② 17a BD	17b Sil	② 17b BD
6	1 Sil	③ 1 BD	3-5 Sil	① 3-5 BD
5	043 CI	② 043 BD	045 CI	③ 045 BD
4	XB-1AD CI	③ XB-1AD BD	023 CI	① 023 BD
	FI1—FATA			
3	**31** 1 FC-B	**32** 3-5 FC-B	**33** 7-15 FC-B	**34** 9-13 FC-B
2	**21** 043 FC-B	**22** 045 FC-B	**23** 053 FC-B	**24** 055 FC-B
1	**11** XB-1AD FC-B	**12** 023 FC-B	**13** XBF-1AD FC-B	**14** 033 FC-B

01	011 IP-2 XB-1AD/023	012 IP-2 XBF-1AD/033	013 IP-2 043/045	014 IP-2 053/055	015 IP-2 1/3-5	016 IP-2 7-15/9-13

001	002	003	004	005	006	007	008	009	0010	0011	0012
12x100Ω/ 0,3A											

Statia: CATA

J RECEPTIE 1 (FI1)

5	6	7	8	9
IIL CI	④ IIL BD	IIIL CI	③ IIIL BD	
19 SiI	① 19 BD	21-23 SiI	④ 21-23 BD	
7-15 SiI	③ 7-15 BD	9-13 SiI	② 9-13 BD	
053 CI	① 053 BD	055 CI	② 055 BD	
XBF-1AD CI	① XBF-1AD BD	033 CI	③ 033 BD	

FI1—SPATE

34A	**33A**	**32A** VL FC-B	**31A** IVL FC-B
24A IIIL FC-B	**23A** IIL FC-B	**22A** 1L FC-B	**21A** 25 FC-B
14A 21-23 FC-B	**13A** 19 FC-B	**12A** 17b FC-B	**11A** 17a FC-B

016A IP-2	015A IP-2 IVL/VL	014A IP-2 IIL/IIIL	013A IP-2 25/1L	012A IP-2 19/21-23	011A IP-2 17a/17b

0012A	0011A	0010A	009A	008A	007A	006A	005A	004A	003A	002A	001A
10x100Ω / 0,3A											

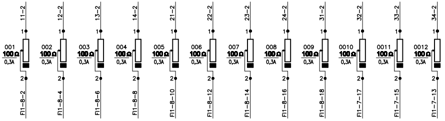
FI1—FATA

31	1-FC	32	3-5-FC	33	7-15-FC	34	9-13-FC
1	FI1-8-17	1	FI1-7-18	1	FI1-7-16	1	FI1-7-14
2	009-1	2	0010-1	2	0011-1	2	0012-1
3	015-1 61-11	3	015-5 63-11	3	016-1 65-11	3	016-5 67-11
4	015-2 61-71	4	015-6 63-71	4	016-2 65-71	4	016-6 67-71

21	043-FC	22	045-FC	23	053-FC	24	055-FC
1	FI1-8-9	1	FI1-8-11	1	FI1-8-13	1	FI1-8-15
2	005-1	2	006-1	2	007-1	2	008-1
3	013-1 51-11	3	013-5 53-11	3	014-1 55-11	3	014-5 57-11
4	013-2 51-71	4	013-6 53-71	4	014-2 55-71	4	014-6 57-71

11	XB-1AD-FC	12	023-FC	13	XBF-1AD-FC	14	033-FC
1	FI1-8-1	1	FI1-8-3	1	FI1-8-5	1	FI1-8-7
2	001-1	2	002-1	2	003-1	2	004-1
3	011-1 41-11	3	011-5 43-11	3	012-1 45-11	3	012-5 47-11
4	011-2 41-71	4	011-6 43-71	4	012-2 45-71	4	012-6 47-71

011	XB-1AD/023-IP	012	XBF-1AD/033-IP	013	043/045-IP	014	053/055-IP	015	1/3-5-IP	016	7-15/9-13-IP
1	11-3	1	13-3	1	21-3	1	23-3	1	31-3	1	33-3
2	11-4	2	13-4	2	21-4	2	23-4	2	31-4	2	33-4
3	FI1-6-1	3	FI1-6-5	3	FI1-6-9	3	FI1-6-13	3	FI1-6-17	3	FI1-6-21
4	8 FI1-6-26	4	8 011-8	4	8 012-8	4	8 013-8	4	8 014-8	4	8 015-8
5	12-3	5	14-3	5	22-3	5	24-3	5	32-3	5	34-3
6	12-4	6	14-4	6	22-4	6	24-4	6	32-4	6	34-4
7	FI1-6-3	7	FI1-6-7	7	FI1-6-11	7	FI1-6-15	7	FI1-6-19	7	FI1-6-23
8	4 012-4	8	4 013-4	8	4 014-4	8	4 015-4	8	4 016-4	8	4 011A-4


11-2
12-2
13-2
14-2
21-2
22-2
23-2
24-2
31-2
32-2
33-2
34-2
001 100Ω 0,3A
002 100Ω 0,3A
003 100Ω 0,3A
004 100Ω 0,3A
005 100Ω 0,3A
006 100Ω 0,3A
007 100Ω 0,3A
008 100Ω 0,3A
009 100Ω 0,3A
0010 100Ω 0,3A
0011 100Ω 0,3A
0012 100Ω 0,3A
1
2
FI1-8-2
FI1-8-4
FI1-8-6
FI1-8-8
FI1-8-10
FI1-8-12
FI1-8-14
FI1-8-16
FI1-8-18
FI1-7-17
FI1-7-15
FI1-7-13

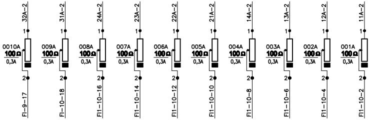
FI1-SPATE

34A		33A		32A	VL-FC	31A	IVL-FC
1		1		1	FI-9-18	1	FI-10-17
2		2		2	0010A-1	2	009A-1
3		3		3	015A-5 93-11	3	015A-1 91-11
4		4		4	015A-6 93-71	4	015A-2 91-71

24A	IIIL-FC	23A	IIL-FC	22A	1L-FC	21A	25-FC
1	FI1-10-15	1	FI1-10-13	1	FI1-10-11	1	FI1-10-9
2	008A-1	2	007A-1	2	006A-1	2	005A-1
3	014A-5 87-11	3	014A-1 85-11	3	013A-5 83-11	3	013A-1 81-11
4	014A-6 87-71	4	014A-2 85-71	4	013A-6 83-71	4	013A-2 81-71

14A	21-23-FC	13A	19-FC	12A	17b-FC	11A	17a-FC
1	FI1-10-7	1	FI1-10-5	1	FI1-10-3	1	FI1-10-1
2	004A-1	2	003A-1	2	002A-1	2	001A-1
3	012A-5 77-11	3	012A-1 75-11	3	011A-5 73-11	3	011A-1 71-11
4	012A-6 77-71	4	012A-2 75-71	4	011A-6 73-71	4	011A-2 71-71

016A		015A	IVL/VL-IP	014A	IIL/IIIL-IP	013A	25/1L-IP	012A	19/21-23-IP	011A	17a/17b-IP
1		1	31A-3	1	23A-3	1	21A-3	1	13A-3	1	11A-3
2		2	31A-4	2	23A-4	2	21A-4	2	13A-4	2	11A-4
3		3	FI1-6-32	3	FI1-6-36	3	FI1-6-33	3	FI1-6-29	3	FI1-6-25
4		4	8 014A-8	4	8 013A-8	4	8 012A-8	4	8 011A-8	4	8 016-8
5		5	32A-3	5	24A-3	5	22A-3	5	14A-3	5	12A-3
6		6	32A-4	6	24A-4	6	22A-4	6	14A-4	6	12A-4
7		7	FI1-6-30	7	FI1-6-34	7	FI1-6-35	7	FI1-6-31	7	FI1-6-27
8		8	4 FI1-6-28	8	4 015A-4	8	4 014A-4	8	4 013A-4	8	4 012A-4


32A-2
31A-2
24A-2
23A-2
22A-2
21A-2
14A-2
13A-2
12A-2
11A-2
1
0010A
009A
008A
007A
006A
005A
004A
003A
002A
001A
100Ω
0,3A
2
FI-9-17
FI-10-18
FI1-10-16
FI1-10-14
FI1-10-12
FI1-10-10
FI1-10-8
FI1-10-6
FI1-10-4
FI1-10-2

FI1

RANDUL 4,5

59		58		57		56		55		54		53		52		51	
			055 BD		055 CI		053 BD		053 CI		045 BD		045 CI		043 BD		043 CI
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-30	11	24-3	11	FI1-4-26	11	23-3	11	FI1-4-22	11	22-3	11	FI1-4-18	11	21-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S2			52	+24S1			52	+24S3			52	+24S2		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-4-32	71	24-4	71	FI1-4-28	71	23-4	71	FI1-4-24	71	22-4	71	FI1-4-20	71	21-4

49		48		47		46		45		44		43		42		41	
			033 BD		033 CI		XBF-1AD BD		XBF-1AD CI		023 BD		023 CI		XB-1AD BD		XB-1AD CI
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-14	11	14-3	11	FI1-4-10	11	13-3	11	FI1- 4-6	11	12-3	11	FI1-4-2	11	11-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S3			52	+24S1			52	+24S1			52	+24S3		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-4-16	71	14-4	71	FI1-4-12	71	13-4	71	FI1-4-8	71	12-4	71	FI1-4-4	71	11-4

FI1

RANDUL 6,7

79		78		77		76		75		74		73		72		71	
			21-23 BD		21-23 Sil		19 BD		19 Sil		17b BD		17b Sil		17a BD		17a Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-5-14	11	14A-3	11	FI1 -5-10	11	13A-3	11	FI1 -5-6	11	12A-3	11	FI1-5-2	11	11A-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S4			52	+24S1			52	+24S2			52	+24S2		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-5-16	71	14A-4	71	FI1-5-12	71	13A-4	71	FI1-5-8	71	12A-4	71	FI1-5-4	71	11A-4

69		68		67		66		65		64		63		62		61	
			9-13 BD		9-13 Sil		7-15 BD		7-15 Sil		3-5 BD		3-5 Sil		1 BD		1 Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-4-27	11	34-3	11	FI1-4-31	11	33-3	11	FI1-4-35	11	32-3	11	FI1-4-34	11	31-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S2			52	+24S3			52	+24S1			52	+24S3		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-4-25	71	34-4	71	FI1-4-29	71	33-4	71	FI1-4-33	71	32-4	71	FI1-4-36	71	31-4

FI1

RANDUL 8,9

99		98		97		96		95		94		93		92		91	
											VL BD		VL CI		IVL BD		IVL CI
										12	0x220			12	0x220		
										11	FI-5-35	11	32A-3	11	FI-5-34	11	31A-3
												13	OVS			13	OVS
										32	3-33			32	1-33		
										31	3-53			31	1-53		
												33	4-32			33	2-32
										52	+24S1			52	+24S2		
										51	Ax220			51	Ax220		
												53	4-31			53	2-31
										72	OVS			72	OVS		
										71	FI-5-33	71	32A-4	71	FI-5-36	71	31A-4

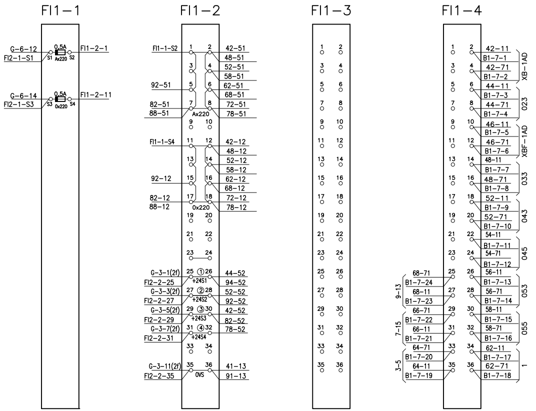
89		88		87		86		85		84		83		82		81	
			IIIL BD		IIIL CI		IIL BD		IIL CI		1L BD		1L CI		25 BD		25 Sil
		12	0x220			12	0x220			12	0x220			12	0x220		
		11	FI1-5-30	11	24A-3	11	FI1-5-26	11	23A-3	11	FI1-5-22	11	22A-3	11	FI1-5-18	11	21A-3
				13	OVS			13	OVS			13	OVS			13	OVS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S3			52	+24S4			52	+24S1			52	+24S3		
		51	Ax220			51	Ax220			51	Ax220			51	Ax220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OVS			72	OVS			72	OVS			72	OVS		
		71	FI1-5-32	71	24A-4	71	FI1-5-28	71	23A-4	71	FI1-5-24	71	22A-4	71	FI1-5-20	71	21A-4

RAMA FI1

BUCLE TENSIUNI

OVS		+24S1	+24S2	+24S3	+24S4	Ax220	0x220
FI1-2-36		FI1-2-26	FI1-2-28	FI1-2-30	FI1-2-32	FI1-2-2	FI1-2-12
41-13	83-13	44-52	52-52	42-52	78-52	42-51	42-12
42-72	84-72	46-52	58-52	48-52	86-52	44-51	44-12
43-13	85-13	56-52	68-52	54-52		46-51	46-12
44-72	86-72	64-52	74-52	62-52		48-51	48-12
45-13	87-13	76-52	72-52	66-52		FI1-2-2	FI1-2-12
46-72	88-72	84-52	92-52	88-52		FI1-2-4	FI1-2-14
47-13	94-72	94-52		82-52		52-51	52-12
48-72	93-13					54-51	54-12
58-72	92-72					56-51	56-12
57-13	91-13					58-51	58-12
56-72						FI1-2-4	FI1-2-14
55-13						FI1-2-6	FI1-2-16
54-72						62-51	62-12
53-13						64-51	64-12
52-72						66-51	66-12
51-13						68-51	68-12
61-13						FI1-2-6	FI1-2-16
62-72						FI1-2-8	FI1-2-18
63-13						72-51	72-12
64-72						74-51	74-12
65-13						76-51	76-12
66-72						78-51	78-12
67-13						FI1-2-8	FI1-2-18
68-72						FI1-2-7	FI1-2-17
78-72						82-51	82-12
77-13						84-51	84-12
76-72						86-51	86-12
75-13						88-51	88-12
74-72						FI1-2-7	FI1-2-17
73-13						FI-2-5	FI-2-15
72-72						92-51	92-12
71-13						94-51	94-12
81-13							
82-72							
	FI1-2-36	FI1-2-26	FI1-2-28	FI1-2-30			

Statia: CATA **EA51 01 E 13 BX SE 013 2 013 1 8/10**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G-6-12
FI2-1-S1
S1
0,5A
Ax220
S2
FI1-2-1
G-6-14
FI2-1-S3
S3
0,5A
0x220
S4
FI1-2-11
FI1-2
FI1-1-S2
92-51
82-51
88-51
Ax220
42-51
48-51
52-51
58-51
62-51
68-51
72-51
78-51
FI1-1-S4
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0x220
42-12
48-12
52-12
58-12
62-12
68-12
72-12
78-12
G-3-1(2f)
FI2-2-25
①
+24S1
G-3-3(2f)
FI2-2-27
②
+24S2
G-3-5(2f)
FI2-2-29
③
+24S3
G-3-7(2f)
FI2-2-31
④
+24S4
G-3-11(2f)
FI2-2-35
OVS
44-52
94-52
52-52
92-52
42-52
82-52
78-52
41-13
91-13
FI1-3
FI1-4
42-11
B1-7-1
42-71
B1-7-2
XB-1AD
44-11
B1-7-3
44-71
B1-7-4
023
46-11
B1-7-5
46-71
B1-7-6
XBF-1AD
48-11
B1-7-7
48-71
B1-7-8
033
52-11
B1-7-9
52-71
B1-7-10
043
54-11
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B1-7-12
045
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B1-7-13
56-71
B1-7-14
053
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B1-7-15
58-71
B1-7-16
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62-11
B1-7-17
62-71
B1-7-18
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68-71
B1-7-24
68-11
B1-7-23
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66-71
B1-7-22
66-11
B1-7-21
7-15
64-71
B1-7-20
64-11
B1-7-19
3-5
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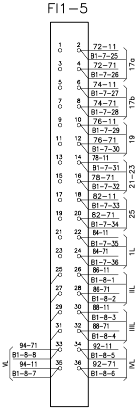
Statia: CATA

EA51 01 E 13 BX SE 013 2 013 1 9/10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B1−7−29
76−71
B1−7−30
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78−11
B1−7−31
78−71
B1−7−32
21−23
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B1−7−33
82−71
B1−7−34
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84−11
B1−7−35
84−71
B1−7−36
1L
86−11
B1−8−1
86−71
B1−8−2
IIL
88−11
B1−8−3
88−71
B1−8−4
IIIL
92−11
B1−8−5
92−71
B1−8−6
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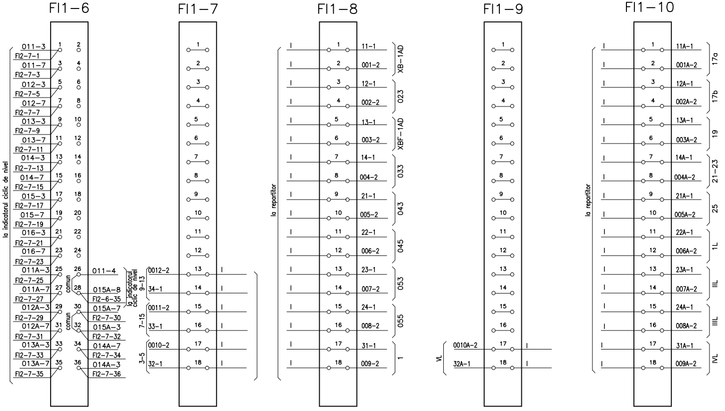
B1−8−8
94−11
B1−8−7
VL

Statia: CATA

EA51 01 E 13 BX SE 013 2 013 1 10/10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013−7
FI2−7−11
014−3
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014−7
FI2−7−15
015−3
FI2−7−17
015−7
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016−3
FI2−7−21
016−7
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012A−3
FI2−7−29
012A−7
FI2−7−31
013A−3
FI2−7−33
013A−7
FI2−7−35
la indicatorul ciclic de nivel
comun
comun
011−4
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FI2−6−35
015A−7
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la indicatorul ciclic de nivel
FI1−7
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0012−2
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3−5
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FI1−8
la repartitor
11−1
001−2
XB−1AD
12−1
002−2
023
13−1
003−2
XBF−1AD
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008−2
055
31−1
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VL
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FI1−10
la repartitor
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12A−1
002A−2
17b
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003A−2
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14A−1
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21−23
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