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 Secțiune 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 Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h,
Tronsonul : Braşov - Sighişoara
Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h,
Section : Braşov - Sighişoara

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

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

Denumire desen / Drawing Title :

Statia / Station ARCHITA
Fise picheti tip pentru circuite de cale
Model boxes for track circuit equipment

Codificare / Codification System	Scara / Scale Fără / No scale	LOT / LOT	Nr. / No 01 / 14

E A 5 1 | 0 1 | E | 1 5 | B X | S E | 0 1 | 5 | 2 | 0 1 9 | 0

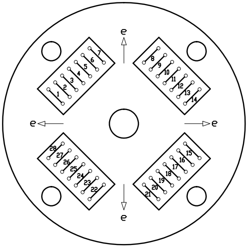
Tabel cu valorile

Circuitul de cale	Secventa
023 C	3
033 C	1
1–7 Si	2
3–5 Si	3
9 Si	3
11 Si	1
13 Si	2
1L	3
IIL	1
IIIL	2
4L	3
10 Si	4
12 Si	2
4–6 Si	4
2–8 Si	3
024 C	2
034 C	4
YF–1ADa	4
Y–1ADa	2

Statia: ARCHITA

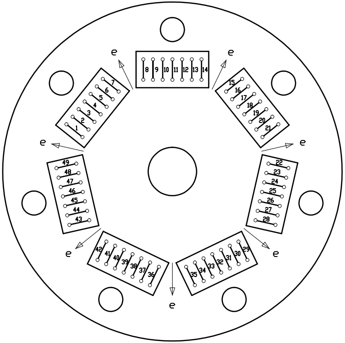
condensatoarelor C1, C2 la capetele de emisie

Tip Circuit	Lungimea circuitului de cale (m)	Valoarea capacitatii (μF)	
		C1	C2
bifilar	260	**1 µF**	**0,47 µF**
bifilar	315	**1 µF**	**0,47 µF**
bifilar	390	**1 µF**	**0,47 µF**
bifilar	330	**1 µF**	**0,47 µF**
bifilar	125	**0,47 µF**	**0,47 µF**
bifilar	105	**0,47 µF**	**0,47 µF**
bifilar	85	**0,47 µF**	**0,47 µF**
bifilar	755	**2 µF**	**0,47 µF**
bifilar	785	**2 µF**	**0,47 µF**
bifilar	780	**2 µF**	**0,47 µF**
bifilar	780	**2 µF**	**0,47 µF**
bifilar	145	**0,47 µF**	**0,47 µF**
bifilar	110	**0,47 µF**	**0,47 µF**
bifilar	335	**1 µF**	**0,47 µF**
bifilar	385	**1 µF**	**0,47 µF**
bifilar	340	**1 µF**	**0,47 µF**
bifilar	290	**1 µF**	**0,47 µF**
bifilar	1140	**3 µF**	**0,47 µF**
bifilar	1140	**3 µF**	**0,47 µF**


e
e
e
e
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28

C4-28

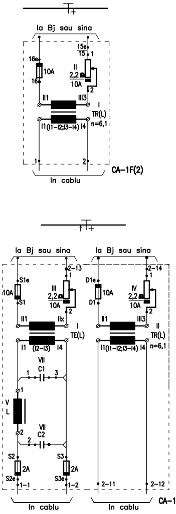
DR 1; DR 2


e
e
e
e
e
e
e
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35
36 37 38 39 40 41 42
43 44 45 46 47 48 49

C7-49

DM1,DM2,DS1,DS3,DS5,DS2,DS4,DS6

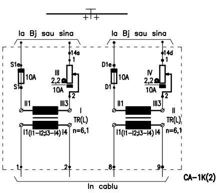
CUTII DE DISTRIBUTIE


la Bj sau sina
16e
16
10A
15e
15
1
II
2,2Ω
10A
2
II1
II13
I
TR(L)
n=6,1
I1(I1–I2;I3–I4) I4
1
2
In cablu
CA–1F(2)
la Bj sau sina
la Bj sau sina
S1e
10A
S1
2–13
1
III
2,2Ω
10A
2
II1
IIx
I
TE(L)
I1 (I2–I3) I4
VII
C1
1
3
1
V
L
2
VII
C2
2
S2
2A
S2e
1–1
S3
2A
S3e
1–2
D1e
10A
D1
2–14
1
IV
2,2Ω
10A
2
II1
II13
II
TR(L)
n=6,1
I1(I1–I2;I3–I4) I4
2–11
2–12
In cablu
In cablu
CA–1

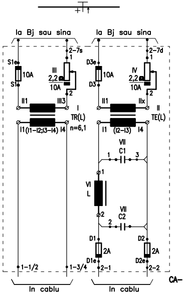
Nota: – La circuitele la care se controleaza ra
din aparatajul de receptie este de 6Ω,

– Valoarea condensatorului C1 se co
de circuit (mono sau bifilar).

SCHEME DE CONECTARE A
PENTRU


la Bj sau sina
la Bj sau sina
S1e
S1
10A
III
2,2Ω
10A
14s
D1e
D1
IV
14d
II1
III3
I
TR(L)
II
n=6,1
I1(I1–I2;I3–I4) I4
1
2
8
9
In cablu

CA-1K(2)


la Bj sau sina
la Bj sau sina
2–7s
2–7d
S1e
S1
D3e
D3
10A
III
IV
2,2Ω
II1
III3
IIx
I
TR(L)
II
TE(L)
n=6,1
I1(I1–I2;I3–I4) I4
I1 (I2–I3) I4
VII
C1
VI
L
C2
D1
D2
D1e
D2e
2A
1–1/2
1–3/4
2–1
2–2
In cablu
In cablu

L(2)ER

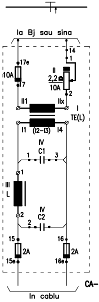
CA-1L(2)RE

mificatiile, valoarea rezistentei

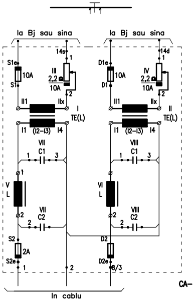
/3,3A

oreleaza cu lungimea circuitului de cale si cu tipul

APARATAJULUI IN CUTII DE APARATAJ
CIRCUITUL DE CALE


la Bj sau sina
17e
17
10A
14
II
2,2Ω
II1
IIx
I
TE(L)
I1 (I2–I3) I4
IV
C1
III
L
C2
15
16
15e
16e
2A
In cablu

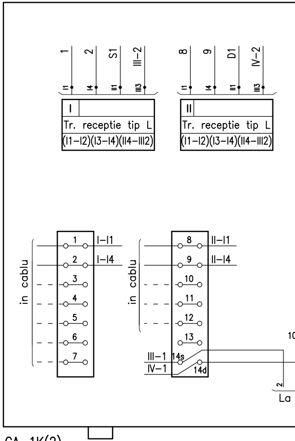
CA-1FM(2)


la Bj sau sina
la Bj sau sina
S1e
S1
14s
14d
D1e
D1
10A
III
IV
2,2Ω
II1
IIx
I
II
TE(L)
I1 (I2–I3) I4
VII
VIII
C1
C2
V
VI
L
S2
S2e
D2
D2e
2A
1
2
8/3
In cablu

CA-1P(2)

Nota: Valoarea condensatorului C1 se coreleaza cu lungimea circuitului de cale si cu tipul de circuit (mono sau bifilar).

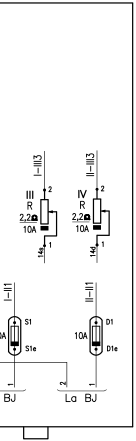
SCHEME DE CONECTARE A APARATAJULUI IN CUTII DE APARATAJ PENTRU CIRCUITUL DE CALE BIFILAR


1
2
S1
III–2
8
9
D1
IV–2
I1
I4
II1
III3
I
II
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
in cablu
in cablu
1
2
3
4
5
6
7
8
9
10
11
12
13
I–I1
I–I4
II–I1
II–I4
III–1
IV–1
14s
14d
10
La

CA–1K(2)
BIF

023 C; 1–7 Si
3–5 Si; 033 C
1L C; 13 Si
9 Si; IIL C
4L C; 11b Si

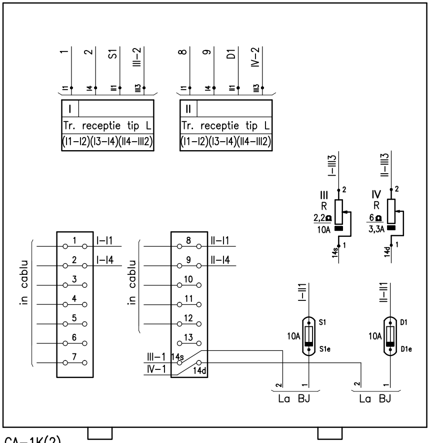
CUTIE APARATAJ PENTRU DOUA



I–III3
II–III3
III
R
2,2Ω
10A
IV
R
2,2Ω
10A
14s
14d
I–II1
II–II1
S1
S1e
D1
D1e
10A
La BJ
La BJ

RECEPTII

SE 015 2 019 0 06/14



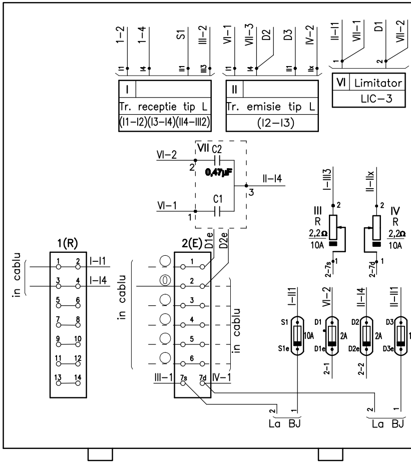
1
2
S1
III–2
8
9
D1
IV–2
I1
I4
II1
III3
I
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
II
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
in cablu
in cablu
1
2
3
4
5
6
7
I–I1
I–I4
8
9
10
11
12
13
II–I1
II–I4
III–1
IV–1
14s
14d
I–III3
II–III3
III
R
2,2Ω
10A
IV
R
6Ω
3,3A
14s
14d
I–II1
II–II1
S1
S1e
D1
D1e
10A
La BJ
La BJ

CA–1K(2)
BIF

IIIL C; 11a Si

CUTIE APARATAJ PENTRU DOUA RECEPTII

Statia: ARCHITA **EA51 01 E 15 BX SE 015 2 019 0 07/14**



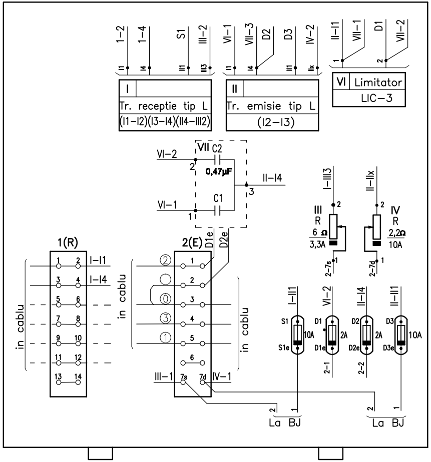
1–2
1–4
S1
III–2
VI–1
VII–3
D2
D3
IV–2
II–I1
VII–1
D1
VII–2
I
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
II
Tr. emisie tip L
(I2–I3)
VI
Limitator
LIC–3
VII
C2
0,47μF
C1
VI–2
VI–1
II–I4
1(R)
2(E)
D1e
D2e
in cablu
in cablu
in cablu
I–I1
I–I4
III–1
7s
7d
IV–1
I–III3
II–IIx
III
R
2,2Ω
10A
IV
R
2,2Ω
10A
2–7s
2–7d
I–II1
VI–2
II–I4
II–II1
S1
S1e
D1
D1e
D2
D2e
D3
D3e
10A
2A
2A
2–1
2–2
La BJ
La BJ

CA–1L(2)RE
BIF

2–8 Si;10 Si
12b Si; 1L C
10b Si; 4L C

CUTIE APARATAJ PENTRU RECEPTIE–EMISIE

Statia: ARCHITA **EA51 01 E 15 BX SE 015 2 019 0 08/**

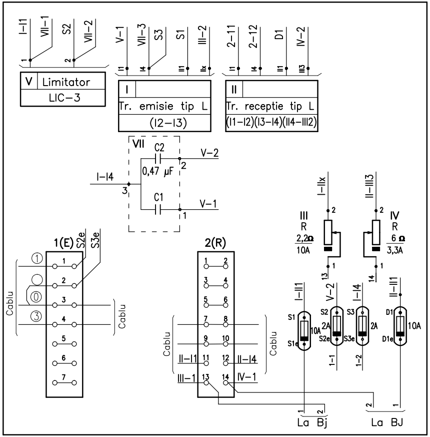

1–2
1–4
S1
III–2
VI–1
VII–3
D2
D3
IV–2
II–I1
VII–1
D1
VII–2
I
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
II
Tr. emisie tip L
(I2–I3)
VI Limitator
LIC–3
VII C2
0,47μF
VI–2
II–I4
C1
VI–1
I–III3
II–IIx
III R 6 Ω 3,3A
IV R 2,2Ω 10A
2–7s
2–7d
1(R)
2(E)
D1e
D2e
I–I1
I–I4
in cablu
III–1
7s
7d
IV–1
I–II1
VI–2
II–I4
II–I1
S1 10A S1e
D1 2A D1e
D2 2A D2e
D3 10A D3e
2–1
2–2
La BJ
La BJ

CA–1L(2)RE
BIF

10a Si; IIIL C

CUTIE APARATAJ PENTRU RECEPTIE–EMISIE

Statia: ARCHITA **EA51 01 E 15 BX SE 015 2 019 0 09/14**

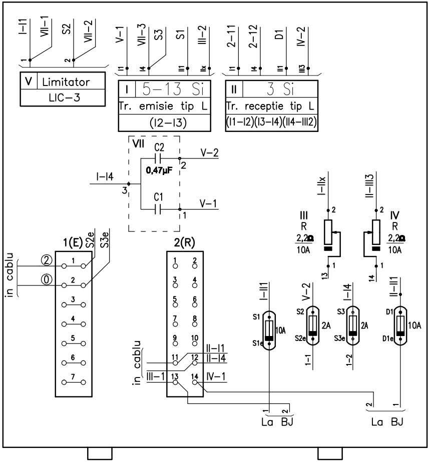

I–I1
VII–1
S2
VII–2
V–1
VII–3
S3
S1
III–2
2–11
2–12
D1
IV–2
V Limitator
LIC–3
I
Tr. emisie tip L
(I2–I3)
II
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
VII C2
0,47 μF
V–2
I–I4
C1
V–1
I–IIx
II–III3
III R 2,2Ω 10A
IV R 6 Ω 3,3A
1(E)
S2e
S3e
Cablu
2(R)
II–I1
II–I4
III–1
IV–1
I–II1
V–2
I–I4
II–I1
S1 10A S1e
S2 2A S2e
S3 2A S3e
D1 10A D1e
1–1
1–2
La Bj
La BJ

CA–1L(2)ER
BIF

IIL C; 12a Si

CUTIE APARATAJ PENTU EMISIE–RECEPTIE

Statia: ARCHITA **EA51 01 E 15 BX SE 015 2 019 0 10/14**

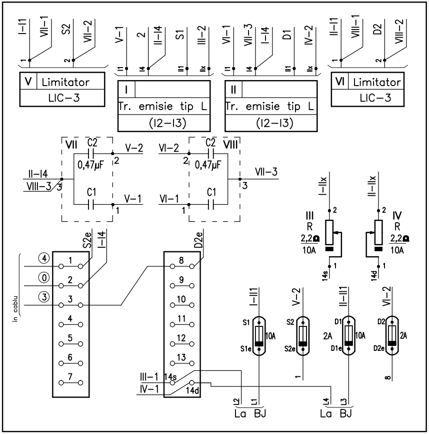

I–I1
VII–1
S2
VII–2
V–1
VII–3
S3
S1
III–2
2–11
2–12
D1
IV–2
V Limitator
LIC–3
I 5–13 Si
Tr. emisie tip L
(I2–I3)
II 3 Si
Tr. receptie tip L
(I1–I2)(I3–I4)(II4–III2)
VII
C2
0,47µF
C1
V–2
V–1
I–I4
I–IIx
II–III3
III
R
2,2Ω
10A
IV
1(E)
S2e
S3e
2(R)
in cablu
II–I1
II–I4
III–1
IV–1
I–I1
V–2
I–I4
II–II1
S1
S1e
S2
S2e
S3
S3e
D1
D1e
2A
1–1
1–2
La BJ

CA–1L(2)ER

BIF

12 Si;4–6 Si

CUTIE APARATAJ PENTRU EMISIE–RECEPTIE

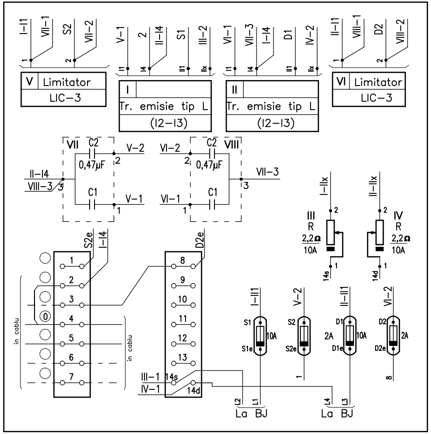

I–I1
VII–1
S2
VII–2
V–1
2
II–I4
S1
III–2
VI–1
VII–3
I–I4
D1
IV–2
II–I1
VIII–1
D2
VIII–2
V Limitator
LIC–3
I
Tr. emisie tip L
(I2–I3)
II
Tr. emisie tip L
(I2–I3)
VI Limitator
LIC–3
VII
C2
0,47µF
C1
V–2
V–1
II–I4
VIII–3
VI–2
VI–1
VIII
VII–3
I–IIx
II–IIx
III
R
2,2Ω
10A
IV
14s
14d
S2e
I–I4
D2e
in cablu
III–1
IV–1
I–I1
V–2
II–I1
VI–2
S1
S1e
S2
S2e
D1
D1e
D2
D2e
2A
La BJ

CA–1P(2)

BIF

034 C; 2–8 Si

CUTIE APARATAJ PENTU DOUA EMISII

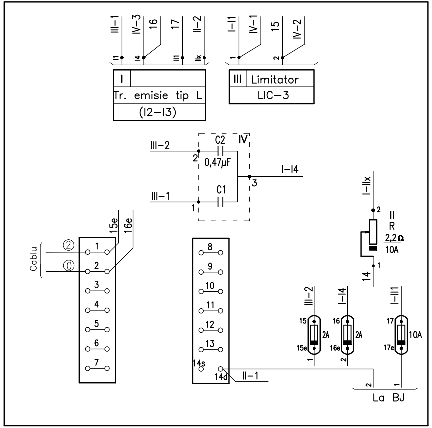

I–I1
VII–1
S2
VII–2
V–1
2
II–I4
S1
III–2
VI–1
VIII–3
I–I4
D1
IV–2
II–I1
VIII–1
D2
VIII–2
V Limitator
LIC–3
I
Tr. emisie tip L
(I2–I3)
II
Tr. emisie tip L
(I2–I3)
VI Limitator
LIC–3
VII C2
0,47µF
V–2
II–I4
VIII–3
C1
V–1
VI–2
C2 VIII
0,47µF
VII–3
VI–1
C1
I–IIx
III
R
2,2Ω
10A
14s
II–IIx
IV
R
2,2Ω
10A
14d
S2e
I–I4
D2e
in cablu
in cablu
I–II1
V–2
II–II1
VI–2
S1
10A
S1e
S2
S2e
D1
2A
10A
D1e
D2
2A
D2e
III–1
IV–1
14s
14d
La BJ
La BJ

CA–1P(2)

BIF

11 Si; 3–5 Si
1–7 Si; 9 Si
4–6 Si; 024 C

CUTIE APARATAJ PENTU DOUA EMISII


III–1
IV–3
16
17
II–2
I–I1
IV–1
15
IV–2
I
Tr. emisie tip L
(I2–I3)
III Limitator
LIC–3
III–2
C2 IV
0,47µF
I–I4
III–1
C1
I–IIx
II
R
2,2Ω
10A
14
15e
16e
Cablu
②
⓪
III–2
I–I4
I–II1
15
2A
15e
16
2A
16e
17
10A
17e
14s
14d
II–1
La BJ

CA–1FM(2)

BIF

13 Si

CUTIE APARATAJ PENTU O EMISIE