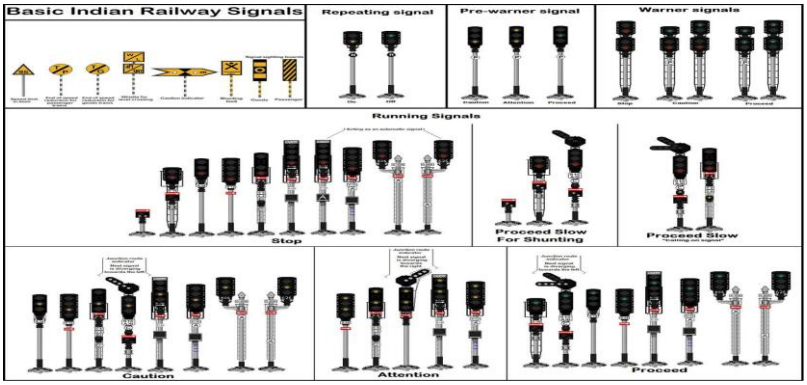
भारत सरकार –GOVERNMENT OF INDIA
रेल मंत्रालय– MINISTRY OF RAILWAYS
(कार्यालयीन प्रयोग हेतु)– (For official use only)

सिग्नलिंग सिम्बल एवं टर्मिनोलोजी पर हस्तपुस्तिका

Hand book on "Signalling symbols & Terminology"



कैमटेक/एस/प्रोज/2016–17/एचबीसिम-सिग-/1.0

नवम्बर 2016

CAMTECH/S/PROJ/2016-17/HB-SIG-SYM/1.0

November 2016

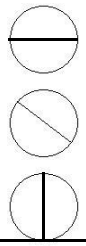
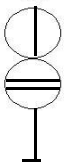
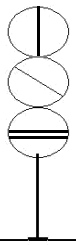
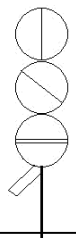
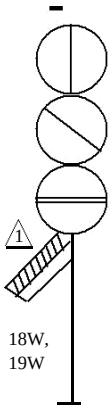
अअमा संRDS
रेल अग्रदूत Transforming Railways
An ISO 9001-2008 Certified Organisation
उत्कृष्ट अनुरक्षण प्रौद्योगिकी केन्द्र
EXCELLENCE IN MAINTENANCE
Indian Railways
Centre for Advanced Maintenance Technology

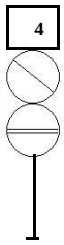
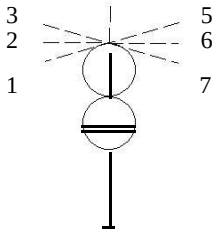
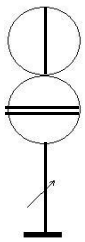
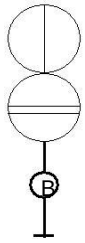
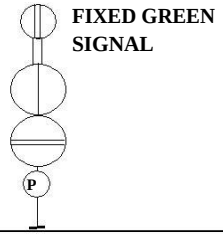
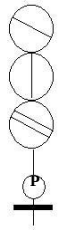
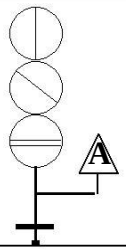
MAHARAJPUR, GWALIOR – 474 005

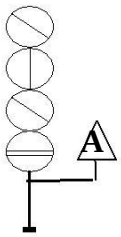
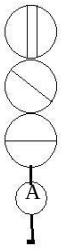
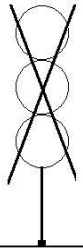
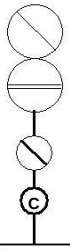
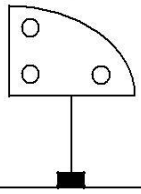
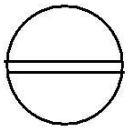
CONTENTS

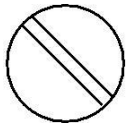
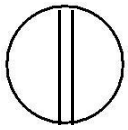
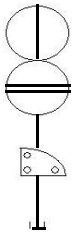
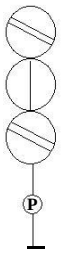
Sr.No.	Description	Page no.
1	COLOUR LIGHT SIGNALS	1-4
2	GENERAL SYMBOLS	5-11
3	BRITISH RRI	12-19
5	SIEMEN'S RRI	22-28
6	SEMAPHORE SIGNALS	29-31
7	TERMINOLOGY USED IN RAILWAY SIGNALLING	32-33
7a.	LED SIGNAL	32
7b.	ELECTRONIC INTERLOCKING	33

SYMBOLS USED IN RAILWAY SIGNALLING
COLOUR LIGHT SIGNALS

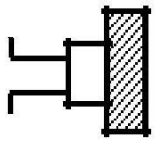
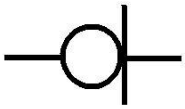
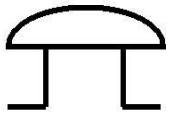
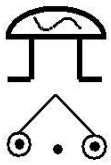
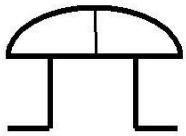
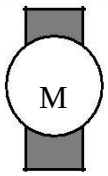
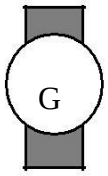
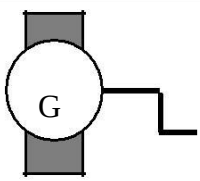
DESCRIPTION	SYMBOLS
Colour Light Signal Aspect कलर लाइट सिगनल के संकेत Red लाल Yellow पीला Green हरा	
Two aspect colour light stop signal दो संकेती कलर लाइट स्टॉप सिगनल	
Three aspect colour light stop signal तीन संकेती कलर लाइट स्टॉप सिगनल	
Four aspect colour light stop signal चार संकेती कलर लाइट स्टॉप सिगनल	
Slot control Colour light signal स्लॉट द्वारा नियंत्रित कलर लाइट सिगनल	
3 Aspect colour light signal No. ¾ of East Cabin (E/C) Slot controlled by SM's Slide No. 1 ,west cabin (W/C) slot lever No. 18/19 तीन संकेती कलर लाइट सिगनल नं. = पूर्व केबिन स्लॉट नियंत्रित स्टे.मा. स्लाईड नं. 1, पश्चिम केबिन स्लॉट लीवर नं. 18W /19W	

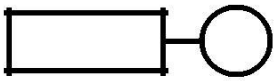
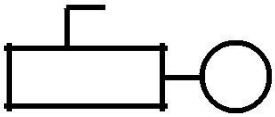
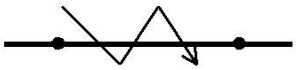
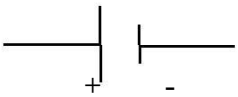
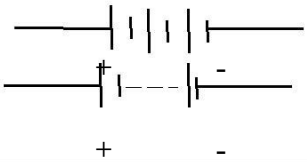
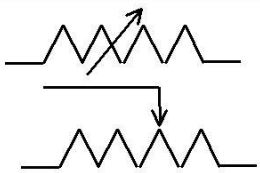
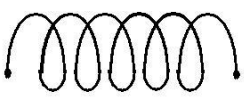
DESCRIPTION	SYMBOLS
2 Aspect C.L.S. with stencil type/ Multi lamp type Route indicator दो संकेती कलर लाइट सिगनल, स्टेंसिल टाइप/ मल्टी लैम्प टाइप रुट इंडीकेटर के साथ	
C.L.S. with junction type/ Direction type Route indicator कलर लाइट सिगनल जंक्शन टाइपध्डायरेक्शन टाइप रुट इंडीकेटर के साथ	
Colour light signal Line clear control by Token कलर लाइट सिगनल लाइन क्लियर नियंत्रण टोकन द्वारा	
Colour light signal Line clear control by lock and block कलर लाइट सिगनल लाइन क्लियर नियंत्रण लॉक एवं ब्लॉक द्वारा	
Colour light Warner signal कलर लाइट वॉर्नर सिगनल	
Colour light distant signal कलर लाइट डिस्टेंट सिगनल	
Semi automatic three aspect Colour light signal तीन संकेती सेमी ऑटोमेटिक कलर लाइट सिगनल	

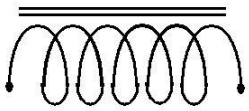
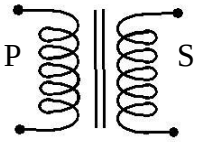
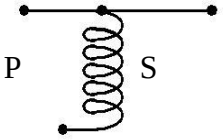
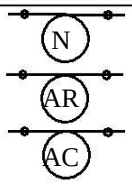
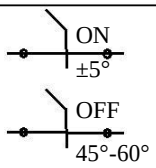
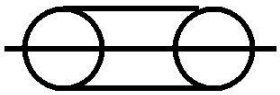
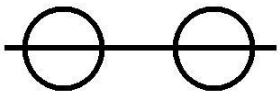
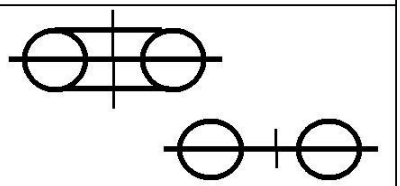
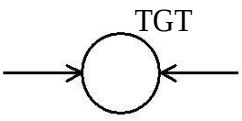
DESCRIPTION	**SYMBOLS**
Semi automatic four aspect Color light signal चार संकेती, सेमी ऑटोमेटिक कलर लाइट सिगनल	
Automatic Colour light signal, three aspect तीन संकेती ऑटोमेटिक कलर लाइट सिगनल	
Automatic Colour light signal, four aspect चार संकेती ऑटोमेटिक कलर लाइट सिगनल	
Colour light signal not in use कलर लाइट सिगनल जो प्रयोग में नहीं हैं	
Calling on signal below a Stop signal रोक सिगनल के नीचे लगा कॉलिंग ऑन सिगनल	
Position light type Shunt Signal पोजीशन लाइट टाईप शन्ट सिगनल	
Normal red aspect for stop signal नार्मल लाल एस्पैक्ट, रोक सिगनल के लिये	

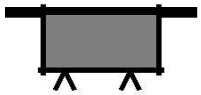
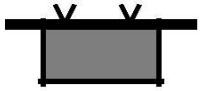
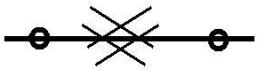
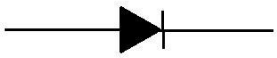
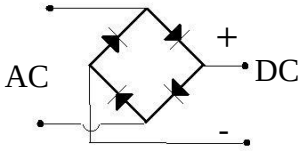
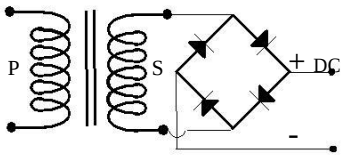
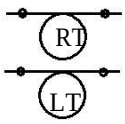
DESCRIPTION	**SYMBOLS**
Normal yellow aspect for distant signal नार्मल पीला एस्पैक्ट डिस्टैंट सिगनल के लिये	
Normal green aspect for automatic Colour Light Sig. नार्मल हरा एस्पैक्ट, ऑटोमेटिक कलर लाइट सिगनल के लिये	
Position light type shunt signal below a stop signal रोक सिगनल के नीचे लगा पोजीशन लाइट टाइप शन्ट सिगनल	
Normal aspect double yellow of a distant signal in rajdhani route(where double distant signal is provided) राजधानी रुट पर जहाँ दो डिस्टैंट लगे हों, बाहरी डिस्टैंट सिगनल का नार्मल एस्पैक्ट	

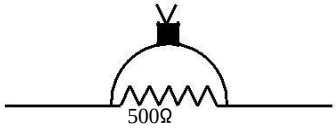
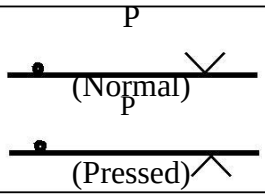
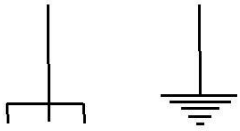
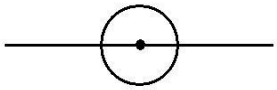
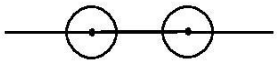
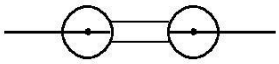
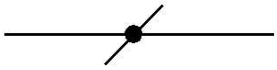
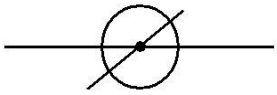
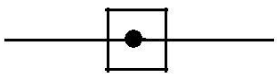
GENERAL SYMBOLS

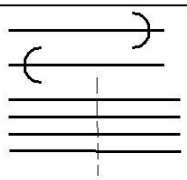
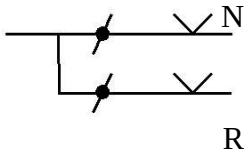
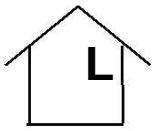
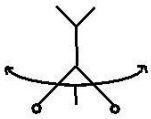
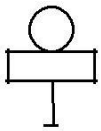
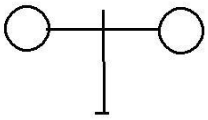
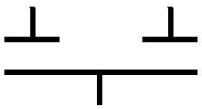
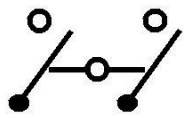
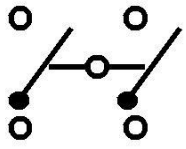
DESCRIPTION	SYMBOLS
Receiver रिसीवर	
Transmitter ट्रांस्मीटर	
Switch स्विच	
D.C.Bell डी.सी. घंटी	
A.C.Bell ए.सी. घंटी	
Block Bell ब्लॉक घंटी	
Motor मोटर	
Generator जनरेटर	
Hand Generator Magneto हैण्ड जनरेटर मैग्नेटो	

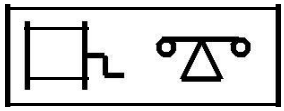
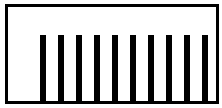
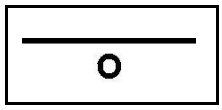
DESCRIPTION	**SYMBOLS**
Electric point machine विद्युत कांटा मशीन	
Dual control electric point machine ड्यूल कन्ट्रोल विद्युत कांटा मशीन	
L.D. एल. डी.	
Fuse फ्यूज	
Cell सैल	
Battery बैटरी	
Resistance प्रतिरोध	
Variable Resistance वेरिऐबल प्रतिरोध	
Coil कुण्डली	

DESCRIPTION	**SYMBOLS**
Choke Coil चोक कुण्डली	
Transformer ट्राँसफॉर्मर	
Auto Transformer ऑटो ट्राँसफॉर्मर	
Lever circuit controller contacts लीवर सर्किट कन्ट्रोलर कांटेक्ट	
Arm circuit controller contacts आर्म सर्किट कन्ट्रोलर कांटेक्ट	
Normal detection contact नॉर्मल डिटेक्शन कांटेक्ट	
Reverse detection contact रिवर्स डिटेक्शन कांटेक्ट	
Detection contacts with Bolt detection बोल्ट डिटेक्शन के साथ डिटेक्टर कांटेक्ट	
TGT Contact टी.जी.टी. कांटेक्ट	

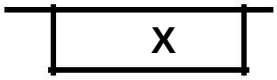
DESCRIPTION	**SYMBOLS**
W.M Tradle व्हील मेक ट्रेडिल	
W.B Tradle व्हील ब्रेक ट्रेडिल	
Special contact स्पेशल कॉन्टेक्ट	
Rectifier रेक्टीफायर	
Bridge Rectifier ब्रिज रेक्टीफायर	
Battery Charger बैटरी चार्जर	
Condensor कन्डेंसर	
Variable Condenser वेरिऐबल कन्डेंसर	
Rotary switch रोटरी स्विच	

DESCRIPTION	**SYMBOLS**
Thermostate contact थर्मोस्टेट कांटेक्ट	
Push button contact पुश बटन कांटेक्ट	
Earth अर्थ	
Terminal टर्मिनल	
Two way Terminal टू वे टर्मिनल	
Two way Terminal along with open strip टू वे टर्मिनल खुलने वाली पत्ती के साथ	
Rack terminal रैक टर्मिनल	
Panel Terminal पैनल टर्मिनल	
Main Board terminal मेन बोर्ड टर्मिनल	

DESCRIPTION	**SYMBOLS**
Boundry line सीमा रेखा	
Flasher relay contact फ्लैशर रिले कांटेक्ट	
Location Box लोकेशन बॉक्स	
Flashing supply फ्लैशिंग सप्लाई	
Road crossing signal (Audible) सुनाई देने वाला रोड सिगनल	
Road crossing signal (Visual) दिखाई देने वाला रोड सिगनल	
Three plate condensor तीन प्लेट का केपेसिटर	
Double pole single throw (DPST) switch डबल पोल, सिंगल थ्रो स्विच	
Double pole double throw (DPST) switch डबल पोल, डबल थ्रो स्विच	

DESCRIPTION	**SYMBOLS**
Telephone alongwith cranck handle box क्रेंक हैंडल बॉक्स के साथ टेलीफोन	
Ground lever frame ग्राउन्ड लीवर फ्रेम	G.F. 
Cabin केबिन	

BRITISH RRI

DESCRIPTION	SYMBOLS
Relay रिले	
Indicator इंडिकेटर	
Lamp लैम्प	
Reverser रिवर्सर	
Bell घंटी	
Slot Relay स्लॉट रिले	
Slot indicator स्लॉट इंडिकेटर	
Slot stick relay स्लॉट स्टिक रिले	
Bell relay घंटी रिले	

DESCRIPTION	**SYMBOLS**
Bell stick relay बेल स्टिक रिले	
Stick relay स्टिक रिले	
Proving relay or repeating relay प्रूविंग रिले	
Track relay ट्रैक रिले	
Track proving relay ट्रैक प्रूविंग रिले	
Track stick relay ट्रैक स्टिक रिले	
Track indicator ट्रैक इंडिकेटर	
Track indication lamp ट्रैक इंडिकेशन लैम्प	
Point Relay प्वाईंट रिले	

DESCRIPTION	SYMBOLS
Normal point Relay सामान्य प्वाईंट रिले	
Reverse point Relay रिवर्स प्वाईंट रिले	
Point indication relay प्वाईंट इंडिकेशन रिले	
Normal point indication relay नार्मल प्वाईंट इंडिकेशन रिले	
Reverse point indication relay रिवर्स प्वाईंट इंडिकेशन रिले	
Normal point indication lamp नार्मल प्वाईंट इंडिकेशन लैम्प	
Reverse point indication lamp रिवर्स प्वाईंट इंडिकेशन लैम्प	
Signal relay सिगनल रिले	
Block stick relay ब्लॉक स्टिक रिले	

DESCRIPTION	**SYMBOLS**
Block checking relay ब्लॉक चैकिंग रिले	
Caution aspect control relay चेतावनी संकेत नियंत्रक रिले	
Attention aspect control relay सजकता संकेत नियंत्रक रिले	
Green clear aspect control relay पूर्ण गति संकेत नियंत्रक रिले	
Route relay रूट रिले	
Red signal lamp लाल सिगनल लैम्प	
Yellow signal lamp पीला सिगनल लैम्प	
Double yellow signal lamp दो पीला सिगनल लैम्प	
Green signal lamp हरा सिगनल लैम्प	

DESCRIPTION	SYMBOLS
Route signal lamp रूट सिगनल लैम्प	
Slow to release relay स्लो टू रिलीज रिले	
Lamp checking relay लैम्प चैकिंग रिले	
Red lamp checking relay रैड लैम्प चैकिंग रिले	
Yellow lamp checking relay एक पीला लैम्प चैकिंग रिले	
Double yellow lamp checking relay दो पीला लैम्प चैकिंग रिले	
Green lamp checking relay हरा लैम्प चैकिंग रिले	
Route lamp checking relay रूट लैम्प चैकिंग रिले	
Red signal indication lamp रैड सिगनल इंडिकेशन लैम्प	

DESCRIPTION	**SYMBOLS**
Single yellow signal indication lamp एक पीला सिगनल इंडिकेशन लैम्प	
Double yellow signal indication lamp दो पीला सिगनल इंडिकेशन लैम्प	
Green signal indication lamp हरा सिगनल इंडिकेशन लैम्प	
Route signal indication lamp रूट सिगनल इंडिकेशन लैम्प	
Slow to pick up relay स्लो टू पिक अप रिले	
Slow to pick up and slow to release relay स्लो टू पिक अप तथा स्लो टू रिलीज रिले	
Button बटन	
Point button प्वाइंट बटन	
Group point button ग्रुप प्वाइंट बटन	

DESCRIPTION	**SYMBOLS**
Nornal point group button नार्मल प्वाइंट ग्रुप बटन	
Reverse point group button रिवर्स प्वाइंट ग्रुप बटन	
Emergency track button इमरजेंसी ट्रैक बटन	
Emergency point button इमरजेंसी प्वाइंट बटन	
Emergency group signal replacement button इमरजेंसी ग्रुप सिगनल रिपलेसमेंट बटन	

BRITISH RRI

COLOUR	BUTTON	DESCRIPTION
Red	GN	Signal knob
Yellow	SGN	Shunt signal knob
Black	K-IN	Siding control knob
Red or chocolate	LXN/LCN	L-xing gate control knob
Black	CH-N	Crank handle control knob
Black Black	WN WWN	Point control knob Group point button
Red	COS-N	Calling on signal control knob
Red with white bar	King	King knob for automatic working
Blue/Black	Day/Night	Power control knob for day/night
Red	Power ack.	Power failure acknowledge push button
White/Black	UN	Route push button
Blue/Green	YN	Slot knob
Green	App-Ack	Approach acknowledge push button
Red	Cancellation	Cancellation push button

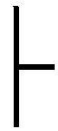
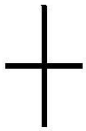
Note:

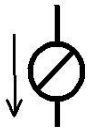
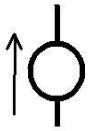
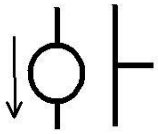
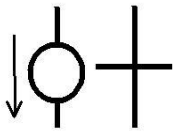
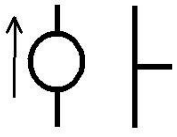
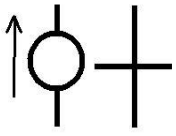
1. Red coloured signal knob two position used in D/L
2. Red coloured signal knob three position used in S/L (optional)
3. Black coloured point knob two position used in PI and three position in RRI.

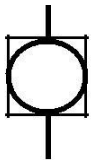
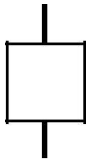
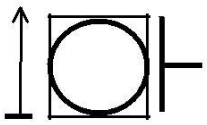
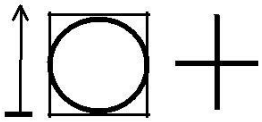
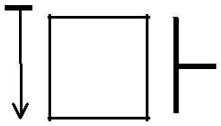
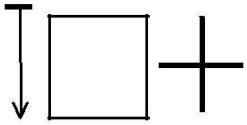
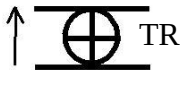
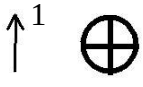
SIEMEN'S RRI

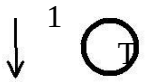
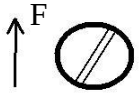
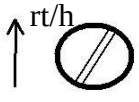
COLOUR	BUTTON	DESCRIPTION
Red	GN	Signal push button
Blue	WN	Point push button
Grey	UN	Route push button
Green	YN	Slot push button
Blue	WWN	Common point button
Blue	EWN	Emergency point button
Grey	EUUYN	Emergency route release button
Blue with white dot on top	EUYN	Emergency route section release button
Red	EGGRN	Emergency button replacing signals at "ON"
Grey	OYN	Over-lap release button
Grey	YYN	Group slot release button
Grey / Green	YYRN	Slot release return button
Blue	CHYN	Crank handle release button
Blue	CHYRN	Crank handle release return button
White	Day/Night	Day/Night intensity button (02 nos)
Grey	1,2,3,4	Panel indication illumination button
Red	GXYN	Signal lamp failure acknowledge button
Blue	WXYN	Point failure ack. button

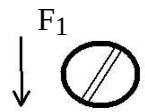
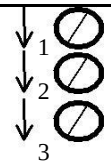
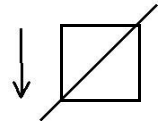
SIEMEN'S RRI

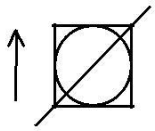
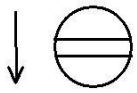
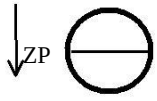
DESCRIPTION	SYMBOLS
Made contact or closed contact बना हुआ कांटेक्ट	
Interrupted contact or open contact ओपन व खुला हुआ कांटेक्ट	
DC Neutral relay डी.सी. न्यूट्रल रिले	
Point control relay प्वाइंट कट्रोंल रिले	
Point detection relay प्वाइंट डिटेक्शन रिले	
Point lock relay प्वाइंट लॉक रिले	
Route relay रूट रिले	
Route checking relay रूट चैकिंग रिले	
Route lock relay रूट लॉक रिले	

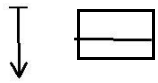
DESCRIPTION	**SYMBOLS**
Signal control relay सिगनल कन्ट्रोल रिले	
Lamp proving relay लैम्प प्रूविंग रिले	
Signal lock relay सिगनल लॉक रिले	
Signal control relay normally De-energised सिगनल कन्ट्रोल रिले नॉर्मली ड्रॉप अवस्था में	
Neutral relay normally energised न्यूट्रल रिले नॉर्मली पिक अप अवस्था में	
Relay normally de-energised contact made- (Back contact) बैक कांटेक्ट	
Relay normally de-energised contact open - (front contact) फ्रंट कांटेक्ट	
Relay normally energised contact made-(front contact) फ्रंट कांटेक्ट	
Relay normally energised contact open-(back contact) बैक कांटेक्ट	

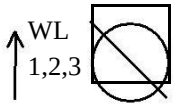
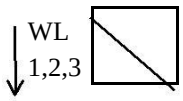
DESCRIPTION	**SYMBOLS**
Normal coil of an interlocked relay इंटरलॉक्ड रिले की नार्मल क्वाइल	
Reverse coil of an interlocked relay इंटरलॉक्ड रिले की रिवर्स क्वाइल	
Normal coil of an interlocked relay-contact made (front contact) इंटरलॉक्ड रिले की नार्मल क्वाइल का बना हुआ कांटेक्ट – (फ्रंट कांटेक्ट)	
Normal coil of an interlocked relay-contact open (back contact) इंटरलॉक्ड रिले की नार्मल क्वाइल का कटा हुआ कांटेक्ट – (बैक कांटेक्ट)	
Reverse coil of an interlocked relay-contact made (back contact) इंटरलॉक्ड रिले की रिवर्स क्वाइल का बना हुआ कांटेक्ट – (बैक कांटेक्ट)	
Reverse coil of an interlocked relay-contact open (front contact) इंटरलॉक्ड रिले की रिवर्स क्वाइल का कटा हुआ कांटेक्ट – (फ्रंट कांटेक्ट)	
Track relay ट्रैक रिले	
Track repeating relay (TPR) ट्रैक रिपिटिंग रिले	

DESCRIPTION	**SYMBOLS**
Second repeater for point track circuit clear proving relay प्वाईंट ट्रैक सर्किट क्लीयर प्रूव्रिंग रिले का द्वितीय रिपीटर	
Time element relay (JR) टाइम एलीमेंट रिले	
Helper relay No.1 to general time element relay (JPR1) हेल्पर रिले क्रं.1 जनरल टाइम एलीमेंट रिले	
Approach time element relay (AJTR) एप्रोच टाइम एलीमेंट रिले	
Signal lock stick relay (GLSR) सिगनल लॉक स्टिक रिले	
Red aspect lamp proving relay (RECR) (Automatic) रैड अस्पेक्ट लैम्प प्रूविंग रिले (ऑटोमेटिक)	
Clear aspect lamp proving relay (D/HECR) (Automatic) ऑफ अस्पेक्ट लैम्प प्रूविंग रिले (ऑटोमेटिक)	
Green aspect lamp proving relay (DECR)(Automatic) हरा अस्पेक्ट लैम्प प्रूविंग रिले (ऑटोमेटिक)	
Red aspect lamp proving relay (RE(Mn)CR) रैड अस्पेक्ट लैम्प प्रूविंग रिले	

DESCRIPTION	**SYMBOLS**
Yellow aspect lamp proving relay (HECR) पीला अस्पेक्ट लैम्प प्रूविंग रिले (HECR)	
Green aspect lamp proving relay (DECR) हरा अस्पेक्ट लैम्प प्रूविंग रिले (DECR)	
Route indication lamp checking relay (UECR) रूट इंडिकेशन लैम्प चैकिंग रिले(UECR)	
Signal push button checking relay (GNCR) सिगनल पुश बटन चैकिंग रिले(GNCR)	
Signal push button relay (GNR) सिगनल पुश बटन रिले(GNR)	
Emergency signal push button relay (EGNR) इमरजेंसी सिगनल पुश बटन रिले(EGNR)	
Signal relay no. 1,2,3 (GR1,GR2,GR3) सिगनल रिले (GR1, GR2, GR3)	
Signal initiating relay (GZR) सिगनल इनीशीऐटिंग रिले(GZR)	
Reverse coil of signal lock relay (G(R)LR) सिगनल लॉक रिले की रिवर्स क्वाइल(G(R)LR)	

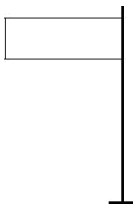
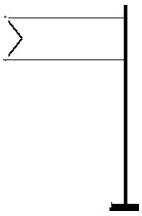
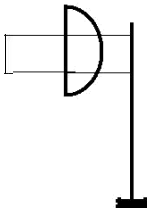
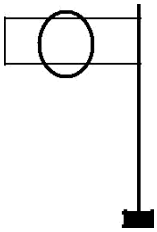
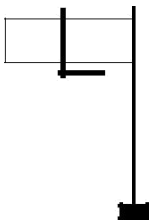
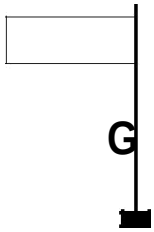
DESCRIPTION	**SYMBOLS**
Normal coil of signal lock relay (G(N)LR) सिगनल लॉक रिले की नार्मल क्वाइल(G(N)LR)	
Route clear checking relay (DUCR) रूट क्लीयर चैकिंग रिले (DUCR)	
Route push buttons checking relay (UNCR) रूट पुश बटन चैकिंग रिले (UNCR)	
Route initiating relay (Z1UR1) रूट इनीशीऐटिंग रिले(Z1UR1)	
Route push button relay (UNR) रूट पुश बटन रिले(UNR)	
Diversion selector relay (Z1UR1) डायवरजन सलेक्टर रिले(Z1UR1)	
Emergency route group release relay (EUUYR) इमरजेंसी रूट ग्रुप रीलीज रिले(EUUYR)	
Zonal route permissibility checking relay (ZDUCR) जोनल रूट परमीसीबीलीटी चैकिंग रिले(ZDUCR)	
Isolation point control relay (UZ4R) आईसोलेशन प्वाइंट कन्ट्रोल रिले(UZ4R)	

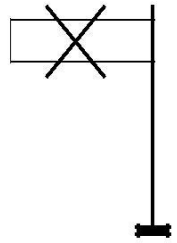
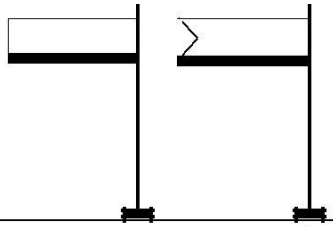
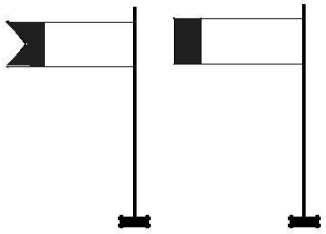
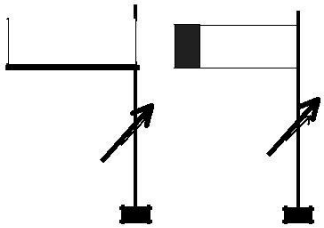
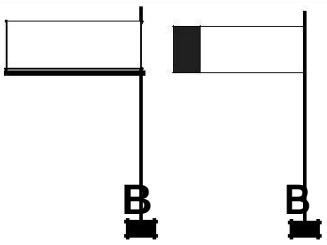
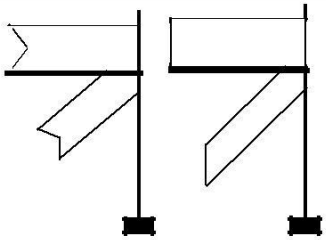
DESCRIPTION	**SYMBOLS**
Route setting relay reverse coil (U(R)S) रूट सेटिंग रिवर्स क्वाइल(U(R)S)	
Route normalising relay normal coil (U(N)S) रूट नार्मेलाइजिंग रिले नार्मल क्वाइल (U(N)S)	
Point push button checking relay (WNCR) प्वाइंट पुश बटन चैकिंग रिले (WNCR)	
Point detector relay No. 1 (WKR1) प्वाइंट डिटेक्टर रिले क्रं 1 (WKR1)	
Point button relay (WNR) प्वाइंट बटन रिले (WNR)	
Emergency point push button relay (EWNR) इमरजेंसी प्वाइंट पुश बटन रिले (EWNR)	
Point group push button relay (WWNR) प्वाइंट ग्रुप पुश बटन रिले(WWNR)	
Switching relay for point chain group (Z3WR) प्वाइंट चेन ग्रुप की स्विचिंग रिले(Z3WR)	
Point contactor relay (WR) प्वाइंट कांटेक्टर रिले(WR)	

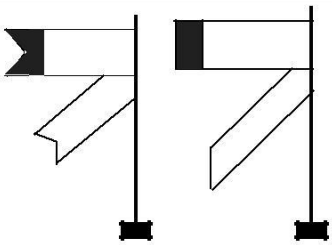
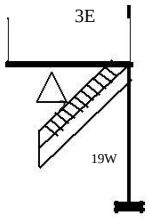
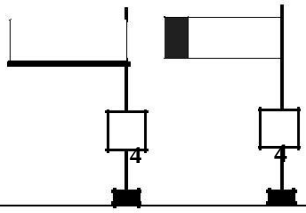
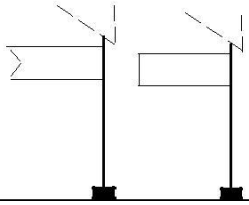
DESCRIPTION	**SYMBOLS**
Point to normal operation controlling relay (N) WLR प्वाइंट के नार्मल ऑपरेशन हेतु कंट्रोलिंग रिले (N) WLR	
Point to reverse operation controlling relay (R) WLR प्वाइंट के रिवर्स ऑपरेशन हेतु कंट्रोलिंग रिले (R)WLR	
Point lock stick relay (WLR) प्वाइंट लॉक स्टिक रिले(WLR)	
Initiating relay for normal movement of points (Z1NWR) इनीशिएटिंग रिले प्वाइंट के नार्मल मूवमेंट के लिये (Z1NWR)	
Initiating relay for reverse movement of points (Z1RWR) इनीशिएटिंग रिले प्वाइंट के रिवर्स मूवमेंट के लिये (Z1RWR)	
Point end position indicating relay (WKR3) प्वाइंट एण्ड पोजीशन इंडीकेशन रिले(WKR3)	

SYMBOLS USED IN RAILWAY SIGNALLING

SEMAPHORE SIGNALS

DESCRIPTION	SYMBOLS
Stop Signal रोक सिगनल	
Warner /Distant Signal चेतावनीध्दूरस्थ सिगनल	
Stop Signal For Dock Platform रोक सिगनल डॉक प्लेटफार्म के लिये	
Stop Signal For Good Line रोक सिगनल गुड्स लाईन के लिये	
Loco Shunt Signal लोको शन्ट सिगनल	
Gate Signal गेट सिगनल	

DESCRIPTION	SYMBOLS
Signal Not In Use सिगनल जो प्रयोग में न हो	
Signal With Reverser रिवर्सर लगा हुआ सिगनल	
Motor Operated Signal सिगनल मोटर चालित	
Signal Controlled By Token टोकन द्वारा नियंत्रित सिगनल	
Signal Controlled By Lock & Block लॉक व ब्लॉक द्वारा नियंत्रित सिगनल	
Signal Slot Control **(Reverser Operated)** सिगनल स्लॉट नियंत्रण (रिवर्सर चालित)	

DESCRIPTION	**SYMBOLS**
Signal Slot Control (Motor Operated) सिगनल स्लॉट नियंत्रण (मोटर चालित)	
Signal No.3 Of East Cabin Slot Controlled By SM's Slide No 2 And West Cabin Slot Lever No. 19 सिगनल कं.3 पूर्व केबिन स्लॉट नियंत्रित स्टे.मा. स्लाइड कं. 2 पश्चिम केबिन स्लॉट लीवर कं. 19	
Signal with Route Indicator सिगनल, रूट इडिंकेटर के साथ	
Upper Quadrant Semaphore Signal ऊपर डइने वाला सिगनल	

TERMINOLOGY USED IN RAILWAY SIGNALLING

LED SIGNAL

Blanking mode:

In **blanking mode**, a Main Signal Lighting Unit shall extinguish when input current drawn by the current regulator falls outside specified limits of rated input current or illumination falls to a value which is not less than 40% of nominal illumination due to a failure or any other reason. In such case, current regulator should not draw input current more than 30 mA at maximum rated voltage.

As the name suggests, in this mode LEDs will stop glowing and input current drawn by the system will be restricted between 10 – 20 mA. All OFF aspects should be configured in Blanking mode to avoid Double Aspects due to failure of OFF aspects.

Non-Blanking mode :

In **non-blanking mode**, a Main Signal Lighting Unit shall remain lit when input current drawn by the current regulator falls outside specified limits of rated input current or illumination falls to a value which is less than 40% of nominal illumination due to a failure or any other reason. In such case, input current drawn by current regulator shall be limited to less than 40 mA to ensure dropping of ECR. Limit on input current shall apply when illumination has deteriorated to a value, which is not less than 40% of nominal illumination.

In this failure mode, LEDs are glowing with very less intensity. Visibility of the signal is affected and becomes very low. Input current at this time becomes approx 20 – 30 mA. All ON aspects should be configured for Non-Blanking mode to avoid Blank Signals (No Light) due to any faults. Non-Blanking mode can be used with LED ECR as well as Conventional ECR:

a) LED ECR mode: In LED ECR mode, CR draws approx 15W power. Input current ranges between 125 to 145 mA. This is sufficient to ensure effective operation of LED ECRs.
b) CONVENTIONAL ECR mode: In this mode, CR draws approx 25W power. Input current ranges between 190 to 250 mA. Higher current is required to effectively operate Conventional ECRs in the OLD installations which operate generally between 150 to 180 mA.

ELECTRONIC INTERLOCKING

Hardware redundancy:

Availability of additional hardware identical to the normally working hardware for taking over at the time of failure.

Software redundancy:

Availability of additional software identical to the normally working software for taking over at the time of failure.

Warm standby:

In this arrangement only one system is in power on mode while the other is in power off mode. There is no communication between the two systems. Once powered on system is failed, the other system will be powered on after a time delay.

Hot standby:

In this system the Main and standby systems are powered on. Both the systems take inputs, process it, communicate with each other and finally give one output. If any one of the two systems shuts down, there is no interruption in the output. The load is automatically taken over by the other equipment without any time delay.

Cold standby:

In this arrangement only one system is in power on mode while the other is in power off mode. There is no communication between the two systems. Once powered on system is failed, the other system is required powered on after a time delay.