

Bruker : Andeby Everk
Stasjon : Linjebryter X
Enhet : Avgang LBRX
Spenning : 22 kV

Releplan nummer : 2010.0999
Tidligere releplan : -
Saksbehandler : Erik Nordskog (sign.)
Plan godkjent av : Ulf B.N. Hansen (sign.)
Godkjent dato : 01.01.2010

Filnavn : c:\temp\releplaneksempel_2.123

Line Data

Fra samleskinne : LBRX **Driftspenning** : 22 kV
Til endepunkt : Besset

Dimensjonerende kabel/luftlinje:

Item [A]	Type
362	1*50 FeAl luftledning

Kapasitivt jordslutningsbidrag fra LBRX til Besset (inkl. avgreninger)

Io [A]	Kommentarer
4.64	Beregnet i NetBas. Totale kap. jordfeilstømmer er 23.4 A

System Data

Maksimale og minimale kortslutningsstrømmer for relé :

ref. 22 kV

1	2	3	4
<p>↓ Maks. innmating</p>	<p>↓ Min. innmating</p>	<p>↑ Maks. innmating</p>	<p>↑ Min. innmating</p>
<p>Referanse: Beregnet i NetBas C-faktor=1.0, I3ph=1.1*Ikmaks</p> <p>Kommentarer:</p>	<p>Referanse: Beregnet i NetBas</p> <p>Kommentarer: Ikmin med maks sideinnmating fra småkraftverk er 195 A</p>	<p>Referanse: Beregnet i NetBas C-faktor=1.0, I3ph=1.1*Ikmaks</p> <p>Kommentarer:</p>	<p>Referanse:</p> <p>Kommentarer:</p>

Kommentarer:

Maksimal innmating forutsetter kortslutningsbidrag på 630 MVA (ref. 66 kV samleskinne i stasjon B) fra 66 kV nett, samt bidrag fra generator G1 og G2. I tillegg kommer bidrag fra småkraftverk.
 Minimal innmating forutsetter kortslutningsbidrag på 75 MVA ref. 66 kV samleskinne, og ingen bidrag fra lokal produksjon.

Fabrikant - modell : Whipp & Bourne - GVR effektbryter med VISIONr
 Plassert / tilkoplet : Avgang LBRX
 Utløsefunksjoner : Ut/inn effektbryter

Strømtrafo (Ip/Is) : 200 / 1 A
 Spenningstrafo (Up/Us) : 11 / 0.1 kV
 Strømtrafo (Iop/Ios) : 50 / 1 A

(Preliminary)

Relebeskrivelse	Funksjonsverdier	Kommentarer
In : 1 eller 5 A Ion : 1 eller 5 A	In = 1 A Ion = 1 A	Bryter levert etter nov. 2008 Releets merkeverdi (fasestrøm) Releets merkeverdi (jordstrøm)
Feeder Settings CT prim : 1-4000 (1) VT prim : 100-33000 (5) VT sec : 100-415 (1) EFCT pr : 1-4000 (1)	CT prim = 200 A VT prim = 11000 V VT sec = 100 V EFCT pr = 50 A	Omsetningsforhold spenningstrafo programmert i henhold til leverandørens anbefalinger (kapasitiv sp. trafo)
Breaker settings O/C Pickup Level I> : 16-800 (2) E/F Pickup Level Io> : 1-100 (0.5) Other Settings: Ve> : 2-150 (1) Ie Directio : 0-360 (1) Ie Sector : 0-360 (1) Cold Load Pickup CLPU : Disabled/Enabled Seq. Co-ordination SC : Disabled/ Enabled Auto Reclose Phase ARP : Shot 1 / 2 / 3 / 4 Auto Reclose Earth ARE : Shot 1 / 2 / 3 / 4 t>DT1 : 0.25-180 (0.01) t>DT2 : 0.25-180 (0.01) t>RT : 1-180 (1)	I> = 140 A prim I> = 0.7 A sek I> = 70 % In Io> = 2 A prim Io> = 0.04 A sek Io> = 4 % In Ve> = 6 % Ie Directior = 90 grader Ie Sector = 160 grader CLPU = Disabled SC = Disabled ARP = 3 Shots ARE = 3 Shots t>DT1 = 5 s t>DT2 = 50 s t>RT = 10 s	Gjelder for "Overcurrent" 1, 2, 3 & 4 Overliggende vern er stilt på 150 A prim I> stilles noe under overliggende vern Gjelder for "Earth Fault" 1, 2, 3 & 4 Jordfeilvern stilles for å detektere jordfeil med overgangsmotstand til jord på 3000 ohm med sikker margin Ve Pickup Level Tilsvare ca. 10% Uo ved åpen delta måling Isolert nett Brukes når brytere er i serie HGIK og LGIK for overstrøm og jordfeil Dead Time 1 Dead Time 2 Reclaim Time

Jacobsen elektro	Linjevern	2010.0999
t>SRT : 1-180 (1)	t>SRT = 1 s	Seq. Reset Time
BT : GVR 15kV / 38kV	BT = GVR 38 kV	Breaker Type Benytter fabrikkinnstilling
t>DTO : 0-0.6 (0.01)	t>DTO = 0.2 s	Dead Time Offset
Protection Settings		
SHOT 1 PROTECTION SET		
Overcurrent 1		
Function : On	Function On	
Trip : On	Trip On	
Warn1 : On / Off	Warn1 Off	
Warn2 : On / Off	Warn2 Off	
Alarm : On / Off	Alarm Off	
Inhibit : On / Off	Inhibit Off	
Blockable : On / Off	Blockable Off	
Reset : On	Reset On	Auto Reset
<i>Trip Level:</i>		
I> : 16-800 (2)	I> = 140 A prim	<i>Nb! I> Innstilt under "Breaker Settings"</i>
	I> = 0.7 A sek	<i>Felles I>-innstilling for "OC1, OC2, OC3</i>
	I> = 70 % In	<i>& OC4"</i>
Karakteristikk: DEFT/ EINV/ VINV/ NINV	Konstanttid (DEFT)	
t> : 0.05-120 (0.01)	t> = 0.2 s	t> stilles selektivt mot lavstrømskontakt for overliggende vern
Overcurrent 1 HS		
Function : On / Off	Function On	
Trip : On / Off	Trip On	
Warn1 : On / Off	Warn1 Off	
Warn2 : On / Off	Warn2 Off	
Alarm : On / Off	Alarm Off	
Inhibit : On / Off	Inhibit Off	
Blockable : On / Off	Blockable Off	
Reset : On	Reset On	Auto Reset
<i>Trip Level:</i>		
I>>1 : 16-5000 (2)	I>>1 = 200 A prim	I>>1 stilles under høystrømskontakt for overliggende vern, samt omtrent likt med Ikmin
	I>>1 = 1.00 A sek	
	I>>1 = 100 % In	
t>>1 : 0.05-2 (0.01)	t>>1 = 0.05 s	Trip Time t>>1 stilles selektivt mot høystrømskontakt for overliggende vern
Earth Fault 1		
Function : On	Function On	
Trip : On / Off	Trip On	
Warn1 : On / Off	Warn1 Off	
Warn2 : On / Off	Warn2 Off	
Alarm : On / Off	Alarm Off	
Inhibit : On / Off	Inhibit Off	
Blockable : On / Off	Blockable Off	
Reset : On	Reset On	Auto Reset
Karakteristikk: DEFT/ EINV/ VINV/ NINV	Konstanttid (DEFT)	
t> : 0.05-120 (0.01)	t> = 0.25 s	t> stilles 250 ms under overliggende vern

Earth Fault 1 HS

Function : On / Off

Function Off

SHOT 2 PROTECTION SET

Overcurrent 2

Function : On
 Trip : On
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off
 Reset On

Auto Reset

Karakteristikk: DEFT/ EINV/ VINV/ NINV
 t> : 0.05-120 (0.01)

Konstanttid (DEFT)
 t> = 0.2 s

Overcurrent 2 HS

Function : On / Off
 Trip : On / Off
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 On
 Warn2 On
 Alarm On
 Inhibit On
 Blockable On
 Reset On

Auto Reset

Trip Level:
 I>>1 : 16-5000 (2)

I>>1 = 200 A prim
 I>>1 = 1 A sek
 I>>1 = 100 % In

Nb! Antar In = CT prim

t>>1 : 0.05-2 (0.01)

t>>1 = 0.05 s

Trip Time

Earth Fault 2

Function : On
 Trip : On / Off
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off
 Reset On

Auto Reset

Karakteristikk: DEFT/ EINV/ VINV/ NINV
 t> : 0.05-120 (0.01)

Konstanttid (DEFT)
 t> = 0.25 s

Earth Fault 2 HS

Function : On / Off

Function Off

SHOT 3 PROTECTION SET**Overcurrent 3**

Function : On
 Trip : On
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off
 Reset On

Auto Reset

Karakteristikk: DEFT/ EINV/ VINV/ NINV
 t> : 0.05-120 (0.01)

Konstanttid (DEFT)
 t> = 0.2 s

Overcurrent 3 HS

Function : On / Off
 Trip : On / Off
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off
 Reset On

Auto Reset

Trip Level:

I>>1 : 16-5000 (2)

I>>1 = 200 A prim
 I>>1 = 1 A sek
 I>>1 = 100 % In

Nb! Antar In = CT prim

t>>1 : 0.05-2 (0.01)

t>>1 = 0.05 s

Trip Time

Earth Fault 3

Function : On
 Trip : On / Off
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off
 Reset : On

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off
 Reset On

Auto Reset

Karakteristikk: DEFT/ EINV/ VINV/ NINV
 t> : 0.05-120 (0.01)

Konstanttid (DEFT)
 t> = 0.25 s

Earth Fault 3 HS

Function : On / Off

Function Off

HIGHCURRENT L/O**Overcurrent HS**

Function : On / Off

Function Off

Earth Fault HS

Function : On / Off

Function Off

OTHER FUNCTIONS

Liveline Overcurrent

Function : On
 Trip : On
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off

Liveline Earthfault

Function : On
 Trip : On
 Warn1 : On / Off
 Warn2 : On / Off
 Alarm : On / Off
 Inhibit : On / Off
 Blockable : On / Off

Function On
 Trip On
 Warn1 Off
 Warn2 Off
 Alarm Off
 Inhibit Off
 Blockable Off

Undervoltage

Function : On

Function Off

Overvoltage

Function : On

Function Off

Load increase

Function : On / Off

Function Off

Over Power

Function : On / Off

Function Off

Over Frequency

Function : On / Off

Function Off

Under Frequency

Function : On / Off

Function Off

Breaker Fail

Function : On / Off

Function Off

External Fault 1

Function : On / Off

Function Off

Digital Input

External Fault 2

Function : On / Off

Function Off

External Fault 3

External Fault 4

Function : On / Off

Function Off

External Fault 5

Ext. Faqult Polarity

Ext. 1 : 0 / 1

Ext. 2 : 0 / 1

Ext. 3 : 0 / 1

Ext. 4 : 0 / 1

Ext. 5 : 0 / 1

Ext. 1 0

Ext. 2 0

Ext. 3 0

Ext. 4 0

Ext. 5 0

0 off = Fault

Serial Timeout

Function : On / Off

Function Off

Internal Error

Function : On / Off

Function Off

CLPU PROTECTION SET

Cold Load Pickup

Function : On

Trip : On

Warn1 : On / Off

Warn2 : On / Off

Alarm : On / Off

Inhibit : On / Off

Blockable : On / Off

Function On

Trip On

Warn1 Off

Warn2 Off

Alarm Off

Inhibit Off

Blockable Off

Karakteristikk: DEFT/ EINV/ VINV/ NINV

t> : 0.05-120 (0.01)

I> : 16-800 (2)

Konstanttid (DEFT)

t> = 0.2 s

I> = 140 A prim

I> = 0.7 A sek

I> = 70 % In

Trip Level

Nb! Antar In = CT prim

Cold Load Pickup HS

Function : On / Off

Trip : On / Off

Warn1 : On / Off

Warn2 : On / Off

Alarm : On / Off

Inhibit : On / Off

Blockable : On / Off

Function On

Trip On

Warn1 Off

Warn2 Off

Alarm Off

Inhibit Off

Blockable Off

I> : 16-5000 (1)

I> = 200 A prim

I> = 1 A sek

I> = 100 % In

Trip Level

Nb! Antar In = CT prim

t : 0.05-1 (0.01)

t = 0.05 s

Trip Time

E/F Cold Load Pickup

Function : On / Off

Function Off

E/F Cold Load Pickup HS

Function : On / Off

Function Off

SINGLE SHOT PROTECTION SET**Overcurrent singelshot**

Function : On

Trip : On

Warn1 : On / Off

Warn2 : On / Off

Alarm : On / Off

Inhibit : On / Off

Blockable : On / Off

Function On

Trip On

Warn1 Off

Warn2 Off

Alarm Off

Inhibit Off

Blockable Off

Karakteristikk: DEFT/ EINV/ VINV/ NINV

t_> : 0.05-120 (0.01)

Konstanttid (DEFT)

t_> = 0.2 s**Overcurrent singelshot HS**

Function : On / Off

Function Off

E/F Single Shot

Function : On

Trip : On

Warn1 : On / Off

Warn2 : On / Off

Alarm : On / Off

Inhibit : On / Off

Blockable : On / Off

Function On

Trip On

Warn1 Off

Warn2 Off

Alarm Off

Inhibit Off

Blockable Off

Karakteristikk: DEFT/ EINV/ VINV/ NINV

t_> : 0.05-120 (0.01)

Konstanttid (DEFT)

t_> = 0.25 s**E/F Single Shot HS**

Function : On / Off

Function Off