

# Electrical Data Table

## Electrical Data

PPH MODEL	Rated Power Supply Volt/Ph/Hz	Starting Method	Compressor			Evap. Fan Motor		CFM		MOC A	MCB 3Ph	RCS @ Ambient	
			No.	LRA [Each]	Max Current [Each]	No.	FLA [Each]	No.	FLA [Each]			95°F	113 °F
40	380-420/3Ph/50Hz	D.O.L	1	41	6.7	1	6.8	1	1	17.5	25	4	4
50			1	45	8.6	1	6.8	1	1	19.5	25	4	6
60			1	65	9.6	1	6.8	1	1	20.5	25	4	6
85			1	91.1	15.8	1	8.7	1	1.55	24	32	6	10
105			2	45	8.6	1	3.7	1	1.55	25	32	6	10
115			1	104	21.1	1	3.7	1	1.55	29	40	10	10
135			1	135	27.6	1	3.7	1	1.55	37	45	16	16
175			2	91.1	15.8	1	5.2	2	1.55	43	50	16	25
195			1	91.1	15.8	1	5.2	2	1.55	48	63	25	25
			1	104	21.1								
230			2	104	21.1	1	7.1	2	1.55	55	63	25	35
0			2	135	27.6	1	9.2	2	1.55	70.5	80	35	50
280			2	135	27.6	1	9.2	2	1.55	70.5	80	35	50
340			3	104	21.1	1	9.2	2	2.4	80	85	50	70
395			3	135	27.6	1	12	2	2.4	103	110	70	95
415			3	135	27.6	1	12	2	2.4	103	110	70	95
450			4	104	21.1	1	12	2	2.4	104	110	70	95
510			4	135	27.6	1	12	2	2.4	130	140	95	120
530			4	135	27.6	1	12	2	2.4	130	140	95	120

**LEGEND:**

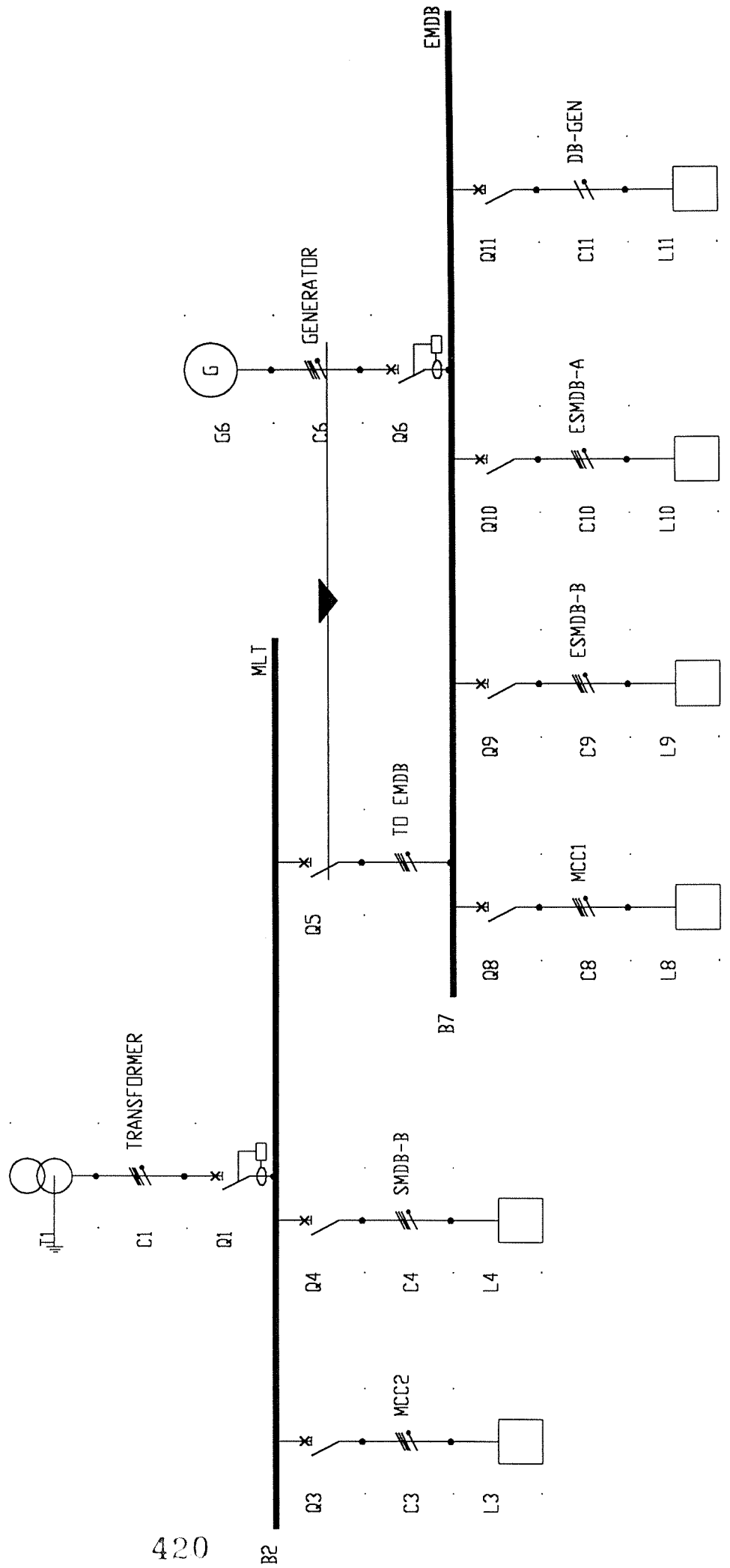
LRA	Locked Rotor Ampere	D.O.L	Direct on Line
EFM	Evaporator Fan Motor	FLA	Full Load Ampere
CFM	Condenser Fan Motor	MOC	Max Operation Current
RCS	[4 Cores] Recommended Cable Size for Main Power And Up To 15 Meter In [ mm <sup>2</sup> ]	MCB	Main Circuit Breaker

Note :- For More Information Refer To The Your Nearest Petra Sales Office

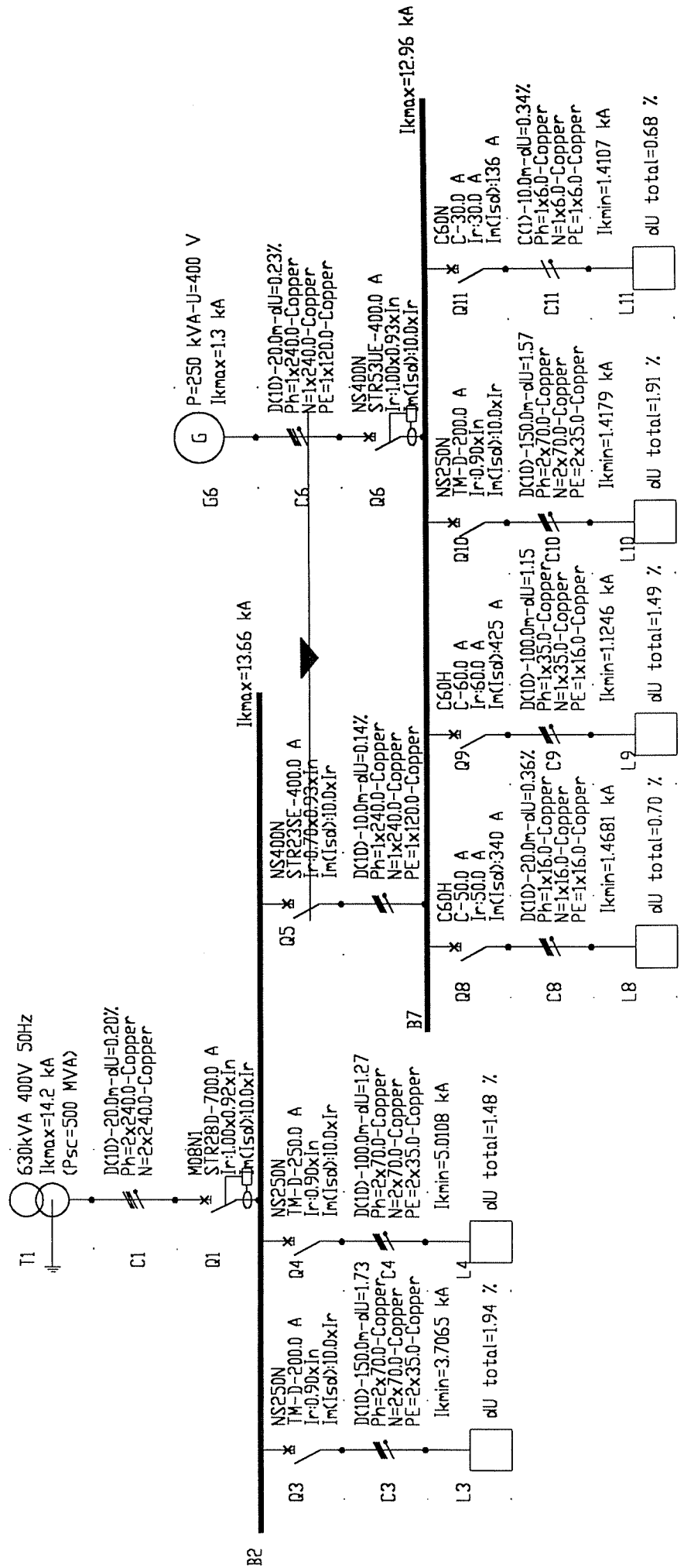
# **DEAD SEA PANORAMIC COMPLEX**

## **POWER CALCULATION**

# MAIN LOW TENSION PANEL



# MAIN LOW TENSION PANEL



12/07/00

**Project :DEAD SEA PANORAMIC COMPLEX**

Earthing arrangement: TT  
Voltage: 400 V

**Circuit : TRANSFORMER ( T1-C1-Q1) - Calculated**

Upstream :  
Downstream : MLT  
Voltage : 400 V

**Source : T1**

Upstream  
Upstream short-circuit power: 500 MVA  
Upstream impedances: Resistance Rt: 0.0351 mOhm  
Inductance Xt: 0.3510 mOhm

**Transformer :**

Number of transformers: 1  
Total power: 630 kVA Unit power: 630 kVA  
Connection: Star-Delta Short-circuit voltage: 4.00 %  
Source impedances: Resistance Rt: 5.4684 mOhm  
Inductance Xt: 16.7580 mOhm

**Cable : C1**

Length: 20.0 m Installation method: D(10)  
Cable type: Multicore Number of layers: 0  
Insulation: PVC Nb of additional joined circuits: 0  
Kind of conductor: Copper Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $0.89 \times 1.00 \times 1.00 \times 0.85 \times 1.00 / 1.00 = 0.76$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	2 x 181.0	2 x 240.0
Neutral	2 x 181.0	2 x 240.0

Voltage drop	upstream	circuit	downst.
ΔU (%)	0.00	0.20	0.20

**Calculation results:**

	Isc upstr.	Ik3max	Ik2max	Iki1max	Ik2min	Iki1min	I fault
(kA)		13.6591	11.8291	13.1829	10.6834	11.8840	11.6684
R (mΩ)		6.0177	12.0353	6.5318	12.2410	6.7375	7.0460
X (mΩ)		17.6424	35.2847	18.1757	35.2847	18.1757	18.4424

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Circuit breaker:**

**Q1**

Name: M08N1-40.0 kA Trip unit rating: 800 A  
Frame rating (In): 700.0 A Trip unit: STR28D  
Number of poles: 4P4TU Earth leakage protection: Yes  
Discrimination: (The discrimination limit is defined for circuit breakers set to max)

BC reinforced by cascading:

Settings:

Overload:  $I_r = 1.00 \times 0.92 \times I_n$   
Magnetic:  $I_m(I_{sd}) = 10.0 \times I_r$

12/07/00

**Circuit :**

Upstream :  
Downstream :  
Voltage :

**MCC2 ( Q3-C3-L3) - Calculated**

MLT

400 V

**Circuit breaker:**

Name:  
Frame rating (In):  
Number of poles:  
Discrimination:  
BC reinforced by cascading:  
Settings:

**Q3**

NS250N-36.0 kA      Trip unit rating: 250 A  
200.0 A      Trip unit: TM-D  
4P4TU      Earth leakage protection: No  
T (The discrimination limit is defined for circuit breakers set to max)

Overload:  $I_r = 0.90 \times I_n$   
Magnetic:  $I_m(I_{sd}) = 10.0 \times I_r$

**Cable :**

Length:  
Cable type:  
Insulation:  
Kind of conductor:

**C3**

150.0 m  
Multicore  
PVC  
Copper

Installation method: D(10)  
Number of layers: 0  
Nb of additional joined circuits: 0  
Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $0.89 \times 1.00 \times 1.00 \times 1.00 \times 1.00 / 1.00 = 0.89$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 119.0	2 x 70.0
Neutral	1 x 119.0	2 x 70.0
PE	1 x 59.5	2 x 35.0

Voltage drop	upstream	circuit	downst.
$\Delta U$ (%)	0.20	1.73	1.93

**Calculation results:**

	Isc upstr	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	I fault
(kA)	13.6591	7.2682	6.2944	4.6143	5.2317	3.7065	-
R (m $\Omega$ )	6.0177	25.8498	51.6996	46.1961	59.8382	54.3346	-
X (m $\Omega$ )	17.6424	23.6424	47.2847	30.1757	47.2847	30.1757	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Load**

I: 176.82 A      Polarity of circuit: 3P + N  
P: 98.00 kW      Earthing arrangement: TT  
p.f. 0.80

12/07/00

**Circuit :**

**SMDB-B ( Q4-C4-L4) - Calculated**

Upstream : MLT  
 Downstream :  
 Voltage : 400 V

**Circuit breaker:**

**Q4**

Name: NS250N-36.0 kA      Trip unit rating: 250 A  
 Frame rating (In): 250.0 A      Trip unit: TM-D  
 Number of poles: 4P4TU      Earth leakage protection: No  
 Discrimination: T (The discrimination limit is defined for circuit breakers set to max)  
 BC reinforced by cascading:

Settings:  
 Overload:  $I_r = 0.90 \times I_n$   
 Magnetic:  $I_m(I_{sd}) = 10.0 \times I_r$

**Cable :**

**C4**

Length: 100.0 m      Installation method: D(10)  
 Cable type: Multicore      Number of layers: 0  
 Insulation: PVC      Nb of additional joined circuits: 0  
 Kind of conductor: Copper      Arrangement of conductors:

**Sizing constraint: overload**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $0.89 \times 1.00 \times 1.00 \times 1.00 \times 1.00 / 1.00 = 0.89$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 130.0	2 x 70.0
Neutral	1 x 130.0	2 x 70.0
PE	1 x 60.5	2 x 35.0

Voltage drop	upstream	circuit	downst.
$\Delta U$ (%)	0.20	1.27	1.47

**Calculation results:**

	$I_{sc\ upstr.}$	$I_{k3\ max}$	$I_{k2\ max}$	$I_{k1\ max}$	$I_{k2\ min}$	$I_{k1\ min}$	f fault
(kA)	13.6591	8.4206	7.2924	5.8839	6.3530	5.0108	-
R (m $\Omega$ )	6.0177	16.0231	32.0462	26.5426	36.2540	30.7505	-
X (m $\Omega$ )	17.6424	25.6424	51.2847	34.1757	51.2847	34.1757	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

Load      I: 204.24 A      Polarity of circuit: 3P + N  
             P: 113.20 kW      Earthing arrangement: TT  
             p.f. 0.80

12/07/00

**Circuit :**

Upstream :  
Downstream :  
Voltage :

**TO EMDB ( Q5) - Calculated**

MLT  
EMDB  
400 V

**Circuit breaker:**

Name:  
Frame rating (In):  
Number of poles:  
Discrimination:  
BC reinforced by cascading:  
Settings:

**Q5**

NS400N-45.0 kA      Trip unit rating:      400 A  
400.0 A      Trip unit:      STR23SE  
4P4TU      Earth leakage protection:      No  
T (The discrimination limit is defined for circuit breakers set to max)

Overload:       $I_r = 0.70 \times 0.93 \times I_n$   
Magnetic:       $I_m(Isd) = 10.0 \times I_r$

**Cable :**

Length:      10.0 m      Installation method:      D(10)  
Cable type:      Multicore      Number of layers:      0  
Insulation:      PVC      Nb of additional joined circuits:      0  
Kind of conductor:      Copper      Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $0.89 \times 1.00 \times 1.00 \times 1.00 \times 1.00 / 1.00 = 0.89$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 233.0	1 x 240.0
Neutral	1 x 233.0	1 x 240.0
PE	1 x 116.5	1 x 120.0

Voltage drop	upstream	circuit	downst.
$\Delta U$ (%)	0.20	0.14	0.34

**Calculation results:**

	$I_{sc\ upstr}$	$I_{k3\ max}$	$I_{k2\ max}$	$I_{k1\ max}$	$I_{k2\ min}$	$I_{k1\ min}$	f <sub>fault</sub>
(kA)	13.6591	12.9559	11.2201	11.9197	10.1051	10.6846	-
R (m $\Omega$ )	6.0177	6.7889	13.5778	8.0743	14.0920	8.5885	-
X (m $\Omega$ )	17.6424	18.4424	36.8847	19.7757	36.8847	19.7757	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

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Assumptions and choice of devices are the responsibility of the user.

Load      I:      257.29 A      Polarity of circuit:      3P + N  
          P:      142.60 kW      Earthing arrangement:      TT  
          p.f.      0.80



12/07/00

**Circuit :**

**GENERATOR ( G6-C6-Q6) - Calculated**

Upstream :  
Downstream :  
Voltage :

400 V

**Generator:**

**G6**

Number of generators: 1  
Total power: 250 kVA  
Transient reactance: 30.000 %

Unit power: 250 kVA  
Zero phase-sequence reactance: 6.000 %  
Subtransient reactance: 30.000 %

**Cable :**

**C6**

Length: 20.0 m  
Cable type: Multicore  
Insulation: PVC  
Kind of conductor: Copper

Installation method: D(10)  
Number of layers: 0  
Nb of additional joined circuits: 0  
Arrangement of conductors:

**Sizing constraint: overload**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
0.89 x 1.00 x 1.00 x 0.90 x 1.00 / 1.00 = 0.80

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	2 x 120.0	1 x 240.0
Neutral	2 x 120.0	1 x 240.0
PE	1 x 120.0	1 x 120.0

Voltage drop	upstream	circuit	downst.
$\Delta U$ (%)	0.00	0.23	0.23

**Calculation results:**

	Isc.upstr.	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	I fault
(kA)		<b>1.3206</b>	<b>1.1436</b>	<b>1.7877</b>	<b>1.0347</b>	<b>1.6174</b>	<b>1.6079</b>
R (m $\Omega$ )		1.2340	2.4680	2.4680	2.9616	2.9616	4.4424
X (m $\Omega$ )		192.8000	385.6000	142.4000	385.6000	142.4000	143.2000

Results of calculations as per UTE C15-500 (CENELEC R064-003).

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Assumptions and choice of devices are the responsibility of the user.

**Circuit breaker:**

**Q6**

Name: NS400N-45.0 kA  
Frame rating (In): 400.0 A  
Number of poles: 4P4TU  
Discrimination:  
BC reinforced by cascading:

Trip unit rating: 400 A  
Trip unit: STR53UE  
Earth leakage protection: Yes  
(The discrimination limit is defined for circuit breakers set to max)

Settings:

Overload:  $I_r = 1.00 \times 0.93 \times I_n$   
Magnetic:  $I_m(I_{sd}) = 10.0 \times I_r$

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**Circuit :** **MCC1 ( Q8-C8-L8) - Calculated**

Upstream : EMDB  
 Downstream :  
 Voltage : 400 V

**Circuit breaker:**

**Q8**  
 Name: C60H-15.0 kA      Trip unit rating: 63 A  
 Frame rating (In): 50.0 A      Trip unit: C  
 Number of poles: 4P4TU      Earth leakage protection: No  
 Discrimination: T (The discrimination limit is defined for circuit breakers set to max)  
 BC reinforced by cascading:  
 Settings:  
     Overload: Ir = 50.0 A  
     Magnetic: Im(Isd) = -

**Cable :**

**C8**  
 Length: 20.0 m      Installation method: D(10)  
 Cable type: Multicore      Number of layers: 0  
 Insulation: PVC      Nb of additional joined circuits: 0  
 Kind of conductor: Copper      Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $0.89 \times 1.00 \times 1.00 \times 1.00 \times 1.00 / 1.00 = 0.89$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 8.0	1 x 16.0
Neutral	1 x 8.0	1 x 16.0
PE	1 x 8.0	1 x 16.0

Voltage drop	upstream	circuit	downst.
$\Delta U$ (%)	0.34	0.36	0.70

**Calculation results:**

	Isc upstr.	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	I fault
I (kA)	12.9559	7.0690	6.1220	4.3150	1.0148	1.4681	-
R (mΩ)	6.7889	29.9264	59.8528	54.3493	58.4916	58.4916	-
X (mΩ)	18.4424	20.0424	40.0847	22.9757	388.8000	145.6000	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Load**  
 I: 36.09 A      Polarity of circuit: 3P + N  
 P: 20.00 kW      Earthing arrangement: TT  
 p.f. 0.80

12/07/00

**Circuit :** **ESMDB-B ( Q9-C9-L9) - Calculated**

Upstream : EMDB  
 Downstream :  
 Voltage : 400 V

**Circuit breaker:** **Q9**

Name: C60H-15.0 kA      Trip unit rating: 63 A  
 Frame rating (In): 60.0 A      Trip unit: C  
 Number of poles: 4P4TU      Earth leakage protection: No  
 Discrimination: T (The discrimination limit is defined for circuit breakers set to max)  
 BC reinforced by cascading:  
 Settings:  
     Overload: Ir = 60.0 A  
     Magnetic: Im(Isd) = -

**Cable :** **C9**

Length: 100.0 m      Installation method: D(10)  
 Cable type: Multicore      Number of layers: 0  
 Insulation: PVC      Nb of additional joined circuits: 0  
 Kind of conductor: Copper      Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 0.89 x 1.00 x 1.00 x 1.00 x 1.00 / 1.00 = 0.89

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 12.0	1 x 35.0
Neutral	1 x 12.0	1 x 35.0
PE	1 x 12.0	1 x 16.0

Voltage drop	upstream	circuit	downst.
ΔU (%)	0.34	1.15	1.49

**Calculation results:**

	Isc upstr.	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	I fault
I (kA)	12.9559	3.9009	3.3782	2.1336	0.9453	1.1246	-
R (mΩ)	6.7889	59.6746	119.3493	113.8458	129.8873	129.8873	-
X (mΩ)	18.4424	26.4424	52.8847	35.7757	401.6000	158.4000	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Load**  
 I: 47.63 A      Polarity of circuit: 3P + N  
 P: 26.40 kW      Earthing arrangement: TT  
 p.f. 0.80

12/07/00

**Circuit :**

**ESMDB-A ( Q10-C10-L10) - Calculated**

Upstream : EMDB  
 Downstream :  
 Voltage : 400 V

**Circuit breaker:**

**Q10**

Name: NS250N-36.0 kA      Trip unit rating: 250 A  
 Frame rating (In): 200.0 A      Trip unit: TM-D  
 Number of poles: 4P4TU      Earth leakage protection: No  
 Discrimination: (The discrimination limit is defined for circuit breakers set to max)  
 BC reinforced by cascading: 45.0 kA  
 Settings:  
     Overload: Ir = 0.90 x In  
     Magnetic: Im(Isd) = 10.0 x Ir

**Cable :**

**C10**

Length: 150.0 m      Installation method: D(10)  
 Cable type: Multicore      Number of layers: 0  
 Insulation: PVC      Nb of additional joined circuits: 0  
 Kind of conductor: Copper      Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 0.89 x 1.00 x 1.00 x 1.00 x 1.00 / 1.00 = 0.89

CSA (mm²)	theoretical	used
Per phase	1 x 119.0	2 x 70.0
Neutral	1 x 119.0	2 x 70.0
PE	1 x 59.5	2 x 35.0

Voltage drop:	upstream	circuit	downst.
ΔU (%)	0.34	1.57	1.91

**Calculation results:**

	Isc upstr	If3max	If2max	If1max	If2min	If1min	I fault
(kA)	12.9559	7.0451	6.1012	4.4398	0.9955	1.4179	-
R (mΩ)	6.7889	26.6211	53.2421	47.7386	50.5587	50.5587	-
X (mΩ)	18.4424	24.4424	48.8847	31.7757	397.6000	154.4000	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Load**      I: 160.58 A      Polarity of circuit: 3P + N  
                  P: 89.00 kW      Earthing arrangement: TT  
                  p.f. 0.80

12/07/00

**Circuit :** **DB-GEN ( Q11-C11-L11) - Calculated**

Upstream : EMDB  
 Downstream :  
 Voltage : 400 V

**Circuit breaker:**

**Q11**

Name: C60N-20.0 kA Trip unit rating: 63 A  
 Frame rating (In): 30.0 A Trip unit: C  
 Number of poles: 2P1TU Earth leakage protection: No  
 Discrimination: T (The discrimination limit is defined for circuit breakers set to max)  
 BC reinforced by cascading:  
 Settings:

Overload: Ir = 30.0 A  
 Magnetic: Im(Isd) = -

**Cable :**

**C11**

Length: 10.0 m Installation method: C(1)  
 Cable type: Multicore Number of layers: 0  
 Insulation: PVC Nb of additional joined circuits: 0  
 Kind of conductor: Copper Arrangement of conductors:

**Sizing constraint: user**

Correction ( Temperature x Installation method x Neutral x Grouping x User / Protection ) :  
 $1.00 \times 0.80 \times 1.00 \times 1.00 \times 1.00 / 1.00 = 0.80$

CSA (mm <sup>2</sup> )	theoretical	used
Per phase	1 x 1.5	1 x 6.0
Neutral	1 x 1.5	1 x 6.0
PE	1 x 1.5	1 x 6.0

Voltage drop	upstream	circuit	downst
ΔU (%)	0.34	0.34	0.68

**Calculation results:**

	Isc upstr	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	I fault
(kA)	12.9559			3.4890		1.4107	-
R (mΩ)	6.7889			69.7743		77.0016	-
X (mΩ)	18.4424			21.3757		144.0000	-

Results of calculations as per UTE C15-500 (CENELEC R064-003).

UTE approval 15L-501

Assumptions and choice of devices are the responsibility of the user.

**Load** I: 12.99 A Polarity of circuit: 1P  
 P: 2.40 kW Earthing arrangement: TT  
 p.f. 0.80

GENERATOR	G6			
Power (kVA)	250			
Earthing arrangement	TT			
Distributed neutral	Yes			
Un Ph-Ph (V)	400			
System frequency (Hz)	50			
x'o (%)	6.000			
x'd (%)	30.000			
x" (%)	30.000			

LOAD	L3	L4	L8	L9
Ib (A)	176.82	204.24	36.09	47.63
Circuit polarity	3P + N	3P + N	3P + N	3P + N
Earthing arrangement	TT	TT	TT	TT
Power (kW)	98.00	113.20	20.00	26.40

LOAD	L10	L11		
Ib (A)	160.58	12.99		
Circuit polarity	3P + N	1P		
Earthing arrangement	TT	TT		
Power (kW)	89.00	2.40		

CIRCUIT-BREAKER	Q1	Q3	Q4	Q5
Range	Masterpact	Compact	Compact	Compact
Designation	M08N1	NS250N	NS250N	NS400N
Trip unit / Curve	STR28D	TM-D	TM-D	STR23SE
Nb poles protected	4P4TU	4P4TU	4P4TU	4P4TU
Earth-leakage protection	Yes	No	No	No
Trip unit rating (A)	700.0	200.0	250.0	400.0
Io setting	1.00			0.70
Ir setting	0.92	0.90	0.90	0.93
Im/Isd setting	10.0	10.0	10.0	10.0

CIRCUIT-BREAKER	Q8	Q9	Q10	Q11
Range	Multi9	Multi9	Compact	Multi9
Designation	C60H	C60H	NS250N	C60N
Trip unit / Curve	C	C	TM-D	C
Nb poles protected	4P4TU	4P4TU	4P4TU	2P1TU
Earth-leakage protection	No	No	No	No
Trip unit rating (A)	50.0	60.0	200.0	30.0
Io setting				
Ir setting			0.90	
Im/Isd setting			10.0	

CIRCUIT-BREAKER	Q6			
Range	Compact			
Designation	NS400N			
Trip unit / Curve	STR53UE			
Nb poles protected	4P4TU			
Earth-leakage protection	Yes			
Trip unit rating (A)	400.0			
Io setting	1.00			
Ir setting	0.93			
Im/Isd setting	10.0			

CABLE	C1	C3	C4	C5
Length (m)	20.0	150.0	100.0	10.0
Installation method	D(10)	D(10)	D(10)	D(10)
Conductor metal	Copper	Copper	Copper	Copper
Insulation	PVC	PVC	PVC	PVC

12/07/00

Type of conductor	Multicore	Multicore	Multicore	Multicore
Conductor arrangement				
Nb Ph conductor	2	2	2	1
CSA Ph conductor (mm <sup>2</sup> )	240.0	70.0	70.0	240.0
Nb N conductor	2	2	2	1
CSA N conductor (mm <sup>2</sup> )	240.0	70.0	70.0	240.0
Nb PE conductor		2	2	1
CSA PE conductor (mm <sup>2</sup> )		35.0	35.0	120.0

CABLE	C8	C9	C10	C11
Length (m)	20.0	100.0	150.0	10.0
Installation method	D(10)	D(10)	D(10)	C(1)
Conductor metal	Copper	Copper	Copper	Copper
Insulation	PVC	PVC	PVC	PVC
Type of conductor	Multicore	Multicore	Multicore	Multicore
Conductor arrangement				
Nb Ph conductor	1	1	2	1
CSA Ph conductor (mm <sup>2</sup> )	16.0	35.0	70.0	6.0
Nb N conductor	1	1	2	1
CSA N conductor (mm <sup>2</sup> )	16.0	35.0	70.0	6.0
Nb PE conductor	1	1	2	1
CSA PE conductor (mm <sup>2</sup> )	16.0	16.0	35.0	6.0

CABLE	C6			
Length (m)	20.0			
Installation method	D(10)			
Conductor metal	Copper			
Insulation	PVC			
Type of conductor	Multicore			
Conductor arrangement				
Nb Ph conductor	1			
CSA Ph conductor (mm <sup>2</sup> )	240.0			
Nb N conductor	1			
CSA N conductor (mm <sup>2</sup> )	240.0			
Nb PE conductor	1			
CSA PE conductor (mm <sup>2</sup> )	120.0			

TRANSFORMER	T1			
Power (kVA)	630			
Connection	Star-Delta			
Earthing arrangement	TT			
Distributed neutral	Yes			
Un Ph-Ph (V)	400			
System frequency (Hz)	50			
Short-circuit voltage (%)	4.00			