

LAMPIRAN

Lampiran A. Surat Balasan Tempat Penelitian.



UID JAWA TIMUR
UP3 SURABAYA UTARA

Nomor : 1491/STH.01.04/F04160000/2022
Lampiran : 2 Lembar
Sifat : Segera
Hal : Ijin Penelitian Tugas Akhir

01 Desember 2022

Kepada

Yth. Yth. Dekan Fakultas Teknik
Universitas 17 Agustus 1945
Surabaya
Jl. Semolowaru No. 45
Surabaya

Menunjuk surat Saudara No. 1915/K/FT/Akd/XI/2022 tanggal 10 November 2022 dan 1885/K/FT/Akd/XI/2022 tanggal 2 November 2022 perihal Penelitian Tugas Akhir, dengan ini diberitahukan bahwa kami memberikan ijin pelaksanaan Penelitian Tugas Akhir kepada mahasiswa tersebut di bawah ini :

No.	NAMA	N I M	No. HP
1.	M. Fauzi Thohir	1451900095	083164001721
2.	Aji Riyanto	1451900082	081222319102
3.	Bagas Hernanda J	1451900092	-

Untuk pelaksanaan Penelitian di PT PLN (Persero) Unit Pelaksana Pelayanan Pelanggan Surabaya Utara ULP Kenjeran dengan catatan bahan yang diperoleh **Bukan merupakan rahasia perusahaan.**

Pelaksanaan Penelitian tersebut dapat dilakukan pada 02 Januari 2023 s/d 28 Februari 2023, untuk itu mahasiswa dimohon menghubungi **Manager ULP Kenjeran bapak Yossy Irawan.**

Demikian disampaikan atas perhatian dan kerjasamanya diucapkan terima kasih.

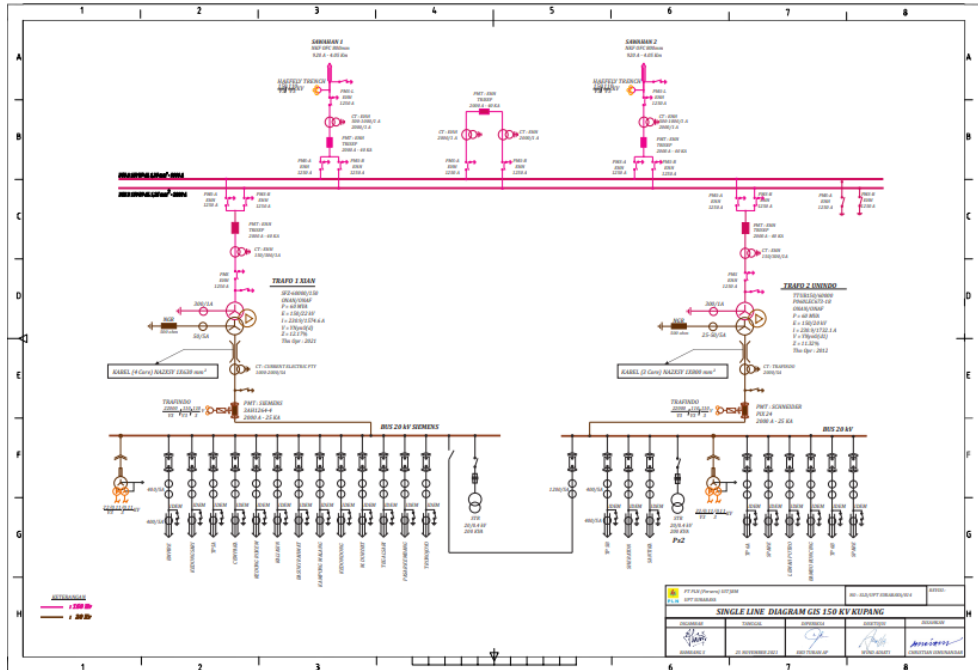
MANAGER UNIT PELAKSANA
PELAYANAN PELANGGAN SURABAYA
UTARA,



Tembusan:

- MUL ULP KENJERAN ULP KENJERAN PLN

Lampiran C.1. Single Line Diagram Gardu Induk Kupang



Lampiran C.2. Tabel Rekap Gangguan Penyulang di Gardu Induk Kupang Tahun 2022

TAHUN 2022														TOTAL	GGN
NAMA GI	PENYULANG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
0	Penyulang														
Kupang	Bambu Runcing	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Basuki Rahmat	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Cempaka	0	0	0	0	0	0	0	1	0	0	0	0	1	
Kupang	Empire	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Santika	0	0	0	0	0	1	0	0	0	0	0	0	1	
Kupang	Kaliasin	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Kampung Malang	0	0	0	1	0	0	0	0	0	0	0	0	1	
Kupang	Kedondong	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Kedung rukem	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Kedung Sari	0	0	0	0	0	1	0	0	0	0	0	0	1	
Kupang	Lemah Putro	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	M Duryat	1	1	0	0	0	1	0	0	0	0	0	0	3	
Kupang	Pasar Kembang	0	0	1	0	0	0	0	0	0	0	0	0	1	
Kupang	Sheraton	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Tegalsari	0	0	0	0	0	0	0	0	1	0	0	0	1	
Kupang	TP SA	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	TP 5B	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	TP 6A	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	TP 6B	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kupang	Trunojoyo	0	0	1	0	0	0	0	0	0	0	0	0	1	
		1	1	2	1	-	3	-	1	-	1	-	-	10	

Lampiran C.3 Tabel Hasil Perhitungan Arus Gangguan Hubung Singkat 3 Fasa.

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
0%	11603,464	11603,464	11603,464	11603,464	11603,464

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
1%	11423,100	11329,752	11371,704	11528,567	11538,673
2%	11247,155	11066,225	11147,244	11454,431	11474,453
3%	11075,527	10812,516	10929,864	11381,049	11410,797
4%	10908,113	10568,253	10719,341	11308,414	11347,701
5%	10744,809	10333,062	10515,449	11236,519	11285,161
6%	10585,509	10106,573	10317,966	11165,357	11223,173
7%	10430,109	9888,422	10126,667	11094,920	11161,731
8%	10278,505	9678,253	9941,335	11025,201	11100,830
9%	10130,593	9475,722	9761,754	10956,193	11040,467
10%	9986,272	9280,494	9587,714	10887,889	10980,637
11%	9845,440	9092,246	9419,010	10820,281	10921,334
12%	9707,999	8910,668	9255,445	10753,362	10862,553
13%	9573,853	8735,465	9096,826	10687,124	10804,292
14%	9442,905	8566,350	8942,966	10621,561	10746,543
15%	9315,064	8403,054	8793,686	10556,664	10689,304
16%	9190,240	8245,316	8648,814	10492,427	10632,568
17%	9068,343	8092,891	8508,182	10428,842	10576,332
18%	8949,288	7945,542	8371,631	10365,902	10520,590
19%	8832,992	7803,045	8239,006	10303,600	10465,338
20%	8719,373	7665,189	8110,160	10241,928	10410,571
21%	8608,352	7531,771	7984,951	10180,879	10356,285
22%	8499,854	7402,599	7863,244	10120,447	10302,474
23%	8393,804	7277,489	7744,907	10060,623	10249,134
24%	8290,130	7156,268	7629,816	10001,402	10196,261
25%	8188,762	7038,772	7517,852	9942,775	10143,849
26%	8089,633	6924,844	7408,899	9884,736	10091,895
27%	7992,678	6814,335	7302,849	9827,278	10040,392
28%	7897,833	6707,103	7199,595	9770,394	9989,338
29%	7805,037	6603,014	7099,037	9714,077	9938,728
30%	7714,230	6501,941	7001,079	9658,321	9888,556
31%	7625,357	6403,761	6905,629	9603,119	9838,819
32%	7538,360	6308,360	6812,598	9548,464	9789,512
33%	7453,187	6215,627	6721,901	9494,350	9740,631

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
34%	7369,786	6125,458	6633,457	9440,769	9692,171
35%	7288,107	6037,754	6547,189	9387,717	9644,127
36%	7208,100	5952,419	6463,021	9335,185	9596,497
37%	7129,720	5869,364	6380,884	9283,169	9549,275
38%	7052,920	5788,502	6300,708	9231,662	9502,456
39%	6977,657	5709,751	6222,427	9180,656	9456,038
40%	6903,890	5633,034	6145,979	9130,148	9410,015
41%	6831,575	5558,276	6071,304	9080,130	9364,384
42%	6760,675	5485,406	5998,343	9030,596	9319,141
43%	6691,150	5414,356	5927,041	8981,540	9274,281
44%	6622,964	5345,060	5857,345	8932,957	9229,800
45%	6556,081	5277,459	5789,204	8884,842	9185,694
46%	6490,465	5211,491	5722,568	8837,187	9141,960
47%	6426,084	5147,101	5657,390	8789,987	9098,594
48%	6362,905	5084,235	5593,625	8743,238	9055,591
49%	6300,896	5022,840	5531,230	8696,933	9012,948
50%	6240,028	4962,868	5470,162	8651,067	8970,661
51%	6180,269	4904,271	5410,381	8605,635	8928,726
52%	6121,593	4847,004	5351,848	8560,631	8887,139
53%	6063,971	4791,023	5294,527	8516,050	8845,898
54%	6007,377	4736,287	5238,381	8471,886	8804,997
55%	5951,784	4682,756	5183,375	8428,136	8764,434
56%	5897,168	4630,391	5129,477	8384,793	8724,205
57%	5843,504	4579,156	5076,655	8341,853	8684,307
58%	5790,770	4529,015	5024,877	8299,311	8644,735
59%	5738,940	4479,936	4974,115	8257,162	8605,487
60%	5687,995	4431,884	4924,338	8215,401	8566,559
61%	5637,912	4384,830	4875,521	8174,024	8527,948
62%	5588,671	4338,742	4827,636	8133,025	8489,650
63%	5540,251	4293,593	4780,657	8092,401	8451,662
64%	5492,633	4249,354	4734,559	8052,146	8413,980

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
65%	5445,797	4205,999	4689,320	8012,257	8376,602
66%	5399,726	4163,502	4644,915	7972,728	8339,525
67%	5354,402	4121,839	4601,323	7933,556	8302,744
68%	5309,807	4080,985	4558,522	7894,735	8266,258
69%	5265,924	4040,918	4516,491	7856,263	8230,062
70%	5222,738	4001,616	4475,210	7818,135	8194,154
71%	5180,232	3963,057	4434,659	7780,346	8158,531
72%	5138,390	3925,221	4394,821	7742,892	8123,190
73%	5097,198	3888,088	4355,676	7705,770	8088,127
74%	5056,642	3851,639	4317,207	7668,975	8053,341
75%	5016,707	3815,856	4279,398	7632,504	8018,827
76%	4977,380	3780,721	4242,231	7596,353	7984,584
77%	4938,647	3746,217	4205,691	7560,518	7950,608
78%	4900,495	3712,327	4169,763	7524,995	7916,896
79%	4862,912	3679,035	4134,432	7489,781	7883,446
80%	4825,885	3646,326	4099,682	7454,871	7850,256
81%	4789,402	3614,185	4065,501	7420,262	7817,321
82%	4753,453	3582,597	4031,874	7385,952	7784,641
83%	4718,025	3551,548	3998,789	7351,935	7752,211
84%	4683,108	3521,026	3966,233	7318,209	7720,030
85%	4648,692	3491,016	3934,193	7284,771	7688,095
86%	4614,764	3461,507	3902,658	7251,616	7656,403
87%	4581,317	3432,486	3871,615	7218,743	7624,952
88%	4548,339	3403,941	3841,054	7186,146	7593,739
89%	4515,821	3375,861	3810,964	7153,824	7562,762
90%	4483,754	3348,234	3781,334	7121,773	7532,019
91%	4452,129	3321,050	3752,154	7089,990	7501,506
92%	4420,937	3294,299	3723,413	7058,471	7471,223
93%	4390,169	3267,969	3695,103	7027,214	7441,166
94%	4359,817	3242,053	3667,213	6996,216	7411,333
95%	4329,872	3216,539	3639,735	6965,474	7381,721

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
96%	4300,328	3191,419	3612,659	6934,985	7352,330
97%	4271,175	3166,685	3585,978	6904,745	7323,155
98%	4242,407	3142,326	3559,681	6874,753	7294,196
99%	4214,016	3118,335	3533,763	6845,005	7265,449
100%	4185,994	3094,704	3508,213	6815,498	7236,914

Lampiran C.4. Tabel Hasil Perhitungan Arus Gangguan Hubung Singkat Antar Fasa.

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
0%	5801,732	5801,732	5801,732	5801,732	5801,732
1%	5711,550	5664,876	5685,852	5764,283	5769,337
2%	5623,578	5533,113	5573,622	5727,216	5737,226
3%	5537,764	5406,258	5464,932	5690,525	5705,398
4%	5454,057	5284,126	5359,670	5654,207	5673,851
5%	5372,404	5166,531	5257,725	5618,260	5642,581
6%	5292,755	5053,286	5158,983	5582,679	5611,586
7%	5215,055	4944,211	5063,334	5547,460	5580,865
8%	5139,253	4839,127	4970,667	5512,601	5550,415
9%	5065,297	4737,861	4880,877	5478,097	5520,234
10%	4993,136	4640,247	4793,857	5443,945	5490,318
11%	4922,720	4546,123	4709,505	5410,141	5460,667
12%	4854,000	4455,334	4627,723	5376,681	5431,277
13%	4786,926	4367,732	4548,413	5343,562	5402,146
14%	4721,453	4283,175	4471,483	5310,780	5373,272
15%	4657,532	4201,527	4396,843	5278,332	5344,652
16%	4595,120	4122,658	4324,407	5246,214	5316,284
17%	4534,171	4046,445	4254,091	5214,421	5288,166
18%	4474,644	3972,771	4185,815	5182,951	5260,295
19%	4416,496	3901,523	4119,503	5151,800	5232,669
20%	4359,686	3832,595	4055,080	5120,964	5205,286
21%	4304,176	3765,886	3992,476	5090,440	5178,142

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
22%	4249,927	3701,299	3931,622	5060,223	5151,237
23%	4196,902	3638,744	3872,454	5030,312	5124,567
24%	4145,065	3578,134	3814,908	5000,701	5098,130
25%	4094,381	3519,386	3758,926	4971,387	5071,925
26%	4044,816	3462,422	3704,450	4942,368	5045,947
27%	3996,339	3407,167	3651,424	4913,639	5020,196
28%	3948,916	3353,551	3599,797	4885,197	4994,669
29%	3902,518	3301,507	3549,519	4857,039	4969,364
30%	3857,115	3250,970	3500,540	4829,161	4944,278
31%	3812,678	3201,881	3452,814	4801,559	4919,410
32%	3769,180	3154,180	3406,299	4774,232	4894,756
33%	3726,594	3107,814	3360,950	4747,175	4870,315
34%	3684,893	3062,729	3316,728	4720,385	4846,085
35%	3644,053	3018,877	3273,594	4693,858	4822,064
36%	3604,050	2976,210	3231,511	4667,593	4798,248
37%	3564,860	2934,682	3190,442	4641,585	4774,637
38%	3526,460	2894,251	3150,354	4615,831	4751,228
39%	3488,829	2854,876	3111,214	4590,328	4728,019
40%	3451,945	2816,517	3072,990	4565,074	4705,008
41%	3415,788	2779,138	3035,652	4540,065	4682,192
42%	3380,338	2742,703	2999,172	4515,298	4659,570
43%	3345,575	2707,178	2963,521	4490,770	4637,140
44%	3311,482	2672,530	2928,673	4466,479	4614,900
45%	3278,040	2638,729	2894,602	4442,421	4592,847
46%	3245,233	2605,745	2861,284	4418,593	4570,980
47%	3213,042	2573,550	2828,695	4394,994	4549,297
48%	3181,453	2542,117	2796,813	4371,619	4527,795
49%	3150,448	2511,420	2765,615	4348,467	4506,474
50%	3120,014	2481,434	2735,081	4325,534	4485,330
51%	3090,135	2452,136	2705,190	4302,817	4464,363
52%	3060,797	2423,502	2675,924	4280,315	4443,570
53%	3031,986	2395,512	2647,263	4258,025	4422,949

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedongdong
54%	3003,688	2368,144	2619,190	4235,943	4402,499
55%	2975,892	2341,378	2591,688	4214,068	4382,217
56%	2948,584	2315,195	2564,739	4192,397	4362,103
57%	2921,752	2289,578	2538,327	4170,927	4342,153
58%	2895,385	2264,508	2512,439	4149,656	4322,368
59%	2869,470	2239,968	2487,057	4128,581	4302,744
60%	2843,998	2215,942	2462,169	4107,701	4283,280
61%	2818,956	2192,415	2437,760	4087,012	4263,974
62%	2794,335	2169,371	2413,818	4066,513	4244,825
63%	2770,125	2146,796	2390,328	4046,200	4225,831
64%	2746,316	2124,677	2367,280	4026,073	4206,990
65%	2722,899	2102,999	2344,660	4006,128	4188,301
66%	2699,863	2081,751	2322,458	3986,364	4169,762
67%	2677,201	2060,919	2300,662	3966,778	4151,372
68%	2654,904	2040,493	2279,261	3947,368	4133,129
69%	2632,962	2020,459	2258,245	3928,132	4115,031
70%	2611,369	2000,808	2237,605	3909,067	4097,077
71%	2590,116	1981,528	2217,330	3890,173	4079,266
72%	2569,195	1962,610	2197,410	3871,446	4061,595
73%	2548,599	1944,044	2177,838	3852,885	4044,064
74%	2528,321	1925,820	2158,604	3834,488	4026,670
75%	2508,354	1907,928	2139,699	3816,252	4009,414
76%	2488,690	1890,361	2121,116	3798,177	3992,292
77%	2469,323	1873,108	2102,846	3780,259	3975,304
78%	2450,247	1856,163	2084,882	3762,498	3958,448
79%	2431,456	1839,517	2067,216	3744,890	3941,723
80%	2412,942	1823,163	2049,841	3727,435	3925,128
81%	2394,701	1807,092	2032,751	3710,131	3908,661
82%	2376,727	1791,298	2015,937	3692,976	3892,320
83%	2359,013	1775,774	1999,395	3675,968	3876,106
84%	2341,554	1760,513	1983,117	3659,105	3860,015

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
85%	2324,346	1745,508	1967,097	3642,385	3844,047
86%	2307,382	1730,754	1951,329	3625,808	3828,201
87%	2290,658	1716,243	1935,808	3609,371	3812,476
88%	2274,169	1701,970	1920,527	3593,073	3796,869
89%	2257,910	1687,930	1905,482	3576,912	3781,381
90%	2241,877	1674,117	1890,667	3560,886	3766,009
91%	2226,064	1660,525	1876,077	3544,995	3750,753
92%	2210,468	1647,149	1861,707	3529,236	3735,611
93%	2195,084	1633,985	1847,551	3513,607	3720,583
94%	2179,908	1621,026	1833,607	3498,108	3705,666
95%	2164,936	1608,270	1819,867	3482,737	3690,861
96%	2150,164	1595,710	1806,330	3467,492	3676,165
97%	2135,587	1583,342	1792,989	3452,373	3661,578
98%	2121,203	1571,163	1779,841	3437,376	3647,098
99%	2107,008	1559,167	1766,881	3422,502	3632,725
100%	2092,997	1547,352	1754,107	3407,749	3618,457

Lampiran C.5. Tabel Hasil Perhitungan Arus Gangguan Hubung Singkat Satu Fasa Ke tanah.

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
0%	25,345	25,345	25,345	25,345	25,345
1%	25,344	25,344	25,344	25,345	25,345
2%	25,344	25,343	25,343	25,345	25,345
3%	25,343	25,341	25,342	25,344	25,344
4%	25,342	25,340	25,341	25,344	25,344
5%	25,341	25,338	25,339	25,344	25,344
6%	25,340	25,337	25,338	25,343	25,343
7%	25,339	25,336	25,337	25,343	25,343
8%	25,338	25,334	25,336	25,342	25,343
9%	25,337	25,333	25,335	25,342	25,342

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
10%	25,336	25,331	25,333	25,342	25,342
11%	25,335	25,330	25,332	25,341	25,342
12%	25,334	25,328	25,331	25,341	25,341
13%	25,333	25,327	25,330	25,340	25,341
14%	25,332	25,325	25,329	25,340	25,341
15%	25,331	25,324	25,327	25,340	25,340
16%	25,331	25,322	25,326	25,339	25,340
17%	25,330	25,321	25,325	25,339	25,340
18%	25,329	25,320	25,324	25,339	25,340
19%	25,328	25,318	25,322	25,338	25,339
20%	25,327	25,317	25,321	25,338	25,339
21%	25,326	25,315	25,320	25,337	25,339
22%	25,325	25,314	25,319	25,337	25,338
23%	25,324	25,312	25,317	25,337	25,338
24%	25,323	25,311	25,316	25,336	25,338
25%	25,322	25,309	25,315	25,336	25,337
26%	25,321	25,308	25,314	25,336	25,337
27%	25,320	25,306	25,312	25,335	25,337
28%	25,319	25,305	25,311	25,335	25,336
29%	25,318	25,303	25,310	25,334	25,336
30%	25,317	25,302	25,309	25,334	25,336
31%	25,316	25,300	25,307	25,334	25,335
32%	25,315	25,299	25,306	25,333	25,335
33%	25,314	25,297	25,305	25,333	25,335
34%	25,313	25,296	25,304	25,332	25,334
35%	25,312	25,294	25,302	25,332	25,334
36%	25,311	25,293	25,301	25,332	25,334
37%	25,310	25,291	25,300	25,331	25,333
38%	25,309	25,290	25,299	25,331	25,333
39%	25,308	25,288	25,297	25,330	25,333
40%	25,307	25,287	25,296	25,330	25,332
41%	25,306	25,285	25,295	25,330	25,332

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
42%	25,305	25,284	25,293	25,329	25,332
43%	25,304	25,282	25,292	25,329	25,331
44%	25,303	25,281	25,291	25,329	25,331
45%	25,302	25,279	25,290	25,328	25,330
46%	25,301	25,277	25,288	25,328	25,330
47%	25,300	25,276	25,287	25,327	25,330
48%	25,300	25,274	25,286	25,327	25,329
49%	25,299	25,273	25,285	25,327	25,329
50%	25,298	25,271	25,283	25,326	25,329
51%	25,297	25,270	25,282	25,326	25,328
52%	25,296	25,268	25,281	25,325	25,328
53%	25,295	25,267	25,279	25,325	25,328
54%	25,294	25,265	25,278	25,325	25,327
55%	25,293	25,264	25,277	25,324	25,327
56%	25,292	25,262	25,276	25,324	25,327
57%	25,291	25,261	25,274	25,323	25,326
58%	25,290	25,259	25,273	25,323	25,326
59%	25,289	25,258	25,272	25,323	25,326
60%	25,288	25,256	25,270	25,322	25,325
61%	25,287	25,255	25,269	25,322	25,325
62%	25,286	25,253	25,268	25,321	25,325
63%	25,285	25,252	25,267	25,321	25,324
64%	25,284	25,250	25,265	25,321	25,324
65%	25,283	25,248	25,264	25,320	25,324
66%	25,282	25,247	25,263	25,320	25,323
67%	25,281	25,245	25,261	25,319	25,323
68%	25,280	25,244	25,260	25,319	25,323
69%	25,279	25,242	25,259	25,319	25,322
70%	25,278	25,241	25,258	25,318	25,322
71%	25,277	25,239	25,256	25,318	25,322
72%	25,276	25,238	25,255	25,317	25,321

Panjang penyulang	Penyulang				
	M Duryat	Trunojoyo	Pasar Kembang	Tegalsari	Kedondong
73%	25,275	25,236	25,254	25,317	25,321
74%	25,274	25,235	25,252	25,317	25,321
75%	25,273	25,233	25,251	25,316	25,320
76%	25,272	25,232	25,250	25,316	25,320
77%	25,271	25,230	25,248	25,315	25,320
78%	25,270	25,229	25,247	25,315	25,319
79%	25,269	25,227	25,246	25,315	25,319
80%	25,268	25,225	25,245	25,314	25,319
81%	25,267	25,224	25,243	25,314	25,318
82%	25,266	25,222	25,242	25,313	25,318
83%	25,265	25,221	25,241	25,313	25,318
84%	25,264	25,219	25,239	25,313	25,317
85%	25,263	25,218	25,238	25,312	25,317
86%	25,262	25,216	25,237	25,312	25,316
87%	25,261	25,215	25,236	25,311	25,316
88%	25,260	25,213	25,234	25,311	25,316
89%	25,259	25,212	25,233	25,311	25,315
90%	25,258	25,210	25,232	25,310	25,315
91%	25,257	25,209	25,230	25,310	25,315
92%	25,256	25,207	25,229	25,309	25,314
93%	25,255	25,205	25,228	25,309	25,314
94%	25,254	25,204	25,226	25,309	25,314
95%	25,253	25,202	25,225	25,308	25,313
96%	25,252	25,201	25,224	25,308	25,313
97%	25,251	25,199	25,223	25,307	25,313
98%	25,250	25,198	25,221	25,307	25,312
99%	25,249	25,196	25,220	25,307	25,312
100%	25,248	25,195	25,219	25,306	25,312

Lampiran C.6. Tabel Setelan Waktu OCR Sesuai Jarak Gangguan Penyulang M Duryat.

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
0%	0	11603,46	Instant	5801,732	Instant
1%	0,05208	11423,10	Instant	5711,55	Instant
2%	0,10416	11247,16	Instant	5623,578	Instant
3%	0,15624	11075,53	Instant	5537,764	Instant
4%	0,20832	10908,11	Instant	5454,057	Instant
5%	0,2604	10744,81	Instant	5372,404	Instant
6%	0,31248	10585,51	Instant	5292,755	Instant
7%	0,36456	10430,11	Instant	5215,055	Instant
8%	0,41664	10278,51	Instant	5139,253	Instant
9%	0,46872	10130,59	Instant	5065,297	Instant
10%	0,5208	9986,27	Instant	4993,136	Instant
11%	0,57288	9845,44	Instant	4922,72	Instant
12%	0,62496	9708,00	Instant	4854	Instant
13%	0,67704	9573,85	Instant	4786,926	Instant
14%	0,72912	9442,91	Instant	4721,453	Instant
15%	0,7812	9315,06	Instant	4657,532	Instant
16%	0,83328	9190,24	Instant	4595,12	Instant
17%	0,88536	9068,34	Instant	4534,171	Instant
18%	0,93744	8949,29	Instant	4474,644	Instant
19%	0,98952	8832,99	Instant	4416,496	Instant
20%	1,0416	8719,37	Instant	4359,686	Instant
21%	1,09368	8608,35	Instant	4304,176	Instant
22%	1,14576	8499,85	Instant	4249,927	Instant
23%	1,19784	8393,80	Instant	4196,902	Instant
24%	1,24992	8290,13	Instant	4145,065	Instant
25%	1,302	8188,76	Instant	4094,381	Instant
26%	1,35408	8089,63	Instant	4044,816	Instant
27%	1,40616	7992,68	Instant	3996,339	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
28%	1,45824	7897,83	Instant	3948,916	Instant
29%	1,51032	7805,04	Instant	3902,518	Instant
30%	1,5624	7714,23	Instant	3857,115	Instant
31%	1,61448	7625,36	Instant	3812,678	Instant
32%	1,66656	7538,36	Instant	3769,18	Instant
33%	1,71864	7453,19	Instant	3726,594	Instant
34%	1,77072	7369,79	Instant	3684,893	Instant
35%	1,8228	7288,11	Instant	3644,053	Instant
36%	1,87488	7208,10	Instant	3604,05	Instant
37%	1,92696	7129,72	Instant	3564,86	Instant
38%	1,97904	7052,92	Instant	3526,46	Instant
39%	2,03112	6977,66	Instant	3488,829	Instant
40%	2,0832	6903,89	Instant	3451,945	Instant
41%	2,13528	6831,58	Instant	3415,788	Instant
42%	2,18736	6760,68	Instant	3380,338	Instant
43%	2,23944	6691,15	Instant	3345,575	Instant
44%	2,29152	6622,96	Instant	3311,482	Instant
45%	2,3436	6556,08	Instant	3278,04	Instant
46%	2,39568	6490,47	Instant	3245,233	Instant
47%	2,44776	6426,08	Instant	3213,042	Instant
48%	2,49984	6362,91	Instant	3181,453	Instant
49%	2,55192	6300,90	Instant	3150,448	Instant
50%	2,604	6240,03	Instant	3120,014	0,429086
51%	2,65608	6180,27	Instant	3090,135	0,430425
52%	2,70816	6121,59	Instant	3060,797	0,431761
53%	2,76024	6063,97	Instant	3031,986	0,433093
54%	2,81232	6007,38	Instant	3003,688	0,434421
55%	2,8644	5951,78	Instant	2975,892	0,435746
56%	2,91648	5897,17	Instant	2948,584	0,437067

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
57%	2,96856	5843,50	Instant	2921,752	0,438386
58%	3,02064	5790,77	Instant	2895,385	0,4397
59%	3,07272	5738,94	Instant	2869,47	0,441012
60%	3,1248	5688,00	Instant	2843,998	0,44232
61%	3,17688	5637,91	Instant	2818,956	0,443625
62%	3,22896	5588,67	Instant	2794,335	0,444927
63%	3,28104	5540,25	Instant	2770,125	0,446226
64%	3,33312	5492,63	Instant	2746,316	0,447522
65%	3,3852	5445,80	Instant	2722,899	0,448814
66%	3,43728	5399,73	Instant	2699,863	0,450104
67%	3,48936	5354,40	Instant	2677,201	0,451391
68%	3,54144	5309,81	Instant	2654,904	0,452674
69%	3,59352	5265,92	Instant	2632,962	0,453955
70%	3,6456	5222,74	Instant	2611,369	0,455233
71%	3,69768	5180,23	Instant	2590,116	0,456508
72%	3,74976	5138,39	Instant	2569,195	0,45778
73%	3,80184	5097,20	Instant	2548,599	0,459049
74%	3,85392	5056,64	Instant	2528,321	0,460316
75%	3,906	5016,71	Instant	2508,354	0,46158
76%	3,95808	4977,38	Instant	2488,69	0,462841
77%	4,01016	4938,65	Instant	2469,323	0,4641
78%	4,06224	4900,49	Instant	2450,247	0,465356
79%	4,11432	4862,91	Instant	2431,456	0,466609
80%	4,1664	4825,88	Instant	2412,942	0,46786
81%	4,21848	4789,40	Instant	2394,701	0,469109
82%	4,27056	4753,45	Instant	2376,727	0,470355
83%	4,32264	4718,03	Instant	2359,013	0,471598
84%	4,37472	4683,11	Instant	2341,554	0,472839
85%	4,4268	4648,69	Instant	2324,346	0,474078

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
86%	4,47888	4614,76	Instant	2307,382	0,475314
87%	4,53096	4581,32	Instant	2290,658	0,476548
88%	4,58304	4548,34	Instant	2274,169	0,47778
89%	4,63512	4515,82	Instant	2257,91	0,479009
90%	4,6872	4483,75	Instant	2241,877	0,480236
91%	4,73928	4452,13	Instant	2226,064	0,481461
92%	4,79136	4420,94	Instant	2210,468	0,482684
93%	4,84344	4390,17	Instant	2195,084	0,483905
94%	4,89552	4359,82	Instant	2179,908	0,485123
95%	4,9476	4329,87	Instant	2164,936	0,48634
96%	4,99968	4300,33	Instant	2150,164	0,487554
97%	5,05176	4271,17	Instant	2135,587	0,488766
98%	5,10384	4242,41	Instant	2121,203	0,489976
99%	5,15592	4214,02	Instant	2107,008	0,491185
100%	5,208	4185,99	Instant	2092,997	0,492391

Lampiran C.7. Tabel Setelan Waktu OCR Sesuai Jarak Gangguan Penyulang Trunojoyo.

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
0%	0	11603,46	Instant	5801,732	Instant
1%	0,07955	11329,75	Instant	5664,876	Instant
2%	0,1591	11066,23	Instant	5533,113	Instant
3%	0,23865	10812,52	Instant	5406,258	Instant
4%	0,3182	10568,25	Instant	5284,126	Instant
5%	0,39775	10333,06	Instant	5166,531	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
6%	0,4773	10106,57	Instant	5053,286	Instant
7%	0,55685	9888,422	Instant	4944,211	Instant
8%	0,6364	9678,253	Instant	4839,127	Instant
9%	0,71595	9475,722	Instant	4737,861	Instant
10%	0,7955	9280,494	Instant	4640,247	Instant
11%	0,87505	9092,246	Instant	4546,123	Instant
12%	0,9546	8910,668	Instant	4455,334	Instant
13%	1,03415	8735,465	Instant	4367,732	Instant
14%	1,1137	8566,35	Instant	4283,175	Instant
15%	1,19325	8403,054	Instant	4201,527	Instant
16%	1,2728	8245,316	Instant	4122,658	Instant
17%	1,35235	8092,891	Instant	4046,445	Instant
18%	1,4319	7945,542	Instant	3972,771	Instant
19%	1,51145	7803,045	Instant	3901,523	Instant
20%	1,591	7665,189	Instant	3832,595	Instant
21%	1,67055	7531,771	Instant	3765,886	Instant
22%	1,7501	7402,599	Instant	3701,299	Instant
23%	1,82965	7277,489	Instant	3638,744	Instant
24%	1,9092	7156,268	Instant	3578,134	Instant
25%	1,98875	7038,772	Instant	3519,386	Instant
26%	2,0683	6924,844	Instant	3462,422	Instant
27%	2,14785	6814,335	Instant	3407,167	Instant
28%	2,2274	6707,103	Instant	3353,551	Instant
29%	2,30695	6603,014	Instant	3301,507	Instant
30%	2,3865	6501,941	Instant	3250,97	Instant
31%	2,46605	6403,761	Instant	3201,881	Instant
32%	2,5456	6308,36	Instant	3154,18	Instant
33%	2,62515	6215,627	Instant	3107,814	0,433747
34%	2,7047	6125,458	Instant	3062,729	0,435874
35%	2,78425	6037,754	Instant	3018,877	0,437993
36%	2,8638	5952,419	Instant	2976,21	0,440105

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
37%	2,94335	5869,364	Instant	2934,682	0,442208
38%	3,0229	5788,502	Instant	2894,251	0,444304
39%	3,10245	5709,751	Instant	2854,876	0,446393
40%	3,182	5633,034	Instant	2816,517	0,448474
41%	3,26155	5558,276	Instant	2779,138	0,450548
42%	3,3411	5485,406	Instant	2742,703	0,452616
43%	3,42065	5414,356	Instant	2707,178	0,454676
44%	3,5002	5345,06	Instant	2672,53	0,45673
45%	3,57975	5277,459	Instant	2638,729	0,458777
46%	3,6593	5211,491	Instant	2605,745	0,460817
47%	3,73885	5147,101	Instant	2573,55	0,462852
48%	3,8184	5084,235	Instant	2542,117	0,46488
49%	3,89795	5022,84	Instant	2511,42	0,466902
50%	3,9775	4962,868	Instant	2481,434	0,468918
51%	4,05705	4904,271	Instant	2452,136	0,470928
52%	4,1366	4847,004	Instant	2423,502	0,472933
53%	4,21615	4791,023	Instant	2395,512	0,474932
54%	4,2957	4736,287	Instant	2368,144	0,476925
55%	4,37525	4682,756	Instant	2341,378	0,478913
56%	4,4548	4630,391	Instant	2315,195	0,480896
57%	4,53435	4579,156	Instant	2289,578	0,482873
58%	4,6139	4529,015	Instant	2264,508	0,484846
59%	4,69345	4479,936	Instant	2239,968	0,486813
60%	4,773	4431,884	Instant	2215,942	0,488776
61%	4,85255	4384,83	Instant	2192,415	0,490734
62%	4,9321	4338,742	Instant	2169,371	0,492687
63%	5,01165	4293,593	Instant	2146,796	0,494635
64%	5,0912	4249,354	Instant	2124,677	0,49658
65%	5,17075	4205,999	Instant	2102,999	0,498519

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
66%	5,2503	4163,502	Instant	2081,751	0,500455
67%	5,32985	4121,839	Instant	2060,919	0,502386
68%	5,4094	4080,985	Instant	2040,493	0,504313
69%	5,48895	4040,918	Instant	2020,459	0,506236
70%	5,5685	4001,616	Instant	2000,808	0,508155
71%	5,64805	3963,057	Instant	1981,528	0,510071
72%	5,7276	3925,221	Instant	1962,61	0,511982
73%	5,80715	3888,088	Instant	1944,044	0,51389
74%	5,8867	3851,639	Instant	1925,82	0,515794
75%	5,96625	3815,856	Instant	1907,928	0,517695
76%	6,0458	3780,721	Instant	1890,361	0,519592
77%	6,12535	3746,217	Instant	1873,108	0,521486
78%	6,2049	3712,327	Instant	1856,163	0,523376
79%	6,28445	3679,035	Instant	1839,517	0,525263
80%	6,364	3646,326	Instant	1823,163	0,527147
81%	6,44355	3614,185	Instant	1807,092	0,529028
82%	6,5231	3582,597	Instant	1791,298	0,530906
83%	6,60265	3551,548	Instant	1775,774	0,53278
84%	6,6822	3521,026	Instant	1760,513	0,534652
85%	6,76175	3491,016	Instant	1745,508	0,536521
86%	6,8413	3461,507	Instant	1730,754	0,538388
87%	6,92085	3432,486	Instant	1716,243	0,540251
88%	7,0004	3403,941	Instant	1701,97	0,542112
89%	7,07995	3375,861	Instant	1687,93	0,54397
90%	7,1595	3348,234	Instant	1674,117	0,545826
91%	7,23905	3321,05	Instant	1660,525	0,547679
92%	7,3186	3294,299	Instant	1647,149	0,54953
93%	7,39815	3267,969	Instant	1633,985	0,551378
94%	7,4777	3242,053	Instant	1621,026	0,553224

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
95%	7,55725	3216,539	Instant	1608,27	0,555068
96%	7,6368	3191,419	Instant	1595,71	0,556909
97%	7,71635	3166,685	Instant	1583,342	0,558749
98%	7,7959	3142,326	0,432153	1571,163	0,560586
99%	7,87545	3118,335	0,433258	1559,167	0,562421
100%	7,955	3094,704	0,434361	1547,352	0,564254

Lampiran C.8. Tabel Setelan Waktu OCR Sesuai Jarak Gangguan Penyulang Pasar Kembang.

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
0%	0	11603,46352	Instant	5801,731761	Instant
1%	0,06716	11371,70427	Instant	5685,852134	Instant
2%	0,13432	11147,24429	Instant	5573,622143	Instant
3%	0,20148	10929,86423	Instant	5464,932117	Instant
4%	0,26864	10719,34088	Instant	5359,670442	Instant
5%	0,3358	10515,44949	Instant	5257,724745	Instant
6%	0,40296	10317,96573	Instant	5158,982863	Instant
7%	0,47012	10126,66724	Instant	5063,333619	Instant
8%	0,53728	9941,334888	Instant	4970,667444	Instant
9%	0,60444	9761,753726	Instant	4880,876863	Instant
10%	0,6716	9587,713742	Instant	4793,856871	Instant
11%	0,73876	9419,010436	Instant	4709,505218	Instant
12%	0,80592	9255,445222	Instant	4627,722611	Instant
13%	0,87308	9096,82572	Instant	4548,41286	Instant
14%	0,94024	8942,965933	Instant	4471,482967	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
15%	1,0074	8793,68634	Instant	4396,84317	Instant
16%	1,07456	8648,81392	Instant	4324,40696	Instant
17%	1,14172	8508,182123	Instant	4254,091061	Instant
18%	1,20888	8371,630792	Instant	4185,815396	Instant
19%	1,27604	8239,006052	Instant	4119,503026	Instant
20%	1,3432	8110,160172	Instant	4055,080086	Instant
21%	1,41036	7984,951404	Instant	3992,475702	Instant
22%	1,47752	7863,243813	Instant	3931,621906	Instant
23%	1,54468	7744,907085	Instant	3872,453542	Instant
24%	1,61184	7629,816342	Instant	3814,908171	Instant
25%	1,679	7517,85194	Instant	3758,92597	Instant
26%	1,74616	7408,899276	Instant	3704,449638	Instant
27%	1,81332	7302,848587	Instant	3651,424293	Instant
28%	1,88048	7199,594753	Instant	3599,797377	Instant
29%	1,94764	7099,037111	Instant	3549,518555	Instant
30%	2,0148	7001,079258	Instant	3500,539629	Instant
31%	2,08196	6905,628875	Instant	3452,814437	Instant
32%	2,14912	6812,597543	Instant	3406,298771	Instant
33%	2,21628	6721,900574	Instant	3360,950287	Instant
34%	2,28344	6633,456843	Instant	3316,728421	Instant
35%	2,3506	6547,188627	Instant	3273,594314	Instant
36%	2,41776	6463,021454	Instant	3231,510727	Instant
37%	2,48492	6380,883952	Instant	3190,441976	Instant
38%	2,55208	6300,707705	Instant	3150,353853	Instant
39%	2,61924	6222,427127	Instant	3111,213563	0,423159
40%	2,6864	6145,97932	Instant	3072,98966	0,424775
41%	2,75356	6071,303961	Instant	3035,651981	0,426385
42%	2,82072	5998,343177	Instant	2999,171588	0,427989
43%	2,88788	5927,041434	Instant	2963,520717	0,429587

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
44%	2,95504	5857,345433	Instant	2928,672717	0,431179
45%	3,0222	5789,204004	Instant	2894,602002	0,432765
46%	3,08936	5722,568008	Instant	2861,284004	0,434346
47%	3,15652	5657,390248	Instant	2828,695124	0,43592
48%	3,22368	5593,625379	Instant	2796,81269	0,43749
49%	3,29084	5531,229823	Instant	2765,614912	0,439053
50%	3,358	5470,161691	Instant	2735,080846	0,440612
51%	3,42516	5410,380706	Instant	2705,190353	0,442165
52%	3,49232	5351,848129	Instant	2675,924064	0,443712
53%	3,55948	5294,526694	Instant	2647,263347	0,445255
54%	3,62664	5238,380541	Instant	2619,19027	0,446793
55%	3,6938	5183,375152	Instant	2591,687576	0,448325
56%	3,76096	5129,477296	Instant	2564,738648	0,449853
57%	3,82812	5076,654968	Instant	2538,327484	0,451376
58%	3,89528	5024,877337	Instant	2512,438669	0,452894
59%	3,96244	4974,114698	Instant	2487,057349	0,454407
60%	4,0296	4924,338421	Instant	2462,169211	0,455916
61%	4,09676	4875,520903	Instant	2437,760452	0,45742
62%	4,16392	4827,635529	Instant	2413,817765	0,458919
63%	4,23108	4780,656626	Instant	2390,328313	0,460414
64%	4,29824	4734,559424	Instant	2367,279712	0,461905
65%	4,3654	4689,32002	Instant	2344,66001	0,463392
66%	4,43256	4644,91534	Instant	2322,45767	0,464874
67%	4,49972	4601,323107	Instant	2300,661553	0,466352
68%	4,56688	4558,521804	Instant	2279,260902	0,467826
69%	4,63404	4516,490646	Instant	2258,245323	0,469296
70%	4,7012	4475,209551	Instant	2237,604776	0,470762
71%	4,76836	4434,659109	Instant	2217,329555	0,472224
72%	4,83552	4394,820556	Instant	2197,410278	0,473682

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
73%	4,90268	4355,675748	Instant	2177,837874	0,475137
74%	4,96984	4317,207137	Instant	2158,603568	0,476587
75%	5,037	4279,397746	Instant	2139,698873	0,478034
76%	5,10416	4242,231151	Instant	2121,115575	0,479478
77%	5,17132	4205,691451	Instant	2102,845726	0,480917
78%	5,23848	4169,763258	Instant	2084,881629	0,482354
79%	5,30564	4134,431667	Instant	2067,215833	0,483786
80%	5,3728	4099,682246	Instant	2049,841123	0,485216
81%	5,43996	4065,501013	Instant	2032,750507	0,486642
82%	5,50712	4031,874421	Instant	2015,937211	0,488064
83%	5,57428	3998,789341	Instant	1999,394671	0,489484
84%	5,64144	3966,233047	Instant	1983,116523	0,4909
85%	5,7086	3934,193199	Instant	1967,096599	0,492313
86%	5,77576	3902,657831	Instant	1951,328916	0,493722
87%	5,84292	3871,615338	Instant	1935,807669	0,495129
88%	5,91008	3841,054458	Instant	1920,527229	0,496533
89%	5,97724	3810,964268	Instant	1905,482134	0,497933
90%	6,0444	3781,334162	Instant	1890,667081	0,499331
91%	6,11156	3752,153846	Instant	1876,076923	0,500726
92%	6,17872	3723,413326	Instant	1861,706663	0,502118
93%	6,24588	3695,102897	Instant	1847,551448	0,503507
94%	6,31304	3667,213131	Instant	1833,606565	0,504893
95%	6,3802	3639,734869	Instant	1819,867434	0,506277
96%	6,44736	3612,659213	Instant	1806,329607	0,507658
97%	6,51452	3585,977515	Instant	1792,988757	0,509036
98%	6,58168	3559,681367	Instant	1779,840683	0,510412
99%	6,64884	3533,762597	Instant	1766,881299	0,511785
100%	6,716	3508,213259	Instant	1754,106629	0,513155

Lampiran C.9. Tabel Setelan Waktu OCR Sesuai Jarak Gangguan Penyulang Tegalsari.

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
0%	0	11603,46	Instant	5801,732	Instant
1%	0,02147	11528,57	Instant	5764,283	Instant
2%	0,04294	11454,43	Instant	5727,216	Instant
3%	0,06441	11381,05	Instant	5690,525	Instant
4%	0,08588	11308,41	Instant	5654,207	Instant
5%	0,10735	11236,52	Instant	5618,26	Instant
6%	0,12882	11165,36	Instant	5582,679	Instant
7%	0,15029	11094,92	Instant	5547,46	Instant
8%	0,17176	11025,2	Instant	5512,601	Instant
9%	0,19323	10956,19	Instant	5478,097	Instant
10%	0,2147	10887,89	Instant	5443,945	Instant
11%	0,23617	10820,28	Instant	5410,141	Instant
12%	0,25764	10753,36	Instant	5376,681	Instant
13%	0,27911	10687,12	Instant	5343,562	Instant
14%	0,30058	10621,56	Instant	5310,78	Instant
15%	0,32205	10556,66	Instant	5278,332	Instant
16%	0,34352	10492,43	Instant	5246,214	Instant
17%	0,36499	10428,84	Instant	5214,421	Instant
18%	0,38646	10365,9	Instant	5182,951	Instant
19%	0,40793	10303,6	Instant	5151,8	Instant
20%	0,4294	10241,93	Instant	5120,964	Instant
21%	0,45087	10180,88	Instant	5090,44	Instant
22%	0,47234	10120,45	Instant	5060,223	Instant
23%	0,49381	10060,62	Instant	5030,312	Instant
24%	0,51528	10001,4	Instant	5000,701	Instant
25%	0,53675	9942,775	Instant	4971,387	Instant
26%	0,55822	9884,736	Instant	4942,368	Instant
27%	0,57969	9827,278	Instant	4913,639	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
28%	0,60116	9770,394	Instant	4885,197	Instant
29%	0,62263	9714,077	Instant	4857,039	Instant
30%	0,64441	9658,321	Instant	4829,161	Instant
31%	0,66557	9603,119	Instant	4801,559	Instant
32%	0,68704	9548,464	Instant	4774,232	Instant
33%	0,70851	9494,35	Instant	4747,175	Instant
34%	0,72998	9440,769	Instant	4720,385	Instant
35%	0,75145	9387,717	Instant	4693,858	Instant
36%	0,77292	9335,185	Instant	4667,593	Instant
37%	0,79439	9283,169	Instant	4641,585	Instant
38%	0,81586	9231,662	Instant	4615,831	Instant
39%	0,83733	9180,656	Instant	4590,328	Instant
40%	0,8588	9130,148	Instant	4565,074	Instant
41%	0,88027	9080,13	Instant	4540,065	Instant
42%	0,90174	9030,596	Instant	4515,298	Instant
43%	0,92321	8981,54	Instant	4490,77	Instant
44%	0,94468	8932,957	Instant	4466,479	Instant
45%	0,96615	8884,842	Instant	4442,421	Instant
46%	0,98762	8837,187	Instant	4418,593	Instant
47%	1,00909	8789,987	Instant	4394,994	Instant
48%	1,03056	8743,238	Instant	4371,619	Instant
49%	1,05203	8696,933	Instant	4348,467	Instant
50%	1,0735	8651,067	Instant	4325,534	Instant
51%	1,09497	8605,635	Instant	4302,817	Instant
52%	1,11644	8560,631	Instant	4280,315	Instant
53%	1,13791	8516,05	Instant	4258,025	Instant
54%	1,15938	8471,886	Instant	4235,943	Instant
55%	1,18085	8428,136	Instant	4214,068	Instant
56%	1,20232	8384,793	Instant	4192,397	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
57%	1,22379	8341,853	Instant	4170,927	Instant
58%	1,24526	8299,311	Instant	4149,656	Instant
59%	1,26673	8257,162	Instant	4128,581	Instant
60%	1,2882	8215,401	Instant	4107,701	Instant
61%	1,30967	8174,024	Instant	4087,012	Instant
62%	1,33114	8133,025	Instant	4066,513	Instant
63%	1,35261	8092,401	Instant	4046,2	Instant
64%	1,37408	8052,146	Instant	4026,073	Instant
65%	1,39555	8012,257	Instant	4006,128	Instant
66%	1,41702	7972,728	Instant	3986,364	Instant
67%	1,43849	7933,556	Instant	3966,778	Instant
68%	1,45996	7894,735	Instant	3947,368	Instant
69%	1,48143	7856,263	Instant	3928,132	Instant
70%	1,5029	7818,135	Instant	3909,067	Instant
71%	1,52437	7780,346	Instant	3890,173	Instant
72%	1,54584	7742,892	Instant	3871,446	Instant
73%	1,56731	7705,77	Instant	3852,885	Instant
74%	1,58878	7668,975	Instant	3834,488	Instant
75%	1,61025	7632,504	Instant	3816,252	Instant
76%	1,63172	7596,353	Instant	3798,177	Instant
77%	1,65319	7560,518	Instant	3780,259	Instant
78%	1,67466	7524,995	Instant	3762,498	Instant
79%	1,69613	7489,781	Instant	3744,89	Instant
80%	1,7176	7454,871	Instant	3727,435	Instant
81%	1,73907	7420,262	Instant	3710,131	Instant
82%	1,76054	7385,952	Instant	3692,976	Instant
83%	1,78201	7351,935	Instant	3675,968	Instant
84%	1,80348	7318,209	Instant	3659,105	Instant
85%	1,82495	7284,771	Instant	3642,385	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
86%	1,84642	7251,616	Instant	3625,808	Instant
87%	1,86789	7218,743	Instant	3609,371	Instant
88%	1,88936	7186,146	Instant	3593,073	Instant
89%	1,91083	7153,824	Instant	3576,912	Instant
90%	1,9323	7121,773	Instant	3560,886	Instant
91%	1,95377	7089,99	Instant	3544,995	Instant
92%	1,97524	7058,471	Instant	3529,236	Instant
93%	1,99671	7027,214	Instant	3513,607	Instant
94%	2,01818	6996,216	Instant	3498,108	Instant
95%	2,03965	6965,474	Instant	3482,737	Instant
96%	2,06112	6934,985	Instant	3467,492	Instant
97%	2,08259	6904,745	Instant	3452,373	Instant
98%	2,10406	6874,753	Instant	3437,376	Instant
99%	2,12553	6845,005	Instant	3422,502	Instant
100%	2,147	6815,498	Instant	3407,749	Instant

Lampiran C.10. Tabel Setelan Waktu OCR Sesuai Jarak Gangguan Penyulang Kedondong.

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
0%	0	11603,46	Instant	5801,732	Instant
1%	0,01856	11538,67	Instant	5769,337	Instant
2%	0,03712	11474,45	Instant	5737,226	Instant
3%	0,05568	11410,8	Instant	5705,398	Instant
4%	0,07424	11347,7	Instant	5673,851	Instant
5%	0,0928	11285,16	Instant	5642,581	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
6%	0,11136	11223,17	Instant	5611,586	Instant
7%	0,12992	11161,73	Instant	5580,865	Instant
8%	0,14848	11100,83	Instant	5550,415	Instant
9%	0,16704	11040,47	Instant	5520,234	Instant
10%	0,1856	10980,64	Instant	5490,318	Instant
11%	0,20416	10921,33	Instant	5460,667	Instant
12%	0,22272	10862,55	Instant	5431,277	Instant
13%	0,24128	10804,29	Instant	5402,146	Instant
14%	0,25984	10746,54	Instant	5373,272	Instant
15%	0,2784	10689,3	Instant	5344,652	Instant
16%	0,29696	10632,57	Instant	5316,284	Instant
17%	0,31552	10576,33	Instant	5288,166	Instant
18%	0,33408	10520,59	Instant	5260,295	Instant
19%	0,35264	10465,34	Instant	5232,669	Instant
20%	0,3712	10410,57	Instant	5205,286	Instant
21%	0,38976	10356,28	Instant	5178,142	Instant
22%	0,40832	10302,47	Instant	5151,237	Instant
23%	0,42688	10249,13	Instant	5124,567	Instant
24%	0,44544	10196,26	Instant	5098,13	Instant
25%	0,464	10143,85	Instant	5071,925	Instant
26%	0,48256	10091,89	Instant	5045,947	Instant
27%	0,50112	10040,39	Instant	5020,196	Instant
28%	0,51968	9989,338	Instant	4994,669	Instant
29%	0,53824	9938,728	Instant	4969,364	Instant
30%	0,5568	9888,556	Instant	4944,278	Instant
31%	0,57536	9838,819	Instant	4919,41	Instant
32%	0,59392	9789,512	Instant	4894,756	Instant
33%	0,61248	9740,631	Instant	4870,315	Instant
34%	0,63104	9692,171	Instant	4846,085	Instant
35%	0,6496	9644,127	Instant	4822,064	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
36%	0,66816	9596,497	Instant	4798,248	Instant
37%	0,68672	9549,275	Instant	4774,637	Instant
38%	0,70528	9502,456	Instant	4751,228	Instant
39%	0,72384	9456,038	Instant	4728,019	Instant
40%	0,7424	9410,015	Instant	4705,008	Instant
41%	0,76096	9364,384	Instant	4682,192	Instant
42%	0,77952	9319,141	Instant	4659,57	Instant
43%	0,79808	9274,281	Instant	4637,14	Instant
44%	0,81664	9229,8	Instant	4614,9	Instant
45%	0,8352	9185,694	Instant	4592,847	Instant
46%	0,85376	9141,96	Instant	4570,98	Instant
47%	0,87232	9098,594	Instant	4549,297	Instant
48%	0,89088	9055,591	Instant	4527,795	Instant
49%	0,90944	9012,948	Instant	4506,474	Instant
50%	0,928	8970,661	Instant	4485,33	Instant
51%	0,94656	8928,726	Instant	4464,363	Instant
52%	0,96512	8887,139	Instant	4443,57	Instant
53%	0,98368	8845,898	Instant	4422,949	Instant
54%	1,00224	8804,997	Instant	4402,499	Instant
55%	1,0208	8764,434	Instant	4382,217	Instant
56%	1,03936	8724,205	Instant	4362,103	Instant
57%	1,05792	8684,307	Instant	4342,153	Instant
58%	1,07648	8644,735	Instant	4322,368	Instant
59%	1,09504	8605,487	Instant	4302,744	Instant
60%	1,1136	8566,559	Instant	4283,28	Instant
61%	1,13216	8527,948	Instant	4263,974	Instant
62%	1,15072	8489,65	Instant	4244,825	Instant
63%	1,16928	8451,662	Instant	4225,831	Instant
64%	1,18784	8413,98	Instant	4206,99	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
65%	1,2064	8376,602	Instant	4188,301	Instant
66%	1,22496	8339,525	Instant	4169,762	Instant
67%	1,24352	8302,744	Instant	4151,372	Instant
68%	1,26208	8266,258	Instant	4133,129	Instant
69%	1,28064	8230,062	Instant	4115,031	Instant
70%	1,2992	8194,154	Instant	4097,077	Instant
71%	1,31776	8158,531	Instant	4079,266	Instant
72%	1,33632	8123,19	Instant	4061,595	Instant
73%	1,35488	8088,127	Instant	4044,064	Instant
74%	1,37344	8053,341	Instant	4026,67	Instant
75%	1,392	8018,827	Instant	4009,414	Instant
76%	1,41056	7984,584	Instant	3992,292	Instant
77%	1,42912	7950,608	Instant	3975,304	Instant
78%	1,44768	7916,896	Instant	3958,448	Instant
79%	1,46624	7883,446	Instant	3941,723	Instant
80%	1,4848	7850,256	Instant	3925,128	Instant
81%	1,50336	7817,321	Instant	3908,661	Instant
82%	1,52192	7784,641	Instant	3892,32	Instant
83%	1,54048	7752,211	Instant	3876,106	Instant
84%	1,55904	7720,03	Instant	3860,015	Instant
85%	1,5776	7688,095	Instant	3844,047	Instant
86%	1,59616	7656,403	Instant	3828,201	Instant
87%	1,61472	7624,952	Instant	3812,476	Instant
88%	1,63328	7593,739	Instant	3796,869	Instant
89%	1,65184	7562,762	Instant	3781,381	Instant
90%	1,6704	7532,019	Instant	3766,009	Instant
91%	1,68896	7501,506	Instant	3750,753	Instant
92%	1,70752	7471,223	Instant	3735,611	Instant
93%	1,72608	7441,166	Instant	3720,583	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 3 Fasa		Gangguan 2 Fasa	
		Arus Gangguan (A)	Waktu (t)	Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)					
94%	1,74464	7411,333	Instant	3705,666	Instant
95%	1,7632	7381,721	Instant	3690,861	Instant
96%	1,78176	7352,33	Instant	3676,165	Instant
97%	1,80032	7323,155	Instant	3661,578	Instant
98%	1,81888	7294,196	Instant	3647,098	Instant
99%	1,83744	7265,449	Instant	3632,725	Instant
100%	2	7236,914	Instant	3618,457	Instant

Lampiran C.11. Tabel Setelan Waktu DGR Sesuai Jarak Gangguan Penyulang.

Lokasi Gangguan	Jarak (km)	Gangguan 1 Fasa Kitanah	
		Arus Gangguan (A)	Waktu (t)
Panjang penyulang (%)			
0%	0	25,35	Instant
1%	0,07955	25,34	Instant
2%	0,1591	25,34	Instant
3%	0,23865	25,34	Instant
4%	0,3182	25,34	Instant
5%	0,39775	25,34	Instant
6%	0,4773	25,34	Instant
7%	0,55685	25,34	Instant
8%	0,6364	25,33	Instant
9%	0,71595	25,33	Instant
10%	0,7955	25,33	Instant
11%	0,87505	25,33	Instant
12%	0,9546	25,33	Instant
13%	1,03415	25,33	Instant
14%	1,1137	25,33	Instant
15%	1,19325	25,32	Instant
16%	1,2728	25,32	Instant
17%	1,35235	25,32	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 1 Fasa Ketenah	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)
18%	1,4319	25,32	Instant
19%	1,51145	25,32	Instant
20%	1,591	25,32	Instant
21%	1,67055	25,32	Instant
22%	1,7501	25,31	Instant
23%	1,82965	25,31	Instant
24%	1,9092	25,31	Instant
25%	1,98875	25,31	Instant
26%	2,0683	25,31	Instant
27%	2,14785	25,31	Instant
28%	2,2274	25,30	Instant
29%	2,30695	25,30	Instant
30%	2,3865	25,30	Instant
31%	2,46605	25,30	Instant
32%	2,5456	25,30	Instant
33%	2,62515	25,30	Instant
34%	2,7047	25,30	Instant
35%	2,78425	25,29	Instant
36%	2,8638	25,29	Instant
37%	2,94335	25,29	Instant
38%	3,0229	25,29	Instant
39%	3,10245	25,29	Instant
40%	3,182	25,29	Instant
41%	3,26155	25,29	Instant
42%	3,3411	25,28	Instant
43%	3,42065	25,28	Instant
44%	3,5002	25,28	Instant
45%	3,57975	25,28	Instant
46%	3,6593	25,28	Instant
47%	3,73885	25,28	Instant
48%	3,8184	25,27	Instant
49%	3,89795	25,27	Instant

Lokasi Gangguan Panjang penyulang (%)	Jarak (km)	Gangguan 1 Fasa Ketanah	
		Arus Gangguan (A)	Waktu (t)
50%	3,9775	25,27	Instant
51%	4,05705	25,27	Instant
52%	4,1366	25,27	Instant
53%	4,21615	25,27	Instant
54%	4,2957	25,27	Instant
55%	4,37525	25,26	Instant
56%	4,4548	25,26	Instant
57%	4,53435	25,26	Instant
58%	4,6139	25,26	Instant
59%	4,69345	25,26	Instant
60%	4,773	25,26	Instant
61%	4,85255	25,25	Instant
62%	4,9321	25,25	Instant
63%	5,01165	25,25	Instant
64%	5,0912	25,25	Instant
65%	5,17075	25,25	Instant
66%	5,2503	25,25	Instant
67%	5,32985	25,25	Instant
68%	5,4094	25,24	Instant
69%	5,48895	25,24	Instant
70%	5,5685	25,24	Instant
71%	5,64805	25,24	Instant
72%	5,7276	25,24	Instant
73%	5,80715	25,24	Instant
74%	5,8867	25,23	Instant
75%	5,96625	25,23	Instant
76%	6,0458	25,23	Instant
77%	6,12535	25,23	Instant
78%	6,2049	25,23	Instant
79%	6,28445	25,23	Instant
80%	6,364	25,23	Instant
81%	6,44355	25,22	Instant

Lokasi Gangguan	Jarak (km)	Gangguan 1 Fasa Kitanah	
Panjang penyulang (%)		Arus Gangguan (A)	Waktu (t)
82%	6,5231	25,22	Instant
83%	6,60265	25,22	Instant
84%	6,6822	25,22	Instant
85%	6,76175	25,22	Instant
86%	6,8413	25,22	Instant
87%	6,92085	25,21	Instant
88%	7,0004	25,21	Instant
89%	7,07995	25,21	Instant
90%	7,1595	25,21	Instant
91%	7,23905	25,21	Instant
92%	7,3186	25,21	Instant
93%	7,39815	25,21	Instant
94%	7,4777	25,20	Instant
95%	7,55725	25,20	Instant
96%	7,6368	25,20	Instant
97%	7,71635	25,20	Instant
98%	7,7959	25,20	Instant
99%	7,87545	25,20	Instant
100%	7,955	25,19	Instant