




LAMPIRAN

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Lampiran A. Surat Pengantar Penelitian.

	UNIVERSITAS 17 AGUSTUS 1945 (UNTAG) SURABAYA	
	FAKULTAS TEKNIK	
Kampus : Jl. Semolowaru No. 45 Surabaya 60118 Telp. +62 31 5931800 (hunting) Fax. +62 31 5927817		
- Program Studi Teknik Industri		
- Program Studi Teknik Elektro		
- Program Studi Teknik Mesin		
- Program Studi Teknik Informatika		
- Program Studi Teknik Sipil		
- Program Studi Magister Teknik Sipil		
- Program Studi Arsitektur		
Homepage : ft.untag-sby.ac.id		
Email : teknik@untag-sby.ac.id		

Nomor : 2066/K/FT/Akd/XII/2022
Lampiran : -
Perihal : Penelitian Tugas Akhir

Surabaya, 09 Desember 2022

Kepada Yth : Kepala SDM PT. Inka Multi Solusi
Kab. Madiun

Dengan hormat,

Sebagai salah satu persyaratan untuk menyelesaikan studi pada program Strata 1, maka mahasiswa/mahasiswi diwajibkan untuk melakukan Penelitian Tugas Akhir sebagai penerapan teori dan praktek yang diperoleh selama masa studinya.

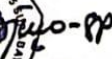

Sehubungan dengan hal tersebut, maka dengan ini kami mohon Bapak/Ibu berkenan untuk memberikan ijin kepada mahasiswa/mahasiswi sebagai berikut :

No	Nama	NBI	EMAIL	No.HP
1.	Inkha Dartanti	1451900109	idartanti@gmail.com	082233471229

Program Studi Teknik Elektro
Guna melaksanakan Penelitian Tugas Akhir di :

"Workshop SBU AC PT. Inka Multi Solusi"

yang akan dimulai pada : Semester Gasal 2022-2023
Demikian permohonan kami, atas perkenannya disampaikan terima kasih.

Dekan,


Dy. H. Satrio, M.Kes., IPU.
28410.90.0197

Lampiran B. Surat Balasan Tempat Penelitian.



Madiun, 19 Desember 2022

Nomor : SD- 365 /212/IMS/2022
Lampiran : -
Perihal : Konfirmasi Pelaksanaan Penelitian Tugas Akhir

Kepada Yth:
Dekan Fakultas Teknik
Universitas 17 Agustus 1945 (UNTAG) Surabaya
Jl. Semolowaru No. 45 Surabaya

Dengan hormat,

Menindaklanjuti Surat dari Universitas 17 Agustus 1945 (UNTAG) Surabaya Nomor: 2066/K/FT/Akd/XII/2022 tanggal 09 Desember 2022 perihal Penelitian Tugas Akhir, dengan ini kami sampaikan bahwa kami mengijinkan Mahasiswa/Mahasiwi dengan identitas berikut:

Nama : Inkha Dartanti
NBI : 1451900109
Program Studi : Teknik Elektro

Untuk melaksanakan penelitian tugas akhir di Workshop SBU AC PT INKA Multi Solusi yang berlokasi di Jl. Madiun-Ponorogo, Purworejo, Kec. Geger, Kab. Madiun.

Demikian kami sampaikan, atas perhatiannya diucapkan terimakasih.

PT INKA Multi Solusi
Kepala Divisi SDM & Umum,

Suridno

PT INKA MULTI SOLUSI

Kantor Pusat : Jl Raya Surabaya-Madiun KM 161, No. 01, Madiun. No telp: (0351) 2812105/2812256
Website: www.inkamultisolusi.co.id, E-mail: sekretariat@inkamultisolusi.co.id

Lampiran C. Kartu Asistensi.

PROGRAM STUDI - TEKNIK ELEKTRO
 FAKULTAS TEKNIK - UNIVERSITAS 17 AGUSTUS 1945 SURABAYA

KARTU ASISTENSI

PRAKT/TUGAS : TUGAS AKHIR NAMA : INKHA DARTANTI
 N.B.I. : 1451900109
 SEMESTER/THN : 8 (Delapan) PEMBIMBING : 1) Puji Slamet, S.T., M.T.
2) Reza S.W., S.Tr.T., M.T.

NO.	TANGGAL	MATERI / KOMENTAR / SARAN	TTD, PEMEBIMBING
1.	06/02/23	Pemahaman konsep judul	<i>[Signature]</i>
2.	13/02/23	Dasar Teori	<i>[Signature]</i>
3.	16/02/23	Rumus - Rumus Persamaan	<i>[Signature]</i>
4.	20/02/23	Penjelasan Diagram Air Penelitian	<i>[Signature]</i>
5.	27/03/23	Pengolahan Data	<i>[Signature]</i>
6.	12/04/23	Simulasi Program Open Loop	<i>[Signature]</i>
7.	09/05/23	Simulasi Program Close Loop.	<i>[Signature]</i>
8.	16/05/23	ACC Bab 4	<i>[Signature]</i>
9.	25/05/2023	ACC Bab 1-5	<i>[Signature]</i>

FOTONG DISINI

SUKTI PENYELESAIAN TUGAS (untuk mahasiswa)

• Di foto copy, masukkan ke kotak nilai

BUNTI PENYELESAIAN TUGAS (untuk dosen)



PRAKT/TUGAS	NILAI :
SEMESTER/THN	
NAMA :	
N B I :	
PRAKTIJUDUL TUGAS :	
	Tanggal, DOSEN PEMBIMBING

PRAKT/TUGAS	NILAI :
SEMESTER/THN	
NAMA :	
N B I :	
PRAKTIJUDUL TUGAS :	
	Tanggal, DOSEN PEMBIMBING


PERNYATAAN - PERNYATAAN DARI PRAKTIK

Lampiran D. Dokumentasi Penelitian.

No	Dokumentasi	Keterangan
1.		<p>Peneliti sedang berada di lokasi penelitian</p>
2.		<p>Analisa data spesifikasi konverter di PT INKA Multi Solusi</p>

3.	 A person wearing a green long-sleeved uniform with 'ELECT' and 'UNIVERSITY' visible on the sleeve, and a yellow hard hat, is using a multimeter to test a server rack. The rack is filled with various electronic components and cables.	Pengukuran data pengujian AC PNR
4.	 Two people wearing yellow hard hats are sitting in front of a server rack. One person is wearing a black hijab and a white long-sleeved shirt, and the other is wearing a white long-sleeved shirt. They are looking at a document on the floor, likely reviewing test results.	Analisa data hasil pengujian AC PNR

Lampiran E. Data Penelitian.
Lampiran E.1 Data Pengujian.

	INSPECTION SHEET		DOCUMENT NO : IS4501/SBU AC/IMS/UM/2022			
			PRODUCT NO. : 001			
			PROJECT : IS Unit AC PNR			
Title : Function Test AC Unit						
C. Electric Measurement						
<ul style="list-style-type: none"> • Voltage (V) 						
No	Component	item	Result 1	Result 2	Result 3	Remarks
1	Evaporator Fan 1 (V)	U-V	436	-	-	-
		V-W	434	-	-	-
		U-W	437	-	-	-
2	Evaporator Fan 2 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
3	Evaporator Fan 3 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
4	Evaporator Fan 4 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
5	Condensor Fan 1 (V)	U-V	435	-	-	-
		V-W	435	-	-	-
		U-W	438	-	-	-
6	Condensor Fan 2 (V)	U-V	435	-	-	-
		V-W	439	-	-	-
		U-W	435	-	-	-
7	Condensor Fan 3 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
8	Condensor Fan 4 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
9	Compressor 1 (V)	U-V	435	-	-	-
		V-W	435	-	-	-
		U-W	435	-	-	-



INSPECTION SHEET

DOCUMENT NO : IS4501/SBU AC/IMS/III/2022
 PRODUCT NO. : 001
 PROJECT : IS Unit AC PMR

Title : Function Test AC Unit

10	Compressor 2 (V)	U-V	435	-	-	-
		V-W	435	-	-	-
		U-W	436	-	-	-
11	Compressor 3 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-
12	Compressor 4 (V)	U-V	-	-	-	-
		V-W	-	-	-	-
		U-W	-	-	-	-

• **Current (A)**

No	Component	item	Result 1	Result 2	Result 3	Remarks
1	Evaporator Fan 1 (A)	U	3,1	-	-	-
		V	3,0	-	-	-
		W	3,0	-	-	-
2	Evaporator Fan 2 (A)	U	-	-	-	-
		V	-	-	-	-
		W	-	-	-	-
3	Evaporator Fan 3 (A)	U	-	-	-	-
		V	-	-	-	-
		W	-	-	-	-
4	Evaporator Fan 4 (A)	U	-	-	-	-
		V	-	-	-	-
		W	-	-	-	-
5	Condensor Fan 1 (A)	U	3,8	-	-	-
		V	4,0	-	-	-
		W	3,8	-	-	-
6	Condensor Fan 2 (A)	U	3,8	-	-	-
		V	3,8	-	-	-
		W	3,8	-	-	-
7	Condensor Fan 3 (A)	U	-	-	-	-
		V	-	-	-	-
		W	-	-	-	-
		U	-	-	-	-



INSPECTION SHEET

DOCUMENT NO : IS4501/SBU AC/IMS/VIII/2022

PRODUCT NO. : 001

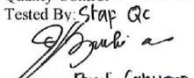
PROJECT : 15 Unit AC PMR

Title : Function Test AC Unit

8	Condensator Fan 4 (A)	V	-	-	-	-
		W	-	-	-	-
		U	15,0	-	-	-
9	Compresor 1 (A)	V	14,8	-	-	-
		W	13,8	-	-	-
		U	15,5	-	-	-
10	Compresor 2 (A)	V	15,3	-	-	-
		W	14,3	-	-	-
		U	-	-	-	-
11	Compresor 3 (A)	V	-	-	-	-
		W	-	-	-	-
		U	-	-	-	-
12	Compresor 4 (A)	V	-	-	-	-
		W	-	-	-	-
		U	-	-	-	-

• **Total Measurement**

No	Component	item	Result 1	Result 2	Result 3	Remarks
1	Total Power	U-V	437	-	-	-
	Input Voltage Panel (V)	V-W	436	-	-	-
		U-W	438	-	-	-
2	Total Current Input Panel (A)	U	42,3	-	-	-
		V	42,5	-	-	-
		W	34,9	-	-	-

Quality Control 11-08-2022
 Tested By: STAP QC

 Budi Cahyono

Quality Control : 11-08-2022
 Approved By: KALBAG QC

 Hari Purnomo Jalmiko



INSPECTION SHEET

DOCUMENT NO : LS4501/SBU AC/VMS/VIII/2022

PRODUCT NO. : 001

PROJECT : 15 Unit AC PRR

Title : Function Test AC Unit

D. Performance Test

No.	RESULT	
1	Indoor intake (cmh)	7599,94
2	Indoor outflow (cmh)	6661,49
3	h in = Average inlet enthalpy (kJ/kg)	79,22
4	h out = Average outlet enthalpy (kJ/kg)	54,24
5	$\Delta h = h_{in} - h_{out}$ (kJ/kg)	24,98
6	D = Air density (kg/m ³)	1198
7	P = Cooling capacity (kW)	55,39
8	P = Cooling capacity (kcal/hr)	47624,97
9	Deviation from design	5,83%
10	Power consumption (KVA)	30,978
11	Power consumption (kW)(@cosphi=0.8)	24,382

Technology Prepared By:

Debi F.

Technology Approved By:

Anorip

Lampiran E.2 Data Kompresor.

ZRH100KTE-TFD

HFC, R-407C, 60 Hz, 3 -Phase, 460 V
Air Conditioning



Production Status: Non U.S. model with restricted sales - Contact your Emerson Climate Technologies Representative.

Performance

Evaporator Temp.(°C)	7	7
Condensing Temp (°C)	54	38
Return Gas Temp.(°C)	18	18
Liquid Temp.(°C)	46	29
Capacity (Watts)	29600	37000
Power (W):	9110	6340
Current (Amps):	13.95	10.75
COP:	3.25	5.80
Mass Flow (g/s):	185	197
Sound Data @		
Sound Power (dBA):	80 Avg	85 Max
Vibration mm(peak-peak):	0.1 Avg	0.1 Max
Record Date:	2011-08-29	

Mechanical

Displacement(cm ³ /Rev):	142.94
Displacement	30.01
Overall Length	585.47
Overall Width (mm):	315.47
Overall Height	245.36
Mounting Length (mm):	268.48
Mounting Width (mm):	219.71
Mounting Height (mm):	250.70 *
Suction Size (mm),Type:	34.94 Stub
Discharge Size (mm),Type:	22.22 Stub
Initial Oil Charge (ml):	1626
Oil Recharge (ml):	1508
Net Weight (kg):	63.0
Internal Free Volume (cm ³):	
Horse Power:	

*Overall compressor height on Copeland Brand Product's specified mounting grommets.

Electrical

LRA-High* (Amp):	114.0
LRA Low* (Amp):	
LRA-Half Winding (Amp):	
MCC (Amps):	24.2
Max Operating Current (Amp):	17.7
RLA, MCC/1.4;use for contactor selection(Amp):	17.3
RLA, MCC/1.56;use for breaker & wire size selection(Amp):	15.5
RPM:	3500
UL File No:	
UL File Date:	
*Low and High refer to the low and high nominal voltage ranges for which the motor is approved.	

Capacitors

Alternate Applications

Refrigerant	Voltage	Phase	Freq (Hz)	Application
R-134a HFC	460	3	60	A/C, 67% Load Of Compressor
R-134a HFC	380/420	3	50	Air Conditioning
R-407C HFC	380/420	3	50	Air Conditioning