BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

1. Berdasarkan masalah yang diajukan tentang bagaimanakah kondisi *apron floodlight* di Bandar Udara Internasional Yogyakarta apakah sudah menggunakan kontrol dari jarak jauh, dari hasil pengujian rancangan alat ini dapat di gunakan untuk memonitor dan mengontrol *floodlight* di Bandar Udara Internasional Yogyakarata.
2. Rancangan *system* kontrol dan monitoring *apron floodlight* di Bandar Udara Internasional Yogyakarta menggunakan teknologi IoT dengan sensor ACS712 dan BH1750 yang berguna untuk monitoring *real-time* arus listrik dan intensitas cahaya serta kontrol jarak jauh melalui *smartphone* atau komputer dan alat ini dapat memonitor dan mengendalikan *floodligh* di Bandara Udara Internasioanl Yogyakarta.

B. Saran

1. Alat ini dapat di implementasikan untuk mengontrol *floodlight* di bandar udara internasional Yogyakarta *prototype* ini dapat dikembangkan dalam sistem kontrol *floodlight* secara otomatis. Seperti mengunakan sensor *infrared* atau menggunakan *espcam* dalam hal pengoperasian *apron floodlight*.
2. *Prototype* ini dapat diaplikasikan dengan memaksimalkan kondisi jaringan radio yang dapat berfungsi di tempat tanpa hambatan dari sinyal lain nya sehingga pengoperasian secara automatis dapat bekerja dengan maksimal sesuai dengan kondisi lingkungan sekitar serta pemancar sinyal yang harus berada di tempat yang tinggi.
3. Sistem kontrol dapat ditambahkan dengan menambahkan kontrol motor untuk menurunkan serta menaikan *floodligh.*

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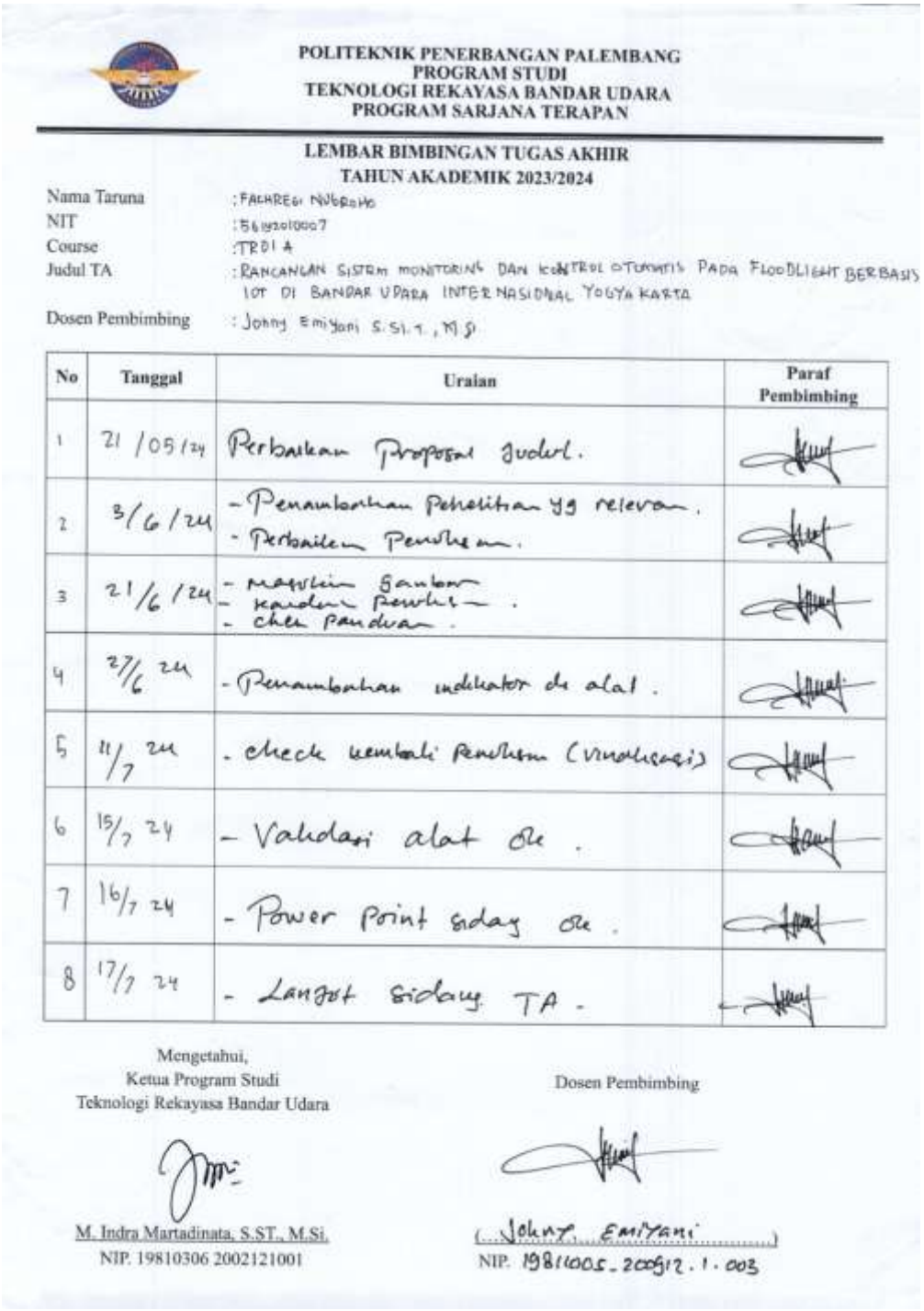
LAMPIRAN

1. LAMPIRAN 1 LEMBAR PEMBIMBING 1



POLITEKNIK PENERBANGAN PALEMBANG
PROGRAM STUDI
TEKNOLOGI REKAYASA BANDAR UDARA
PROGRAM SARJANA TERAPAN

LEMBAR BIMBINGAN TUGAS AKHIR
TAHUN AKADEMIK 2023/2024

Nama Taruna : FACHREZI NUGRAHA
NIT : 5619201007
Course : TRDI A
Judul TA : RANCANGAN SISTEM MONITORING DAN KONTROL OTOMATIS PADA FLOODLIGHT BERBASIS IOT DI BANDAR UDARA INTERNASIONAL YOGYAKARTA
Dosen Pembimbing : Johny Emiyani S.Si.T., M.Si

No	Tanggal	Uraian	Paraf Pembimbing
1	21/05/24	Perbaikan Proposal Judul.	
2	3/6/24	- Penambahan Penelitian yg relevan. - Perbaikan Penulisan.	
3	21/6/24	- masukin Gambar - kapolan Penulis. - cheh Pandwan.	
4	27/6 24	- Penambahan indikator di alat.	
5	11/7 24	- check kembali Penulisan (Analisis)	
6	15/7 24	- Validasi alat ok.	
7	16/7 24	- Power Point sidang ok.	
8	17/7 24	- Langsat Sidang TA.	

Mengetahui,
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2. LAMPIRAN 2 LEMBAR PEMBIMBING 2

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PROGRAM SARJANA TERAPAN

LEMBAR BIMBINGAN TUGAS AKHIR
TAHUN AKADEMIK 2023/2024

Nama Taruna : FACHREGI NUGROHO
NIT : 561920 10007
Course : TRBU 01 A/Pkx
Judul TA : RANCANGAN SISTEM MONITORING DAN KONTROL OTOMATIS PADA FLOODLIGHT BERBASIS IOT DI BANDAR UDARA INTERNASIONAL YOGYAKARTA
Dosen Pembimbing : Ir. ASEP MUHAMAD SOLEH, S.SIT., ST., M.Pd.

No	Tanggal	Uraian	Paraf Pembimbing
1	21 - 05 - 2024	- Perbaikan Sitasi - Bab Pendahuluan dalam bentuk Sitasi - Manfaat penelitian [illegible] penomoran - Sistematika penulisan	
2	31 - 05 - 2024	- Sistematika penulisan - Sitasi - Penambahan Rumusan masalah	
3	20 - 06 - 2024	- Penambahan Gambar - Pengecekan Panduan	
4	1 - 07 - 2024	- Penambahan indikator di Aplikasi	
5	3 - 07 - 2024	- Validasi wiring alur oke	
6	5 - 07 - 2024	- bimbingan bab V hasil dan kesimpulan	
7	8 - 07 - 2024	- Power point Sidang	
8	11 - 07 - 2024	Dapat di lanjutkan Ujian TA.	

Mengetahui,
Ketua Program Studi
Teknologi Rekayasa Bandar Udara

M. Indra Martadinata, S.ST., M.Si.
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Dosen Pembimbing

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NIP. 19750621 199803 1 002

3. LAMPIRAN 3 FORM PENGUJIAN ALAT

FORM PENGUJIAN ALAT TUGAS AKHIR

Judul TA	**RANCANGAN SISTEM MONITORING DAN KONTROL OTOMATIS PADA FLOODLIGHT BERBASIS IOT DI BANDAR UDARA INTERNASIONAL YOGYAKARTA**
Nama Taruna	Fachregi Nugroho
Course	TR01A
Tanggal pelaksanaan	

1) **Deskripsi Pengujian**

Setelah design prototipe selesai, komponen-komponen yang diperlukan telah di uji dan seluruh program, komponen selesai di satukan dalam bentuk prototipe kontrol dan monitoring floodlight bekerja dengan baik atau tidak. Berikut adalah kriteria yang akan di uji:

No	Pengujian Prototipe	Hasil pengujian	Paraf pembimbing
1	Rancangan dapat bekerja secara manual dan automatis	berhasil	
2	Sensor ACS712 Pada Prototipe dapat bekerja dengan benar	berhasil	
3	Rancangan manual dioperasikan dengan *selektor Switch* dapat bekerja dengan normal.	berhasil	
4	Sensor BH1750 Pada Prototipe dapat bekerja dengan benar	berhasil	
5	Prototipe dirancang menggunakan kendali berbasis *web* dengan menggunakan aplikasi *Visual Studio code* di *smartphone android* dan *PC* dapat bekerja dengan normal.	berhasil	

PEMBIMBING

Johny Emiyani, S.Si.T., M.Si.
Penata (III/c)
NIP. 19811005 200912 1 003

4. LAMPIRAN 4 DATA *SHEET* ACS712

ALLEGRO microsystems

ACS712

Fully Integrated, Hall-Effect-Based Linear Current Sensor IC with 2.4 kV_{RMS} Isolation and a Low-Resistance Current Conductor

FEATURES AND BENEFITS

- Low-noise analog signal path
- Device bandwidth is set via the new FILTER pin
- 5 µs output rise time in response to step input current
- 80 kHz bandwidth
- Total output error 1.5% at T_A = 25°C
- Small footprint, low-profile SOIC-8 package
- 1.2 mΩ internal conductor resistance
- 2.4 kV_{RMS} minimum isolation voltage from pins 1-4 to pins 5-8
- 5.0 V, single supply operation
- 66 to 185 mV/A output sensitivity
- Output voltage proportional to AC or DC currents
- Factory-trimmed for accuracy
- Extremely stable output offset voltage
- Nearly zero magnetic hysteresis
- Ratiometric output from supply voltage

TÜV America
Certificate Number
U8V 15 05 54214 038
CB 13 08 54214 026

PACKAGE: 8-Lead SOIC (suffix LC)

Not to scale

DESCRIPTION

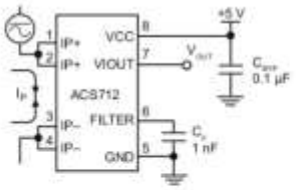
The Allegro™ ACS712 provides economical and precise solutions for AC or DC current sensing in industrial, commercial, and communications systems. The device package allows for easy implementation by the customer. Typical applications include motor control, load detection and management, switch-mode power supplies, and overcurrent fault protection. The device is not intended for automotive applications.

The device consists of a precise, low-offset, linear Hall circuit with a copper conduction path located near the surface of the die. Applied current flowing through this copper conduction path generates a magnetic field which the Hall IC converts into a proportional voltage. Device accuracy is optimized through the close proximity of the magnetic signal to the Hall transducer. A precise, proportional voltage is provided by the low-offset, chopper-stabilized BiCMOS Hall IC, which is programmed for accuracy after packaging.

The output of the device has a positive slope (>$V_{IOUT(Q)}$) when an increasing current flows through the primary copper conduction path (from pins 1 and 2, to pins 3 and 4), which is the path used for current sampling. The internal resistance of this conductive path is 1.2 mΩ typical, providing low power loss. The thickness of the copper conductor allows survival of

Continued on the next page ...

Typical Application



Application 1. The ACS712 outputs an analog signal, V_{OUT} that varies linearly with the uni- or bi-directional AC or DC primary sampled current, I_P, within the range specified. C_F is recommended for noise management, with values that depend on the application.

ISOLATION CHARACTERISTICS

Characteristic	Symbol	Notes	Rating	Unit
Withstand Voltage [1]	V_{ISO}	Agency rated for 60 seconds per UL 62368-1 (edition 3)	2400	V_{RMS}
Working Voltage for Basic Isolation	V_{WVBI}	Maximum approved working voltage for basic (single) isolation according to UL 62368-1 (edition 3)	420	V_{PK} or V_{DC}
			297	V_{RMS}
Impulse Withstand Voltage	$V_{IMPULSE}$	Tested ±5 pulses at 2/minute in compliance to IEC 61000-4-5, 1.2 µs (rise)/ 50 µs (width)	4000	V_{PK}
Clearance	D_{CL}	Minimum distance through air from IP leads to signal leads	4	mm
Creepage	D_{CR}	Minimum distance along package body from IP leads to signal leads	4	mm
Distance Through Insulation	DTI	Minimum internal distance through insulation	63	µm
Comparative Tracking Index	CTI	Material Group II	400 to 599	V

[1] 100% Production-tested for 1 second in accordance with UL 62368-1 (edition 3).

Parameter	Specification
Fire and Electric Shock	CAN/CSA-C22.2 No. 60950-1-03 UL 60950-1:2003 EN 60950-1:2001

ALLEGRO microsystems
Allegro MicroSystems
955 Perimeter Road
Manchester, NH 03103-3353 U.S.A.
www.allegromicro.com

DESCRIPTION (continued)

the device at up to 5× overcurrent conditions. The terminals of the conductive path are electrically isolated from the signal leads (pins 5 through 8). This allows the ACS712 to be used in applications requiring electrical isolation without the use of opto-isolators or other costly isolation techniques.

The ACS712 is provided in a small, surface mount SOICS package. The leadframe is plated with 100% matte tin, which is compatible with standard lead (Pb) free printed circuit board assembly processes. Internally, the device is Pb-free, except for flip-chip high-temperature Pb-based solder balls, currently exempt from RoHS. The device is fully calibrated prior to shipment from the factory.

SELECTION GUIDE

Part Number	Packing [1]	T_A (°C)	Current Sensing Range, I_P (A)	Sensitivity, Sens (Typ) (mV/A)
-S VARIANT [2]				
ACS712ELCTR-20A-S	Tape and reel, 3000 pieces/reel	–40 to 85	±20	100
ACS712ELCTR-30A-S	Tape and reel, 3000 pieces/reel	–40 to 85	±30	66
-T VARIANT [3]				
ACS712ELCTR-05B-T	Tape and reel, 3000 pieces/reel	–40 to 85	±5	185
ACS712ELCTR-20A-T	Tape and reel, 3000 pieces/reel	–40 to 85	±20	100
ACS712ELCTR-30A-T	Tape and reel, 3000 pieces/reel	–40 to 85	±30	66

[1] Contact Allegro for additional packing options.
[2] -S denotes the lead-free construction with tin-silver-based solder bumps.
[3] -T denotes Pb-contained construction with Pb-based solder bumps. Operating performance of -T and -S devices are identical. -T devices are RoHS compliant using allowed exemptions provided in Annex III and IV of Directive 2011/65/EU [Exemptions 7(a), 15, 15(a), as applicable].

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Notes	Rating	Units
Supply Voltage	V_{CC}		8	V
Reverse Supply Voltage	V_{RCC}		–0.1	V
Output Voltage	V_{IOUT}		8	V
Reverse Output Voltage	V_{RIOUT}		–0.1	V
Output Current Source	$I_{IOUT(Source)}$		3	mA
Output Current Sink	$I_{IOUT(Sink)}$		10	mA
Overcurrent Transient Tolerance	I_P	1 pulse, 100 ms	100	A
Nominal Operating Ambient Temperature	T_A	Range E	–40 to 85	°C
Maximum Junction Temperature	T_J(max)		165	°C
Storage Temperature	T_{stg}		–65 to 170	°C

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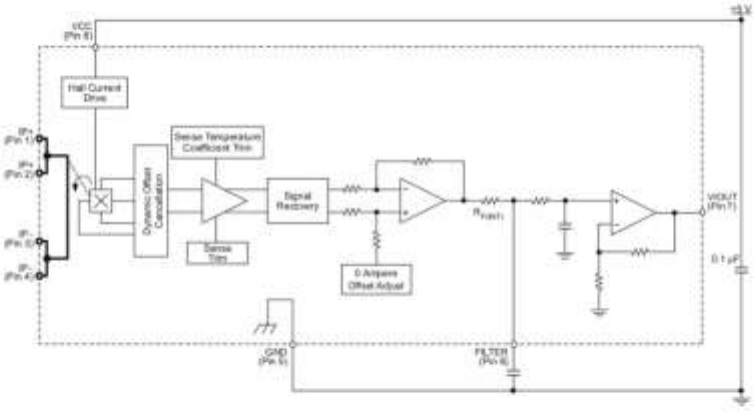
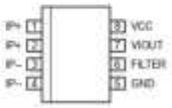
FUNCTIONAL BLOCK DIAGRAM



Pinout Diagram



Terminal List

Number	Name	Description
1 and 2	IP+	Terminals for current being sampled; fused internally
3 and 4	IP–	Terminals for current being sampled; fused internally
5	GND	Signal ground terminal
6	FILTER	Terminal for external capacitor that sets bandwidth
7	VIOUT	Analog output signal
8	VCC	Device power supply terminal

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COMMON OPERATING CHARACTERISTICS [1] Over full range of T_A, C_F = 1 nF, and V_{CC} = 5 V, unless otherwise specified

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
ELECTRICAL CHARACTERISTICS						
Supply Voltage	V_{CC}		4.5	5.0	5.5	V
Supply Current	I_{CC}	V_{CC} = 5.0 V, output open	–	10	13	mA
Output Capacitance Load	C_{LOAD}	VIOUT to GND	–	–	10	nF
Output Resistive Load	R_{LOAD}	VIOUT to GND	4.7	–	–	kΩ
Primary Conductor Resistance	$R_{PRIMARY}$	T_A = 25°C	–	1.2	–	mΩ
Rise Time	t_r	I_P = I_P(max), T_A = 25°C, C_{OUT} = open	–	3.5	–	µs
Frequency Bandwidth	f	–3 dB, T_A = 25°C, I_P is 10 A peak-to-peak	–	80	–	kHz
Nonlinearity	E_{LIN}	Over full range of I_P	–	1.5	–	%
Symmetry	E_{SYM}	Over full range of I_P	98	100	102	%
Zero Current Output Voltage	$V_{IOUT(Q)}$	Bidirectional; I_P = 0 A, T_A = 25°C	–	$\frac{V_{CC}}{0.5}$ *	–	V
Power-On Time	t_{PO}	Output reaches 90% of steady-state level, T_J = 25°C, 20 A present on leadframe	–	35	–	µs
Magnetic Coupling [2]			–	12	–	G/A
Internal Filter Resistance [3]	$R_{F(INT)}$			1.7		kΩ

[1] Device may be operated at higher primary current levels, I_P, and ambient, T_A, and internal leadframe temperatures, T_A, provided that the Maximum Junction Temperature, T_J(max), is not exceeded.

[2] 1G = 0.1 mT.

[3] $R_{F(INT)}$ forms an RC circuit via the FILTER pin.

COMMON THERMAL CHARACTERISTICS [1]

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Operating Internal Leadframe Temperature	T_A	E range	–40	–	85	°C
Characteristic	**Symbol**	**Test Conditions**			**Value**	**Units**
Junction-to-Lead Thermal Resistance [2]	$R_{\theta JL}$	Mounted on the Allegro ASEK 712 evaluation board			5	°C/W
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	Mounted on the Allegro 85-0322 evaluation board, includes the power consumed by the board			23	°C/W

[1] Additional thermal information is available on the Allegro website.

[2] The Allegro evaluation board has 1500 mm^2 of 2 oz. copper on each side, connected to pins 1 and 2, and to pins 3 and 4, with thermal vias connecting the layers. Performance values include the power consumed by the PCB. Further details on the board are available from the Frequently Asked Questions document on our website. Further information about board design and thermal performance also can be found in the Applications Information section of this datasheet.

ALLEGRO microsystems
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www.allegromicro.com

5. LAMPIRAN 5 DATA *SHEET* BH1750

ROHM SEMICONDUCTOR

Technical Note

Ambient Light Sensor IC Series

Digital 16bit Serial Output Type Ambient Light Sensor IC

BH1750FVI

No.11046EDT01

●**Descriptions**

BH1750FVI is an digital Ambient Light Sensor IC for I²C bus interface. This IC is the most suitable to obtain the ambient light data for adjusting LCD and Keypad backlight power of Mobile phone. It is possible to detect wide range at High resolution. (1 - 65535 lx).

●**Features**

1) I²C bus Interface (f / s Mode Support)
2) Spectral responsibility is approximately human eye response
3) Illuminance to Digital Converter
4) Wide range and High resolution. (1 - 65535 lx)
5) Low Current by power down function
6) 50Hz / 60Hz Light noise reject-function
7) 1.8V Logic input interface
8) No need any external parts
9) Light source dependency is little. (ex. Incandescent Lamp. Fluorescent Lamp. Halogen Lamp. White LED. Sun Light)
10) It is possible to select 2 type of I²C slave-address.
11) Adjustable measurement result for influence of optical window (It is possible to detect min. 0.11 lx, max. 100000 lx by using this function.)
12) Small measurement variation (+/- 20%)
13) The influence of infrared is very small.

●**Applications**

Mobile phone, LCD TV, NOTE PC, Portable game machine, Digital camera, Digital video camera, PDA, LCD display

●**Absolute Maximum Ratings**

Parameter	Symbol	Ratings	Units
Supply Voltage	Vmax	4.5	V
Operating Temperature	Topr	-40~85	℃
Storage Temperature	Tstg	-40~100	℃
SDA Sink Current	Imax	7	mA
Power Dissipation	Pd	260※	mW

※ 70mm × 70mm × 1.6mm glass epoxy board. Derating in done at 3.47mW/℃ for operating above Ta=25℃

●**Operating Conditions**

Parameter	Symbol	Ratings			Units
		Min.	Typ.	Max.	
Vcc Voltage	Vcc	2.4	3.0	3.6	V
I²C Reference Voltage	Vovi	1.65	-	Vcc	V

●Electrical Characteristics (Vcc = 3.0V, DVI = 3.0V, Ta = 25℃, unless otherwise noted)

Parameter	Symbol	Limits			Units	Conditions
		Min.	Typ.	Max.		
Supply Current	Icc1	–	120	190	μA	Ev = 100 lx ※1
Powerdown Current	Icc2	–	0.01	1.0	μA	No input Light
Peak Wave Length	λp	–	560	–	nm	
Measurement Accuracy	S/A	0.96	1.2	1.44	times	Sensor out / Actual lx EV = 1000 lx ※1, ※2
Dark (0 lx) Sensor out	S0	0	0	3	count	H-Resolution Mode ※3
H-Resolution Mode Resolution	rHR	–	1	–	lx	
L-Resolution Mode Resolution	rLR	–	4	–	lx	
H-Resolution Mode Measurement Time	tHR	–	120	180	ms	
L-Resolution Mode Measurement Time	tLR	–	16	24	ms	
Incandescent / Fluorescent Sensor out ratio	rIF	–	1	–	times	EV = 1000 lx
ADDR Input 'H' Voltage	VAH	0.7 * VCC	–	–	V	
ADDR Input 'L' Voltage	VAL	–	–	0.3 * VCC	V	
DVI Input 'L' Voltage	VDVL	–	–	0.4	V	
SCL, SDA Input 'H' Voltage 1	VIH1	0.7 * DVI	–	–	V	DVI ≧ 1.8V
SCL, SDA Input 'H' Voltage 2	VIH2	1.26	–	–	V	1.65V ≦ DVI <1.8V
SCL, SDA Input 'L' Voltage 1	VIL1	–	–	0.3 * DVI	V	DVI ≧ 1.8V
SCL, SDA Input 'L' Voltage 2	VIL2	–	–	DVI – 1.26	V	1.65V ≦ DVI < 1.8V
SCL, SDA, ADDR Input 'H' Current	IIH	–	–	10	μA	
SCL, SDA, ADDR Input 'L' Current	IIL	–	–	10	μA	
I²C SCL Clock Frequency	fSCL	–	–	400	kHz	
I²C Bus Free Time	tBUF	1.3	–	–	μs	
I²C Hold Time (repeated) START Condition	tHDSTA	0.6	–	–	μs	
I²C Set up time for a Repeated START Condition	tSUSTA	0.6	–	–	μs	
I²C Set up time for a Repeated STOP Condition	tSUSTD	0.6	–	–	μs	
I²C Data Hold Time	tHDDAT	0	–	0.9	μs	
I²C Data Setup Time	tSUDAT	100	–	–	ns	
I²C 'L' Period of the SCL Clock	tLOW	1.3	–	–	μs	
I²C 'H' Period of the SCL Clock	tHIGH	0.6	–	–	μs	
I²C SDA Output 'L' Voltage	VOL	0	–	0.4	V	IOL = 3 mA

※1 White LED is used as optical source.
※2 Measurement Accuracy typical value is possible to change "1" by "Measurement result adjustment function".
※3 Use H-resolution mode or H-resolution mode2 if dark data (less than 10 lx) is need.

●Reference Data

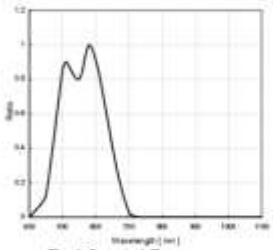


Fig.1 Spectral Response

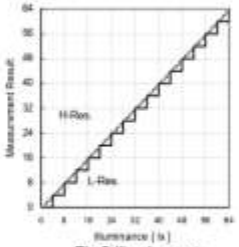


Fig.2 Illuminance - Measurement Result 1

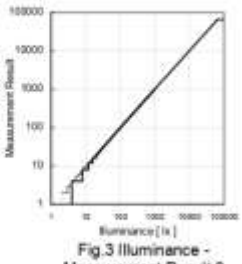


Fig.3 Illuminance - Measuremnet Result 2

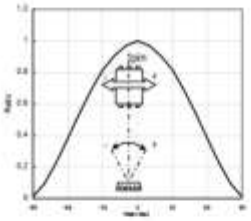


Fig.4 Directional Characteristics 1

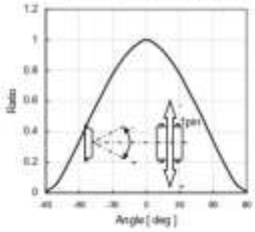


Fig.5 Directional Characteristics 2

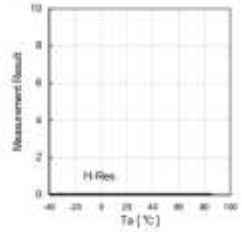


Fig.6 Dark Response

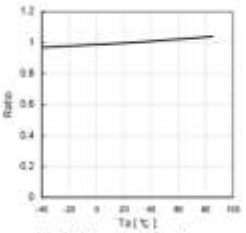


Fig.7 Measurement Accuracy Temperature Dependency

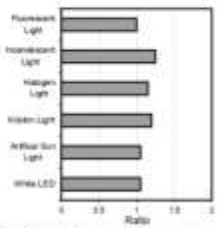


Fig.8 Light Source Dependency (Fluorescent Light is set to "1")

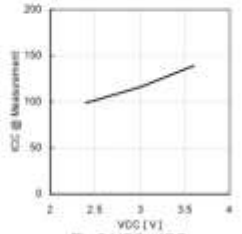


Fig.9 VCC - ICC (During measurement)

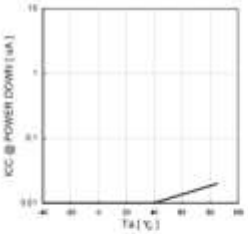


Fig.10 VCC – ICC@0 Lx (POWER DOWN)

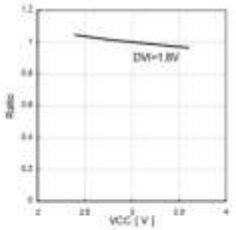


Fig.11 Measurement Result VCC Dependency

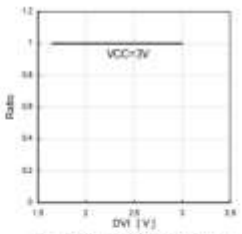
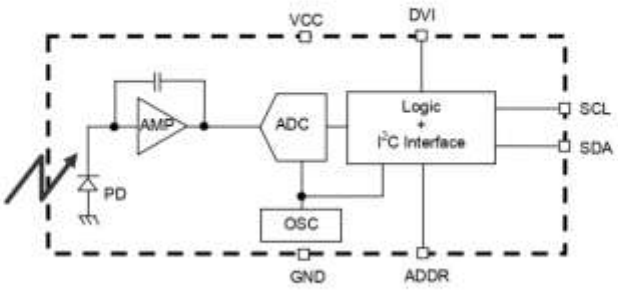


Fig.12 Measurement Result DVI Dependency

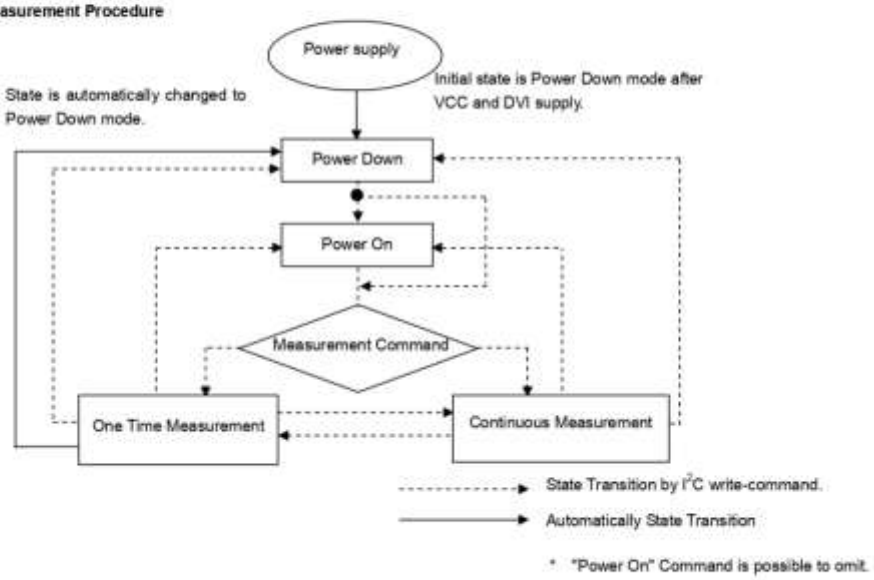
●Block Diagram



●Block Diagram Descriptions

- PD
  Photo diode with approximately human eye response.
- AMP
  Integration-OPAMP for converting from PD current to Voltage.
- ADC
  AD converter for obtainment Digital 16bit data.
- Logic + I²C Interface
  Ambient Light Calculation and I²C BUS Interface. It is including below register.
  Data Register → This is for registration of Ambient Light Data. Initial Value is "0000_0000_0000_0000".
  Measurement Time Register → This is for registration of measurement time. Initial Value is "0100_0101".
- OSC
  Internal Oscillator (typ. 320kHz). It is CLK for internal logic.

●Measurement Procedure



* "Power On" Command is possible to omit.

●Instruction Set Architecture

Instruction	Opecode	Comments
Power Down	0000_0000	No active state.
Power On	0000_0001	Waiting for measurement command.
Reset	0000_0111	Reset Data register value. Reset command is not acceptable in Power Down mode.
Continuously H-Resolution Mode	0001_0000	Start measurement at 1lx resolution. Measurement Time is typically 120ms.
Continuously H-Resolution Mode2	0001_0001	Start measurement at 0.5lx resolution. Measurement Time is typically 120ms.
Continuously L-Resolution Mode	0001_0011	Start measurement at 4lx resolution. Measurement Time is typically 16ms.
One Time H-Resolution Mode	0010_0000	Start measurement at 1lx resolution. Measurement Time is typically 120ms. It is automatically set to Power Down mode after measurement.
One Time H-Resolution Mode2	0010_0001	Start measurement at 0.5lx resolution. Measurement Time is typically 120ms. It is automatically set to Power Down mode after measurement.
One Time L-Resolution Mode	0010_0011	Start measurement at 4lx resolution. Measurement Time is typically 16ms. It is automatically set to Power Down mode after measurement.
Change Measurement time (High bit)	01000_MT[7,6,5]	Change measurement time. ※ Please refer "adjust measurement result for influence of optical window"
Change Masurement time (Low bit)	011_MT[4,3,2,1,0]	Change measurement time. ※ Please refer "adjust measurement result for influence of optical window "

※ Don't input the other opecode.

●Measurement mode explanation

Measurement Mode	Measurement Time.	Resolurtion
H-resolution Mode2	Typ. 120ms.	0.5 lx
H-Resolution Mode	Typ. 120ms.	1 lx.
L-Resolution Mode	Typ. 16ms.	4 lx.

We recommend to use H-Resolution Mode.
Measurement time (integration time) of H-Resolution Mode is so long that some kind of noise(including in 50Hz / 60Hz noise) is rejected. And H-Resolution Mode is 1 l x resolution so that it is suitable for darkness (less than 10 lx)
H-resolution mode2 is also suitable to detect for darkness.

●**Explanation of Asynchronous reset and Reset command "0000_0111"**

1) Asynchronous reset
All registers are reset. It is necessary on power supply sequence. Please refer "Timing chart for VCC and DVI power supply sequence" in this page. It is power down mode during DVI = 'L'.

2) Reset command
Reset command is for only reset Illuminance data register. (reset value is '0') It is not necessary even power supply sequence.It is used for removing previous measurement result. This command is not working in power down mode, so that please set the power on mode before input this command.

6. LAMPIRAN 6 FOTO KALIBRASI KOMPONEN


7. LAMPIRAN 7 VALIDASI WIRING DAN ALAT

FORM PENGUJIAN ALAT TUGAS AKHIR

Judul TA	**RANCANGAN SISTEM MONITORING DAN KONTROL OTOMATIS PADA FLOODLIGHT BERBASIS IOT DI BANDAR UDARA INTERNASIONAL YOGYAKARTA**
Nama Taruna	Fachregi Nugroho
Course	TR01A
Tanggal pelaksanaan	

1) **Deskripsi Pengujian**

Setelah design prototipe selesai, komponen-komponen yang diperlukan telah di uji dan seluruh program, komponen selesai di satukan dalam bentuk prototipe kontrol dan monitoring floodlight bekerja dengan baik atau tidak. Berikut adalah kriteria yang akan di uji:

No	Pengujian Prototipe	Hasil pengujian	Paraf pembimbing
1	Rancangan dapat bekerja secara manual dan automatis	berhasil	
2	Sensor ACS712 Pada Prototipe dapat bekerja dengan benar	berhasil	
3	Rancangan manual dioperasikan dengan *selektor Switch* dapat bekerja dengan normal.	berhasil	
4	Sensor BH1750 Pada Prototipe dapat bekerja dengan benar	berhasil	
5	Prototipe dirancang menggunakan kendali berbasis *web* dengan menggunakan aplikasi *Visual Studio code* di *smartphone android* dan *PC* dapat bekerja dengan normal.	berhasil	

PEMBIMBING

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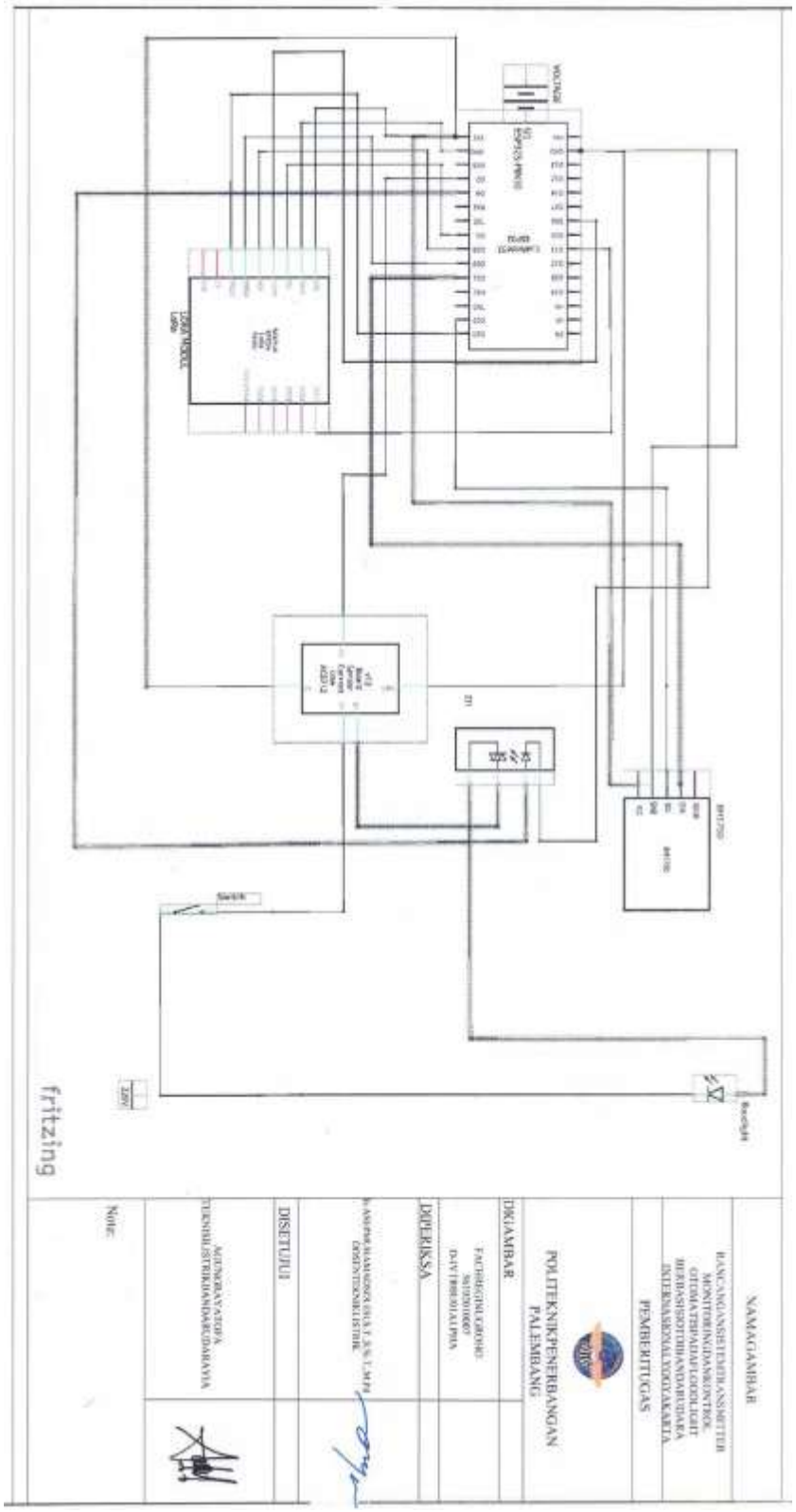
Penata (III/c)
NIP. 19811005 200912 1 003


fritzing
Switch
220V
Buzzer
NAMA GAMBAR
RANCANGAN SISTEM BIOMASS METER
MONITORING DAN KONTROL
OTOMATIS PADA PLOOR LIGHT
BERBASIS IOT BRANDABUDAYA
INTERNASIONAL YOGYAKARTA
PEMBERI TUGAS
POLITEKNIK PENERBANGAN
PALEMBANG
DIGAMBAR
DIPERIKSA
DISETUJUI
Note: