

PROYEK : BDPD KELAPA SAWIT KEMENKEU  
 PEKERJAAN : INSTALASI ELEKTRONIK  
 PERIHAL : OUTLINE SPESIFIKASI  
 REV. / TANGGAL : 00 / 27 AGUSTUS 2024  
 DIBUAT OLEH : PT DUTA PRATAMA ENGINEERING

NO.	URAIAN	SPESIFIKASI TEKNIS	MERK
I	<b>INSTALASI FIRE ALARM</b>		
1	<b>Fire Alarm Panel ( MCPFA ) Addressable</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- System	Full Addressable Redundant ( 2 Processors & Circuits )	
	- Min. no of address per loop	125 Address	
	- Operating voltage	24 V DC	
	- Power Supply	230 VAC +15%/-20%	
	- Temperature	-5° to +50°C	
	- Humidity	5-95%,	
	- Power Consumption Standby	160 W	
	- Battery Compartment	Max. 2 (12V/45Ah)	
	- Display	Minimal 5.7" TFT-Color Display	
	- Type	Wall Mounting	
	- Bus Technology	RS 485, TCP/IP	
	- Rate of Data Transfer	2500 kbit/s	
	- Protection Category	IP 30	
	- Event Memory	10.000 message	
	- Approval	UL / FM - Listed	
2	<b>Main Indication ( Annunciator )</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Electrical	High Speed RS485	
	- Direction	bidirectional, half-duplex	
	- Cable	STP AWG	
	- Supply Voltage	+22 V to +30 V DC	
	- Quiescent current consumption	typ. 165 mA	
	- Protection type	IP42	
	- Display	5.7" LCD Display	
	- Ambient temperature	-5 °C to +50 °C	
	- Relative humidity	5 % to 95 %, without condensation	
	- Approval	UL / FM - Listed	
3	<b>Manual Call Point</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Type	Manual Break Glass dilengkapi dengan Cover	
	- Construction	Surface mounting	
	- Housing Colour	Red	
	- Short Circuit Isolator	Built-in integrated isolator	
	- Operating Voltage	7 – 31 VDC	
	- Temperature	30 to +70 °C	
	- Humidity	0 - 95%	
	- Protection Category	IP 24	
	- Approval	UL / FM - Listed	
4	<b>Alarm Bell</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Operating voltage tange	12 to 30 Vdc	
	- Diameter	6"	
	- Sound Output (dB)	Min. 85 dB	
	- Housing Colour	Red	
	- Protection Category	IP 21	
	- Construction	Surface mounting	
	- Approval	UL / FM - Listed	
5	<b>Alarm Flash Light</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Operating voltage	17 to 60 VDC	
	- Power Consumption	'@ 0.5 Hz: 20 mA '@ 1 Hz: 40 mA	
	- Switch-on current	Category W 720 mA for 3.6 µs Category C 650 mA for 3.6 µs	
	- Flashing frequency	0.5 or 1 Hz	
	- Light colour	Red	
	- Protection type	Flat base IP21C, Deep base IP65	
	- Permitted ambient temperature	'-25 to +70°C	
	- Approval	UL / FM - Listed	
6	<b>Photoelectric Smoke Detector c/w base (Addressable)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Unique flat response technology		
	- Improved noise immunity		
	- Custom designed steel mesh		
	- Removable chamber		
	- Twin LED indicator lamp		
	- Anti tamper locking mechanism		
	- Rated voltage	16 to 30 VDC	
	- Current consumption	quiescent 0.15 mA	
	- Short-circuit Isolator	Built-in integrated isolator	
	- Temperature range	-25 °C to +60 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
7	<b>Rate of Rise Heat Detector c/w base (Addressable)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Detector Type	Heat Sensor ROR	
	- Rated voltage	9 to 35 VDC	
	- Current consumption	quiescent 50 µA	

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	- Temperature range	-10 °C to +50 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
8	<b>Fixed Temperature Heat Detector c/w base (Addressable)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Detector Type	Fix Temperature Heat Sensor	
	- Rated voltage	9 to 35 VDC	
	- Current consumption	quiescent 50 µA	
	- Temperature range	-10 °C to +50 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
9	<b>Photoelectric Smoke Detector c/w base (Konvensional)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Unique flat response technology		
	- Improved noise immunity		
	- Custom designed steel mesh		
	- Removable chamber		
	- Twin LED indicator lamp		
	- Anti tamper locking mechanism		
	- Rated voltage	16 to 30 VDC	
	- Current consumption	quiescent 0.15 mA	
	- Short-circuit Isolator	Built-in integrated isolator	
	- Temperature range	-25 °C to +60 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
10	<b>Rate of Rise Heat Detector c/w base (Konvensional)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Detector Type	Heat Sensor ROR	
	- Rated voltage	9 to 35 VDC	
	- Current consumption	quiescent 50 µA	
	- Temperature range	-10 °C to +50 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
11	<b>Fixed Temperature Heat Detector c/w base (Konvensional)</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Detector Type	Fix Temperature Heat Sensor	
	- Rated voltage	9 to 35 VDC	
	- Current consumption	quiescent 50 µA	
	- Temperature range	-10 °C to +50 °C	
	- Humidity	10 - 95%	
	- Protection Category	IP 22	
	- Construction	Surface/Flush mounting	
	- Approval	UL / FM - Listed	
12	<b>Monitor Module</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Operating temperature	0 to 49 °C	
	- Humidity	93% RH, non-condensing	
	- Operating Voltage	15.2 to 42 Vdc (19 Vdc nominal)	
	- Operating current		
	Standby	250 mA	
	Activated	400 Ma	
	- Construction and finish	High-impact white engineered plastic 1-gang front plate	
		Front plate identifies the module,	
	- LED operation	On-board green LED flashes when polled	
		On-board red LED flashes when in alarm	
13	<b>Control Module</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Operating temperature	0 to 49 °C	
	- Humidity	93% RH, non-condensing	
	- Operating Voltage	15.2 to 42 Vdc (19 Vdc nominal)	
	- Operating current		
	Standby	223 mA	
	Activated	100 Ma	
	- Operating rating	24 V dc = 2 A	
		25 V audio = 50 W	
		70 V audio = 35 W	
	- Construction and finish	High-impact white engineered plastic 1-gang front plate	
		Front plate identifies the module,	
	- LED operation	On-board green LED flashes when polled	
		On-board red LED flashes when in alarm	
14	<b>Isolator Module</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Operating temperature	0 to 49 °C	
	- Humidity	93% RH, non-condensing	
	- Operating Voltage	15 to 32 VDC	
	- Maximum Operating Voltage	255 µA (LED flashing)	

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15	<b>Intercom Set</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Connection	Phone jack type	
	- Type	Telephone handset	
16	<b>Annunciator Network Controller</b>		Bosch, Comelit, Notifire, Nohmi, Edward, Securiton
	- Type	Back - Lit LCD	
17	<b>Computer Graphic</b>	- Intel Core i5 Min 3.0 GHz Min. RAM 4 Gb, DDR 3 Min. Hard Disk 2 x 500 Gb Video Graphic Min. 1 Gb, 128 bit, Dedicated DVD - R/W untuk back up system, 100 Base-T Ethernet NIC card and mouse type pointing device - Monitor 21" LED	DELL, LENOVO, HP
18	<b>UPS</b>		ABB, Borri, Schneider, Legrand, RemingtonS
	- Kapasitas	Sesuai Gambar	
	- Power faktor	0,8	
	- Efisiensi	harus 96% atau lebih besar	
	- Total Harmonic Distortion (THD) Input	< 7 % (tanpa alat tambahan)	
	- Toleransi Tegangan Output	± 1 % pada beban linear	
19	<b>Kotak Penghubung / JBFA</b>		Lokal SNI
	- Tebal plat	2 mm atau lebih	
	- Finishing	Proses anti karat dan cat bakar	
20	<b>Cabling</b>		
	- Signal Cable & Network Cable FRC (Fire Resistance Low Smoke Zero Halogen Cable)	FRC Twisted STP	BetaFlame, Shan Cable, Pyrotec, Belden
	- Power Cable FRC (Fire Resistance Low Smoke Zero Halogen Cable)	FRC	BetaFlame, Shan Cable, Pyrotec, Belden
	- Signal Cable Non FRC	Twisted STP	Belden, Panduit, Furukawa, Datwyler, Commscope
	- Kabel NYA		Kabelindo, Kabel Metal, Supreme, Voksel
21	<b>Conduit</b>	High Impact	Boss, Ega, Clipsal, Vinilon
22	<b>Line Arraster</b>		ABB, Schneider
II	<b>INSTALASI TATA SUARA</b>		
1	<b>MEDIA PLAYER MP3, USB &amp; CD player</b>		Toa, Bosch, Honeywell
	- Power Source	220 - 240 V, 50/60 Hz	
	- Power Consumption	15 Watt	
	- Frequency Response	20 - 20 KHz ± 3 dB	
	- Tuner Receiving Frequency	87,5 - 108 MHz ( 50 KHz step )	
	- Channels of Memory Tuner	30 channel in total for FM broadcast	
	- Operating Temperature	0°C to + 40°C	
2	<b>Power Amplifier</b>		Toa, Bosch, Honeywell
	- Power Source	220 - 240 V AC, or 24V DC	
	- Rated Output	600 W - 4 Chanel	
	- Minimum signal-to-noise ratio	107 dBA	
	- Frequency Response	20 - 20.000 Hz, - 3 dB	
	- Operating temperature (°C)	5 - 50 °C	
	- Operating Voltage (VDC)	44 - 60 VDC	
3	<b>Control Interface module</b>		Toa, Bosch, Honeywell
	- Number of control inputs	16	
	- Number of control outputs	8	
	- Protocols / standard	TCP / IP	
	- Operating temperature (°C)	5 - 50 °C	
4	<b>Digital Mixer Amplifier</b>		Toa, Bosch, Honeywell
	- Power Source	220 - 240 V AC, 50/60 Hz	
	- Power Consumption	50 W	
	- Frequency Response	20 Hz - 20 kHz, +1, -3 dB	
5	<b>Graphic Equalizer</b>		Toa, Bosch, Honeywell
	- Power Source	220 - 240 V AC, 50/60 Hz	
	- Power Consumption	13 W	
	- Frequency Response	20 Hz - 20 kHz, +1, -2 dB	
6	<b>Power Supply Module</b>		Toa, Bosch, Honeywell
	- Mains Power Supply Input		
	- Input Voltage range	100 - 240 VAC	
	- Input Voltage Tolerance	85 - 264 VAC	
	- Frequency Range	50 Hz - 60 Hz	
	- Power Faktor	0,9 - 1,0	
	- 48 VDC Output		
	- Nominal DC Output Voltage	48 V	
	- Output Voltage Range	48 - 56 V	
	- Maximum Continous Current	5, A	
	- Power Consumption	265 Watt	

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7	<b>Speaker</b>		
	<b>Ceiling Speaker</b>		Toa, Bosch, Honeywell
	- Rated Noise Power	3 W	
	- Sensitivity	94 dB (1 W, 1 m) (330 Hz - 3.3 kHz, pink noise)	
	- Frequency Response	45 Hz - 20 kHz (pink noise -20dB)	
	- Type	Flush ceiling mounting	
	<b>Wall Speaker</b>		Toa, Bosch, Honeywell
	- Rated Noise Power	6 W	
	- Sound Pressure Level	91 dB (1 W, 1 m)	
	- Frequency Response	120 – 15,000 Hz (-20 dB)	
	- Type	Wall mount box speaker	
	<b>Horn Speaker</b>		Toa, Bosch, Honeywell
	- Rated Input	15 W	
	- Sound Pressure Level	112 dB (1 W, 1 m)	
	- Frequency Response	280 Hz - 12.5 kHz	
	<b>Coloumn Speaker</b>		Toa, Bosch, Honeywell
	- Rated Input	10 W	
	- Sound Pressure Level	93 dB (1 W, 1 m)	
	- Frequency Response	150 Hz - 10 kHz	
	<b>Wall Speaker Heat Resistance</b>		Toa, Bosch, Honeywell
	- Rated Noise Power	6 W	
	- Frequency Response	100 Hz - 20 kHz (pink noise -20dB)	
	- Finish	Frame: Steel plate, white (RAL 9016 equivalent), paint Grille: Steel net, white (RAL 9016 equivalent), paint Fire Dome : Steel plate, plating	
8	<b>Attenuator ( Volume Kontrol )</b>		Toa, Bosch, Honeywell
	- Input Power	30 W	
	- Level Control	4 steps (0 dB, -6 dB, -12 dB, OFF)	
9	<b>Speaker Selektor</b>		Toa, Bosch, Honeywell
	- Voltage Source	24 V DC	
	- Current Consumption	0,4 A DC	
10	<b>Desktop LCD call station</b>		Toa, Bosch, Honeywell
	- Display Resolution (pixels)	480 x 272 px	
	- Operating Temperature (°C)	5 – 50 °C	
	- Frequency Response	100 - 14 kHz	
	- Operating voltage (VDC)	37 – 57 VDC	
	- Sample rate (kHz)	48 kHz	
	- Power Consumption	5,4 W	
11	<b>Call Station Extention</b>		Toa, Bosch, Honeywell
	- Buttons	20 programmable zone / function keys	
	- indicator Lights	Green and red LED per programmable zone / function keys	
	- Operating Temperature (°C)	5 – 45 °C	
12	<b>Wallmount LCD call station (Emergency Mic)</b>		Toa, Bosch, Honeywell
	- Display Resolution (pixels)	480 x 272 px	
	- Operating Temperature (°C)	5 – 50 °C	
	- Frequency Response	20 Hz - 20 kHz	
	- Operating voltage (VDC)	37 – 57 VDC	
	- Sample rate (kHz)	48 kHz	
	- Power Consumption	5,4 W	
13	<b>Change Over Switch</b>		Toa, Bosch, Honeywell
	- Power Source	24 V DC	
	- Current Consumption	240 mA	
	- No. of Input channel	6 Duty Amplifier, 1 Standby Amplifier	
	- No. of output channel	6 Output	
14	<b>Ethernet Switch 16 PoE</b>		HPE (Aruba), Cisco, Juniper
	- 10 / 100/1000 UTP port	4 / 8 / 12 / 16 / 24	
	- 1000 max Gbic port	Support 10Gb SFP port	
	- Max addresses	Power Over Ethernet ( PoE)	
	- Desktop	Yes	
	- Rackmount	Yes	
	- MDI / MDI-X	Yes (auto)	
	- Power supply	Internal	
17	<b>UPS</b>		ABB, Borni, Schneider, Legrand, RemingtonS
	- Kapasitas	Sesuai Gambar	
	- Power faktor	0,8	
	- Effisinesi	harus 96% atau lebih besar	
	- Total Harmonic Distortion (THD) Input	< 7 % (tanpa alat tambahan)	
	- Toleransi Tegangan Output	± 1 % pada beban linear	
18	<b>Cabling</b>		

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	- Riser cable & Staircase	FRC	BetaFlame, Shan Cable, Pyrotec, Belden
	- Installation Cable	NYMHY (indoor) NYFGBY (outdoor)	Kabelindo, Supreme, Kabel Metal, Voksel Kabelindo, Supreme, Kabel Metal, Voksel
19	<b>Rack Sound System w / acc</b>		Toa, Bosch, Honeywell
	- Finish	Chassis section: Surface treated steel plate Top plate/flame 2 mm thick Reinforcement 1.6 mm thick Base: Steel plate (2 mm thick), powder coating, black Design section: Pre-coated steel plate (1 mm thick), ivory, semi-gloss	
17	<b>Conduit</b>	PVC High Impact	Boss, Ega, Clipsal, Vinilon
18	<b>Line Arraster</b>		ABB, Schneider
III	<b>INSTALASI JARINGAN DATA &amp; TELEPHONE</b>		
1	<b>UTP CAT 6</b>		Belden, Panduit, Furukawa
	- Performance characterized	250 MHz	
	- Pair count	4 pair	
	- Conductor	0.574 mm, 23 AWG Solid	
	- Impedance	66,58 ohm ± 15%	
	- NVP (Nom %)	66	
	- Insulation	Foam DE	
	- Overall Shield	Plastic Laminated Aluminium Foil	
	- Jacket	LSZH (IEC 332 - 1)	
	- End to End Warranty	25 Th	
2	<b>Modular Jack</b>		Belden, Panduit, Furukawa
	- Exceeds Industry Standard Performance Requirement		
	- Improved NEXT and Return Loss Performance		
	- Universal T568 A or T568B Wiring Pattern		
	- Easy Termination with 110 Impact Tool		
	- SL Series		
4	<b>Switch UTP Cat 6</b>		HPE (Aruba), Cisco, Juniper
	- 10 / 100/1000 UTP port	4 / 8 / 12 / 16 / 24	
	- 1000 max Gbic port	Support 10Gb SFP port	
	- Max addresses	Power Over Ethernet ( PoE)	
	- Desktop	Yes	
	- Rackmount	Yes	
	- MDI / MDI-X	Yes (auto)	
	- Power supply	Internal	
5	<b>Patch Panel &amp; Accessories</b>		Belden, Panduit, Furukawa
	- TIA CAT 6 performance requirements		
	- number of port	24	
	- Ports maybe individually replaced		
	- End to End Warranty	25 Th	
6	<b>Fiber Optic</b>		Belden, Panduit, Furukawa
	- Kabel Fiber Optic Multimode OM3		
	Standard	OM 3, ISO/IEC 11801:2002/A1:2008 IEC 60793 dan TIA/EIA 942.	
	Diameter	50/125	
	- Pigtail Fiber Optic		
	Standard	ANSI/TIA 568-C.3 and ISO/IEC 11801	
	Type	LC, SC, ST	
	- Adapter FO		
	Type	LC, SC, ST	
	Standard Type LC	TIA/EIA 604-10A (FOCIS 10) and IEC 61754-20 Ed.2	
	Standard Type SC	TIA/EIA 604-3 (FOCIS 3) and IEC 61754-4 Ed.2.	
	- Patch Cord Fiber Optic Multi Mode		
	Type and configuration	for LC-LC, LC-SC, LC-ST, SC-SC, SC-ST, ST-ST, FC-FC and MTRJ-MTRJ.	
	Minimum bending	> 10N	
	- End to End Warranty	25 Th	
7	<b>Rack Server</b>	- Compag Rack (42U height) - 42U Side Panel Kit - Graphite Metallic - Rack Stabilizing Kit 600 mm - 1Pac - Monitor 15" S5500 MPR II - 1U Keyboard & Drawer (Int'l) 9 / 10k Series - 2 x 12 kVM Console Cable - Monitor / Utility Shelf Kit (1U) - Keyboard / Monitor / Mouse Switch Box (4 port / 1U) - Power Distribution Unit - High Voltage 32 A - FAN 220 VAC (Rack 1000 series)	Abba, LS, DTC, Asterix
8	<b>Outlet Data &amp; Telephone</b>	- Modular universal RJ45 cat 6 - ISDN 8 position / 8 conductor T568A standard	Berker, Clipsal, Legrand, MK, AMP

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		- 4 and 6 pins conventional jack	
		- 110 style insulation displacement	
		- 4 outlet per face plate 100ohm	
		- 4pair impact tool	
9	<b>Master WLAN Controller</b>		
	- Capacity up to 150 AP		HPE (Aruba), Cisco, Juniper
	- Support 802.11n		
10	<b>Access Point</b>		
	- (Integrated Antenna : 802.11n)		HPE (Aruba), Cisco, Juniper
	- Support PoE dan PoE+		
11	<b>IP PABX</b>		Sangoma, Ericson LG, NEC, Alcatel
	- Capacity	sesuai gambar	
	- Type	PABX	
12	<b>Pesawat Telpo Operator</b>		Sangoma, Ericson LG, NEC, Alcatel
13	<b>Operator Console</b>		Sangoma, Ericson LG, NEC, Alcatel
14	<b>Pesawat Telpo</b>		Sangoma, Ericson LG, NEC, Alcatel
15	<b>Terminal Box, MDF</b>		
16	<b>Kabel Telpo</b>		Belden, Panduit, Furukawa
17	<b>UPS</b>		ABB, Borri, Schneider, Legrand, RemingtonS
	- Kapasitas	Sesuai Gambar	
	- Power faktor	0,8	
	- Efisiensi	harus 96% atau lebih besar	
	- Total Harmonic Distortion (THD) Input	< 7 % (tanpa alat tambahan)	
	- Toleransi Tegangan Output	± 1 % pada beban linear	
18	<b>PC</b>		DELL, LENOVO, HP
	- Processor	Prosesor i7 Min. 3.2 GHz	
	- Memory	min. 8 gb Ram	
	- Storage	1 TB	
	- Monitor	LED 21"	
	- Os	Win 7 Original	
19	<b>Tray / Ladder</b>		Baruna, Tri Abadi, Trias, Three Star, Anugerah
	- Jenis Plat	Galvanized	
	- Tebal Plat	2 mm	
20	<b>Conduit</b>		Boss, Ega, Clipsal, Vinilon
	- Type	High impact	
21	<b>Cable Marking</b>		3M, Legrand
IV	<b>INSTALASI IP CCTV</b>		
1	<b>Network Video Recorder (Type IP)</b>		Avigilon, Honeywell, UNV, Hanwha (ex samsung), Hikvision
	- IP Video Input	16 channel	
	- Recording mode	Ultra 265, H.265, H.264	
	- PC interface	10 base-T / 100 / 1000 base-TX	
	- Monitor modul	Spot and multiscreen	
	- Power Supply	12 W	
2	<b>TV Monitor LED (55") (Khusus Monitor CCTV)</b>		LG, Panasonic, Samsung
	- Voltage	220 / 240 V, 50 Hz	
	- Dimension	55" active matrix TFT LED panel	
	- Horizontal resolution	500 TV lines or more (Y/C input mode), 1680 x 1050	
	- Television system	NTSC / PAL	
	- Modul	LED monitor	
3	<b>TV LED (43") (Spot Monitor)</b>		LG, Panasonic, Samsung
	- Voltage	220 / 240 V, 50 Hz	
	- Dimension	43" active matrix TFT LED panel	
	- Horizontal resolution	500 TV lines or more (Y/C input mode), 1680 x 1050	
	- Television system	NTSC / PAL	
	- Modul	LED monitor	
4	<b>Indoor IP Camera</b>		Avigilon, Honeywell, UNV, Hanwha (ex samsung), Hikvision
	- Type model	Indoor / dome	
	- Sensor	1/2.7", 2.0 MP, Progressive Scan, CMOS	
	- Minimum illumination	Colour : 0.005 Lux, 0Lux With IR	
	- lens Type	2.8 ~ 12mm @F1.6	
	- Power	Power Consumption : Max 7,5 W	
	- Support POE	Yes	
5	<b>Outdoor IP Camera</b>		Avigilon, Honeywell, UNV, Hanwha (ex samsung), Hikvision
	- Type model	Outdoor / weather proof	
	- Sensor	1/2.7", 2.0 MP, Progressive Scan, CMOS	

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	- Minimum illumination	Colour : 0.005 Lux, 0Lux With IR on	
	- lens Type	2.8 ~ 12mm	
	- Power	Power Consumption : Max 7,5 W	
	- Support POE	Yes	
6	<b>UTP CAT 6</b>		Belden, Panduit, Furukawa
	- Performance characterized	250 MHz	
	- Pair count	4 pair	
	- Conductor	0.574 mm, 23 AWG Solid	
	- Impedance	66,58 ohm $\pm$ 15%	
	- NVP (Nom %)	66	
	- Insulation	Foam DE	
	- Overall Shield	Plastic Laminated Aluminium Foil	
	- Jacket	LSZH (IEC 332 - 1)	
	- End to End Warranty	25 Th	
7	<b>Conduit</b>		Boss, Ega, Clipsal, Vinilon
	- Type	High impact	
8	<b>PC Processor</b>	Prosesor i7 Min. 3.2 GHz	DELL, LENOVO, HP
	- Memory	min. 8 gb Ram	
	- Storage	1 TB	
	- Monitor	LED 21"	
	- Os	Win 7 Original	
9	<b>Rack CCTV</b>	- Compaq Rack (42U height) - 42U Side Panel Kit - Graphite Metalic - Rack Stabilizing Kit 600 mm - Power Distribution Unit - High Voltage - FAN 220 VAC (Rack 1000 series)	Asterik, Fortuna, HP
V	<b>INSTALASI IPTV</b>		
1	<b>Peralatan IPTV</b>		Irco, Koovik, Navikom, Televese
	- <b>Antena Parabola + Kabel</b>		
	Parabola	6 Feet Aluminium Alloy LNB Dual Polarisas	
	Tiang Antena	2,5 Inc + Pondasi Cor Beton	
	Material	Galvanized	
	Panel (Sector Devided)	6	
	Aperture Diameter	180 cm / 6 feet	
	C- Band Gain @4 GHz	35,89 dB	
	Kabel	Kabel coaxial RG 6 + Connector + Conduit	
2	- <b>Antena Terrestrial + Kabel</b>		Irco, Koovik, Navikom, Televese
	Antena	UHF	
	Tiang Antena	Pondasi Cor Beton	
	Kabel	Kabel coaxial RG 6 + Connector + Conduit	
3	<b>IP Encoder DVB S2/S</b>		Irco, Koovik, Navikom, Televese
		- Memiliki 8 x Tuners Input, mendukung input DVB-S2/S	
		- Mendukung DVB-S2 Input Stream Identifier	
		- Memiliki 1xchannel full duplex TS over IP ,9xchannels MPTS IP out tanpa IP input atau 128xchannels SPTS IP out tanpa IP input	
		- Memiliki Remote Control dan Supervision by SNMP v2, HTTP WEB and Proprietary HDMS software	
		- On Site software update melalui IP or USB	
		- RSSI, received signal strength, Eb/N0, C/N and BER monitoring	
4	<b>IP Encoder DVB T/T2</b>		Irco, Koovik, Navikom, Televese
		- Mendukung 8 HDMI channels input & 1 ASI Input	
		- Mendukung H.264/AVC high profile level 4.0 video encoding	
		- Mendukung MPEG1 Layer 2 (HE-AAC (V2) or LC-AAC optional) audio encoding	
		- Mendukung PSI/SI editing and inserting	
		- Mendukung VBR or CBR video bitrate mode	
		- Mendukung 720P, 1080I, 1080P HD video ormat	
		- Mendukung ASI output MPTS or 8 SPTS	
		- Mendukung IP Output MPTS and 8 SPTS	
		- Mendukung IP null packet filter	
		- Mendukung PID filter and transparent transport	
		- Real-time output bit-rate monitoring	
		- Update device melalui port NMS	
5	<b>IMS Server</b>		
	Ukuran	- 1U	
	UProsesor	- Intel Xeon quad core	
	URAM	- 8GB DDR 4 DIMM	
	UHDD	- 500GB SATA	
	EthernetU Por	- 2x 1GB	

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NO.	URAIAN	SPESIFIKASI TEKNIS	MERK
6	<b>File/Media Server</b>		
	Ukuran	- 1U	
	UProsesor	- Intel Xeon quad core	
	URAM	- 8GB DDR 4 DIMM	
	UHDD	- 500GB SATA	
	EthernetU Por	- 2x 1GB	
7	<b>PC Workstation</b>	- 1U	Irco, Koovik, Navikom, Televese
	Ukuran	- Intel Xeon quad core	
	UProsesor	- 8GB DDR 4 DIMM	
	URAM	- 500GB SATA	
	UHDD	- 2x 1GB	
	EthernetU Por		
8	<b>USwitch</b>		Irco, Koovik, Navikom, Televese
	UPort	- 24-port 10/100/1000Mbps	
	ULayer	- Layer 3 Switch	
		Manage Switch	
		Support Multicast	
9	<b>Set Top Box (STB)</b>		Irco, Koovik, Navikom, Televese
		- Memiliki performa Host CPU yang tinggi (1200DMIPS )	
		- Dual H264 HD decoding	
		- 3DTV decoding dan display kompatibel dengan HDMI1.4b	
		- Konsumsi daya yang rendah pada kondisi standby	
10	<b>Monitor/TV Display + Braket</b>		LG, Panasonic, Samsung
	UType	- ULED Monitor Industrial Display	
	UDimensi	- U42 inch	
	UInput	- UHDMI, VGA, Composite, Coaxial dll	
11	<b>Software Middleware IPTV Management System (IMS)</b>		Irco, Koovik, Navikom, Televese
		- Mampu mengelola paket channel dan channel yang sederhana dengan mudah dan cepat	
		- Memiliki kontrol penuh jarak jauh (remote) terhadap Set Top Box seperti fungsi reboot,shutdown dan kirim pesan (meskipun melalui internet publik)	
		- Proses update firmware STB secara jarak jauh (remote) dan otomatis	
		- Mempunyai fitur tata kelola database dengan EPG (Electronic Programme Guide) dan fitur seamless EPG content import	
		- Mampu merubah logo booting dan latar belakang/background STB	
		- STB management dan user database	
12	<b>UTP CAT 6</b>		Belden, Panduit, Furukawa
	- Performance characterized	Up to 250 MHz	
	- Pair count	4 pair	
	- Dimension dielectric	0.042	
	- Outside	0.23	
	- Conductor	0.574 mm, 23 AWG Solid	
	- Nom. Outer Diameter	7.15 mm nominal	
	- Impedance	100 ohm $\pm$ 15%	
	- NVP (Nom %)	66	
	- Insulation	Foam DE	
	- Overall Shield	Plastic Laminated	
	- Jacket	PVC Insulated LSZH (IEC 332 - 1)	
	- End to End Warranty	25 Th	
13	<b>Kabel Power</b>	NYM	Kabel Metal, Kabelindo, Supreme, Voksel
14	<b>Conduit</b>	High impact	Boss, Ega, Clipsal, Vinilon
	- Type		
VI	<b>INSTALASI ACCESS CONTROL</b>		
1	<b>Control Panel Unit (Access Controller)</b>		Armatura, Entry Pass, HID, Suprema Vanderbilt
	Processor	Microcontroller 32 bits	
	Penyimpanan	1024kb EEPROM x 2 & 16 Mb FLASH	
	Pengguna kartu/penyimpanan	min. 10.000 pengguna	
	Batere Cadangan	12V DC/7AH ( Onboard Battery backup charger )	
	Protokol Jaringan	TCP/IP, ARP, DHCP	
	Input Functionality	Fire In/exit push button/door contact/lamper.	
	Controller	Support 1 destination IP address	
	OPR. Temperature	00C -550C /320F-1650F	
2	<b>Mifare Reader &amp; Fingerprint Reader</b>		Armatura, Entry Pass, HID, Suprema Vanderbilt
	Teknologi Frekuensi	13.56 MHz Contactless Smartcard/ Mifare Card	
		Contactless smartcard /Mifare : 34 bit atau 40 Bit Wiegand	
	Output Port		
	Dimensi pembaca kartu	83 mm x 41,5 mm x 26 mm	
	Jarak Baca kartu	Min. 5 cm, - Max. 10 cm	



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		Anti Air, Temperatur operasi -20°C to 65 °C, Beroperasi	
	Tenaga Arus Pembaca kartu	VDC 10-16/80/300mA	
	Proteksi	IP65	
	Reading Time ( card )	≤ 300ms	
3	<b>Proximity Card</b>		Armatura, Entry Pass, HID, Suprema
	Technology	Digital proximity with password encryption	Vanderbilt
	Custom skins	Yes	
	Power	Passive powered by digital proximity reader	
	Min read ranges	minimum 5 cm, maximum 17.5 cm	
	Card construction	single-coil, ABS polycarbonate base, lexan skin	
	Transmit frequency	Card must respond to the 125 KHz - 13.56 MHz	
4	<b>Electronic Magnetic Lock</b>		Armatura, Entry Pass, HID, Suprema
	Holding force	sesuai dengan spesifikasi Arsitek	Vanderbilt
	Auto voltage switch from 12 V to 24 V DC with no jumpers	Yes	
	Tamper proof and weatherproof	Yes, fully sealed including cable	
	Indoor and outdoor installation	Yes, IP65	
	Stainless steel casing	Yes	
	UL listed	Yes	
5	<b>Rex Button</b>		Armatura, Entry Pass, HID, Suprema
	Switching	SPST with spring NO	Vanderbilt
	Design	Refer to interior and lighting switch	
6	<b>Emergency Break Glass</b>		Armatura, Entry Pass, HID, Suprema
	Colour	green/red	Vanderbilt
	Switching	single pole change-over	
	Contact rating	30 V dc / 5.0 A	
	Temperature	....-30°C to 70 °C,	
7	<b>Sentral Access Control (PC Hardware)</b>	- Intel Core i7 Min 3.6 GHz Min. RAM 8 Gb Min. Hard Disk 1 TB HDD Video Graphic Min. 1 Gb, 128 bit, Dedicated DVD - R/W untuk back up system, 100 Base-T  Ethernet NIC card and mouse type pointing device  - Monitor 21" LED software license door access dilengkapi dengan license fire alarm integration sentral access control	DELL, LENOVO, HP
8	<b>Sistem Turnstile</b>		Armatura, Entry Pass, HID, Suprema
	Switching	Barrier or Pole	Dormakaba, Vanderbilt
	Design	Refer to interior and Temper switch	
9	<b>Visitor Management System</b>		Armatura, Entry Pass, HID, Suprema
	Software	Visitor Management	Vanderbilt
	Atrraction	dijalankan oleh Central Processing Unit	
10	<b>VMS Control (PC Hardware)</b>	- Intel Core i7 Min 3.6 GHz Min. RAM 8 Gb Min. Hard Disk 1 TB HDD Video Graphic Min. 1 Gb, 128 bit, Dedicated DVD - R/W untuk back up system, 100 Base-T  Ethernet NIC card and mouse type pointing device  - Monitor 21" LED	DELL, LENOVO, HP
11	<b>Cabling</b>	STP	Belden, Panduit, Furukawa
	- End to End Waranty 25 Th	UTP Cat 6	Belden, Panduit, Furukawa
		NYM, NYMHY	Kabelindo, Kabel Metal, Supreme, Voksel
11	<b>Conduit</b>	High Impact Conduit	Boss, Ega, Clipsal, Vinilon
12	<b>Line Arraster</b>		ABB, Schneider
VII	<b>INSTALASI BUILDING AUTOMATIS SYSTEM</b>		
1	<b>PLC Iclude DI/DO</b>		
a	Control system	Stored-program repetitive operation	Schneider, Trend/Tridium By Honeywell, Mitsubishi
b	Input/output control system	Refresh system (Direct access input/output allowed by specification of direct access input/output (DX, DY))	Azbil
c	Programming specifications		
	- Programming language	Ladder diagram (LD), structured text (ST), function block diagram/ladder diagram (FBD/LD), sequential function chart (SFC)..1	
	- Programming expansion function	Function block (FB), function (FUN), label programming (local/global)	

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	- Constant scan	0.2 to 2000 ms (can be set in 0.1 ms increments)	
	- Fixed cycle interrupt	1 to 60000 ms (can be set in 1 ms increments)	
	- Timer performance specifications	100 ms, 10 ms, 1 ms	
	- No. of program executions	32	
	- No. of FB files	16 (Up to 15 for user)	
d	Operation specifications		
	- Execution type	Standby type, initial execution type, scan execution type, fixed-cycle execution type, event execution type	
	- Interrupt type	Internal timer interrupt, input interruption, high-speed comparison match interrupt, interrupt by module..2	
e	Command processing time		
	- LD X0	34 ns..3	
	- MOV D0 D1	34 ns..3	
f	Memory capacity		
	- Program capacity	64 k/128 k steps..4 (128 kbytes/256 kbytes, flash memory)	
	- SD memory card	Memory card capacity (SD/SDHC memory card: Max. 16 Gbytes)	
	- Device/label memory	150 kbytes..5	
	- Data memory/standard ROM	5 Mbytes	
g	Flash memory (Flash ROM) write count	Maximum 20000 times	
h	File storage capacity		
	- Device/label memory	1	
	- Data memory	P: 32, FB: 16	
	- P: No. of program files		
	- FB: No. of FB files		
	- SD memory card	NZ1MEM-2GBSD: 511..6	
		NZ1MEM-4GBSD, NZ1MEM-8GBSD, NZ1MEM-16GBSD: 65534..6	
i	Clock function		
	- Display data	Year, month, day, hour, minute, second, day of week (leap year automatic detection)	
	- Precision	Differences per month $\pm 45$ sec./25°C (TYP)	
j	No. of input/output points		
	- (1) No. of input/output points	256 points or less/384 points or less..4	
	- (2) No. of remote I/O points	384 points or less/512 points or less..4	
	- Total No. of points of (1) and (2)	512 points or less	
k	Power failure retention (clock data)		
	- Retention method	Large-capacity capacitor	
	- Retention time	10 days (Ambient temperature: 25°C)	
l	Power failure retention (device)		
	- Power failure retention capacity	Maximum 12 k word..8	
	Operating ambient temperature	0 to 55°C (32 to 131°F), non-freezing	
	Storage ambient temperature	-25 to 75°C (-13 to 167°F), non-freezing	
	Operating ambient humidity	5 to 95%RH, non-condensation	
	Storage ambient humidity	5 to 95%RH, non-condensation	
	Shock resistance	147 m/s <sup>2</sup> , Action time: 11 ms	
	Noise durability	By noise simulator at noise voltage of 1000 Vp-p,	
	Grounding	Class D grounding	
	Working atmosphere	Free from corrosive or flammable gas and excessive conductive dust	
	Operating altitude	0 to 2000 m	
	Installation location	Inside a control pane	
	Overvoltage category	II or less	
	Pollution degree	2 or less	
2	Module Digital Input		
	Connection type	Screw terminal block	
	Input type	Sink/source	
	Input signal voltage	24 V DC +20%, -15%	
	Input signal current	4.0 mA/24 V DC	
	Input impedance	5.6 k $\Omega$	
	Input response time	ON: 50 $\mu$ s or less OFF: 150 $\mu$ s or less	
	Input signal format	No-voltage contact input Sink: NPN open collector transistor Source: PNP open collector transistor	
	Input circuit insulation	Photocoupler	
	Indication of input operation	LED is lit when input is on	

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3	<b>Module Analog Input</b>		
	Analog input points	8 points (8 channels)	
	External device connection method	Spring clamp terminal block	
	Analog input voltage	-10 to +10 V DC (input resistance 1 MΩ)	
	Analog input current	-20 to +20 mA DC (input resistance 250 Ω)	
	Absolute maximum input	Voltage: ±15 V, Current: ±30 mA	
4	<b>Analog Output</b>		
	Analog output points	4 points (4 channels)	
	External device connection method	European-type terminal block	
	Analog output voltage	-10 to +10 V DC (external load resistance value 1 kΩ to 1 MΩ)	
	Analog output current	0 to 20 mA DC (external load resistance value 0 to 500 Ω)	
	Digital input	14-bit binary value	
5	<b>RS-485 Module</b>		
	Number of connected modules	Up to 4 channels:1 (only 1 channel for the master)	
	Communication interface	RS-485	
	Data length	8 bits	
	Communication protocol	RTU	
	Number of connectable slaves	32 stations	
	BMS SOFTWARE STATION	- GENESIS64 Application Server with Development, and 1500 Configured-Tags - ReportWorX64 Server with 1active report - USB Hardware Key	
7	<b>SERVER</b>		DELL, LENOVO, HP
	- CPU	Quad Core 64-bit processor or better	
	- RAM	8 GB or larger	
	- Storage	4 GB or larger (adequate physical memory for the actual	
	- Operating System (OS)*1	64-bit Windows® OS	
	- Display Resolution:	1024 × 768 pixels or more	
	- Web browser	Microsoft Edge®, Firefox®, Safari®, Google Chrome™, or Internet Explorer® 11*4	
8	<b>Cable Control</b>		
	- Cable Signal	STP 16 AWG	Belden, Panduit, Furukawa
	- End to End Warranty 25 Th	UTP Cat 6	Belden, Panduit, Furukawa
9	<b>Cable Power</b>	NYM	Kabelindo, Kabel Metal, Supreme, Voksel