

MAKLUMAT SPESIFIKASI KERJA (SKOP TERPERINCI)

Tajuk Projek : Kerja Projek Naiktaraf Makmal Pengajaran dan Pembelajaran (PdP) di Makmal FYP/IDP Semikonduktor di Aras 4, Electrical Machine Lab di Aras 6, Makmal Perisian Mikroelektronik di Aras 10, Makmal Elektronik 1 dan Makmal Pengujian & Pengukuran Semikonduktor di Aras 5 serta Makmal Sistem Terbenam dan Automasi Proses Semikonduktor di Makmal FYP/IDP.

Keterangan : ~~1. KERTAMERKAWASA~~ bagi Projek Khas Perdana Menteri Untuk Melahirkan Jurutera Bumiputera Bidang Elektrikal The Bidder enter in this schedule of work for the supply, erecting, Electrical Wiring, complete and commissioning system and other ancillary equipment in accordance with the requirement of the specifications and drawing together with twelve (12) month @ six (6) times free maintenance and guarantee as specified.

BIL	KETERANGAN	UNIT	HARGA (RM)
	FASA 1		
1.0	MAKMAL PERISIAN MIKROELEKTRONIK (ARAS 10 - BLOK 4)		
	NEW AIR-CONDITIONING WORKS - VARIABLE REFRIGERANT FLOW SYSTEM (VRF) - Semua ringkasan tawaran hendaklah dibaca bersama-sama lukisan dan spesifikasi tambahan yang disediakan.		
1.1	To install Air Cooled Variable Refrigerant Flow system (VRF) (R410A Inverter) with fully DC inverter compressor and fuzzy logic control c/w distribution panel, all cabling and wiring works between the distribution panel and the indoor and the outdoor unit, vibration isolator, refrigerant charge, refrigerant piping system of various size for the whole installation system run in PVC trunking, brackets, insulation for both pipings as per specification and thermal insulation run inside metal trunking condensation drain pipe to nearest drain or floor trap, all refrigerant pipe connection shall pass through N2 during brazing and all other necessary works for :-		
	i. Condenser Unit (CU-B4-01) 157,100 Btu/hr @ 16 Hp (1 nos)	L/S	
	ii. Indoor unit - Ceiling Cassette Cap: 49,600 Btu/hr (3 Unit)	L/S	
	Main Cabling and Sub Main Cabling		
	To supply, lay and install the following power cable complete with continuous protection conductor, cable lug and gland, cable bracket and support, cable trunking, riser, tray, conduit inclusive of earth wire and termination at both end and all other necessary accessories as per Specification and/or Drawings (The actual cable length must be measured on site by the Contractor)		
1.2	To supply and install wiring power supply form outdoor control panel to new DB power. All the wiring size depend on specificatios was laid in Hot Dipped Galvanised Trunking/ Cable Tray complete with necessary accessories. To complete all electrical works inclusive of all necessary equipment to run the system.		
	i. Condenser Unit (CU-B4-01) - using 1 x 4C x 16mm2 PVC/SWA/PVC Cu. Cable + E.C.C	L/S	
1.3	To supply and install air conditioning individual wired remote control, wiring power supply from various indoor unit to new DB power, control & communication wire connected form various indoor units to outdoor controller card. All the wiring should be follow with suitable size (depend on standard requirement) in G.I. conduit/ G.I. PVC coated flexible conduit/ Hot Dipped Galvanised trunking c/w other accessoriess. To complete all electrical works inclusive of all necessary equipment to run the system.		
	i. FCU (Ceiling Cassette) - 3 nos	L/S	

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Keterangan : ~~The Bidder is to supply and install the equipment for the supply, testing, electrical wiring, commissioning of the complete I/O and other ancillary equipment in accordance with the requirement of the specifications and drawing together with twelve (12) month @ six (6) times free maintenance and guarantee as specified.~~

BIL	KETERANGAN	UNIT	HARGA (RM)
1.4	To supply and install Air Conditioning Identity Sticker for indoor & outdoor (VRF & Split System) include wired remote control and/or switch control. Font size 14 should be use for the sticker tagging.	L/S	
	** Indoor unit:- i) Name of Contractor : _____ ii) Series No. : _____ iii) Model No. : _____ vi) Capacity Air Cond : _____ v) No. Unit : _____ vi) Installation Date : _____ ** Outdoor unit:- i) Name of Contractor : _____ ii) Series No. : _____ iii) Model No. : _____ vi) Capacity Air Cond : _____ v) No. Unit : _____ vi) Installation Date : _____ ** Wired Remote Controller and/or switch control. i) No. Unit : _____		
	Existing Mechanical System		
1.5	To relocation existing ductwork was effected during installation of new VRF (indoor unit) system c/w diffuser, damper, insulation and all related accessories.	L/S	
1.6	To relocation existing sprinkler pipework was effected during construction c/w sprinkler head and all related accessories.	L/S	
2.0	TESTING AND COMMISSIONING		
2.1	Complete testing and commissioning of the above witnessed by UiTM Superintendent Officer (S.O.).	L/S	
3.0	OTHERS (Please Notify)		
3.1	Any scope of work if important and not include inside this schedule summary or drawing, thefore must be included inside this summary such as below:-		
	i)	L/S	
	ii)	L/S	
	iii)	L/S	

MAKLUMAT SPESIFIKASI KERJA (SKOP TERPERINCI)

Tajuk Projek : Kerja Projek Naiktaraf Makmal Pengajaran dan Pembelajaran (PdP) di Makmal FYP/IDP Semikonduktor di Aras 4, Electrical Machine Lab di Aras 6, Makmal Perisian Mikroelektronik di Aras 10, Makmal Elektronik 1 dan Makmal Pengujian & Pengukuran Semikonduktor di Aras 5 serta Makmal Sistem Terbenam dan Automasi Proses Semikonduktor di Makmal MEKAWAS.

Keterangan : Kerja Naiktaraf Makmal bagi Projek Khas Perdana Menteri Untuk Melahirkan Jurutera Bumiputera Bidang Elektrikal dan Elektronik. Dalam this scope, the contractor for the supply, installation, testing, and commissioning of the complete air conditioning system and other ancillary equipment in accordance with the requirement of the specifications and drawing together with twelve (12) month @ six (6) times free maintenance and guarantee as specified.

BIL	KETERANGAN	UNIT	HARGA (RM)
	All of material must be follows the existing sizing and needs informed to Superintendent Officer (S.O.) if haven change before doing the works.		
	FASA 2		
4	MAKMAL SISTEM TERBENAM & AUTOMASI PROSES KONDUKTOR (ARAS 8 - BLOK 5)		
	NEW AIR-CONDITIONING WORKS - VARIABLE REFRIGERANT FLOW SYSTEM (VRF) - Semua ringkasan tawaran hendaklah dibaca bersama-sama lukisan dan spesifikasi tambahan yang disediakan.		
4.1	To install Air Cooled Variable Refrigerant Flow system (VRF) (R410A Inverter) with fully DC inverter compressor and fuzzy logic control c/w distribution panel, all cabling and wiring works between the distribution panel and the indoor and the outdoor unit, vibration isolator, refrigerant charge, refrigerant piping system of various size for the whole installation system run in PVC trunking, brackets, insulation for both pipings as per specification and thermal insulation run inside metal trunking condensation drain pipe to nearest drain or floor trap, all refrigerant pipe connection shall pass through N2 during brazing and all other necessary works for :-		
	i. Condenser Unit (CU-B5-01) 139,600 Btu/hr @ 14 Hp (1 nos)	L/S	
	iii. Indoor unit - Ceiling Cassette Cap: 49,600 Btu/hr (2 Unit)	L/S	
	iii. Indoor unit - Ceiling Cassette Cap: 16,000 Btu/hr (2 Unit)	L/S	
	Main Cabling and Sub Main Cabling		
	To supply, lay and install the following power cable complete with continuous protection conductor, cable lug and gland, cable bracket and support, cable trunking, riser, tray, conduit inclusive of earth wire and termination at both end and all other necessary accessories as per Specification and/or Drawings (The actual cable length must be measured on site by the Contractor)		
4.2	To supply and install wiring power supply form outdoor control panel to new DB power. All the wiring size depend on specifikatios was laid in Hot Dipped Galvanised Trunking/ Cable Tray complete with necessary accessories. To complete all electrical works inclusive of all necessary equipment to run the system.		
	i. Condenser Unit (CU-B5-01) - using 1 x 4C x 16mm2 PVC/SWA/PVC Cu. Cable + E.C.C	L/S	

MAKLUMAT SPESIFIKASI KERJA (SKOP TERPERINCI)

Tajuk Projek : Kerja Projek Naiktaraf Makmal Pengajaran dan Pembelajaran (PdP) di Makmal FYP/IDP Semikonduktor di Aras 4, Electrical Machine Lab di Aras 6, Makmal Perisian Mikroelektronik di Aras 10, Makmal Elektronik 1 dan Makmal Pengujian & Pengukuran Semikonduktor di Aras 5 serta Makmal Sistem Terbenam dan Automasi Proses Semikonduktor di Makmal MEKAWAS.

Keterangan : ~~The Bidder shall be responsible for the supply, installation, testing, commissioning of the complete Air Conditioning system and other ancillary equipment in accordance with the requirement of the specifications and drawing together with twelve (12) month @ six (6) times free maintenance and guarantee as specified.~~

BIL	KETERANGAN	UNIT	HARGA (RM)
4.3	To supply and install air conditioning individual wired remote control, wiring power supply from various indoor unit to new DB power, control & communication wire connected form various indoor units to outdoor controller card. All the wiring should be follow with suitable size (depend on standard requirement) in G.I. conduit/ G.I. PVC coated flexible conduit/ Hot Dipped Galvanised trunking c/w other accessoriess. To complete all electrical works inclusive of all necessary equipment to run the system.		
	i. FCU (Ceiling Cassette) - 4 nos	L/S	
4.4	To supply and install Air Conditioning Identity Sticker for indoor & outdoor (VRF & Split System) include wired remote control and/or switch control. Font size 14 should be use for the sticker taging.	L/S	
	** Indoor unit:- i) Name of Contractor : _____ ii) Series No. : _____ iii) Model No. : _____ vi) Capacity Air Cond : _____ v) No. Unit : _____ vi) Installation Date : _____ ** Outdoor unit:- i) Name of Contractor : _____ ii) Series No. : _____ iii) Model No. : _____ vi) Capacity Air Cond : _____ v) No. Unit : _____ vi) Installation Date : _____ ** Wired Remote Controller and/or switch control. i) No. Unit : _____		
	Existing Mechanical System		
4.5	To relocation existing ductwork was effected during installation of new VRF (indoor unit) system c/w diffuser, damper, insulation and all related accessories.	L/S	
4.6	To relocation existing sprinkler pipework was effected during construction c/w sprinkler head and all related accessories.	L/S	
5.0	MAKMAL PENGUJIAN & PENGUKURAN PERANTI SEMIKONDUKTOR (ARAS 5 - BLOK 4)		
	Existing Mechanical System		
5.1	To supply and install flexible ducting connected to existing ductwork c/w diffuser, damper, insulation and all related accessories for Bilik Staf	L/S	
6.0	TESTING AND COMMISSIONING		

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Keterangan : ~~The Bidder shall be responsible for the supply, installation, testing and commissioning of the complete I/O and control system and other ancillary equipment in accordance with the requirement of the specifications and drawing together with twelve (12) month @ six (6) times free maintenance and guarantee as specified.~~
KERJA MEKAWASA bagi Projek Khas Perdana Menteri Untuk Melahirkan Jurutera Bumiputera Bidang Elektrikal

BIL	KETERANGAN	UNIT	HARGA (RM)
6.1	Complete testing and commissioning of the above witnessed by UiTM Superintendent Officer (S.O.).	L/S	
7.0	OTHERS (Please Notify)		
7.1	Any scope of work if important and not include inside this schedule summary or drawing, thefore must be included inside this summary such as below:-		
	i)	L/S	
	ii)	L/S	
	iii)	L/S	
	All of material must be follows the existing sizing and needs informed to Superintendent Officer (S.O.) if haven change before doing the works.		
JUMLAH (RM)			