

Table 1

Row	Description	Quantity
1	Main Fire Alarm Control Panel – SIL2 Certified Supplier/Origin/Model: Honeywell-/Italy/H-S81-HS (according to Table 2)	1
1.1	Industrial Engineering Work Station + Mouse & Keyboard Supplier/Origin/ Model: Advantech/ Taiwan / ACP4000MB	1
	21" LCD Monitor (24/7)	1
	Monitoring Software	1
	Supplier/Origin/Model: Siemens-/Germany/Wincc	1
	OPC Server Supplier/Origin/Model: Honeywell-/Italy/OPC Server	1
	60" LCD Monitor (24/7)	1
	Black & White Laser Jet Printer A4	1
2	Addressable Photoelectric Smoke Detector Supplier/Origin/Model: Apollo / U.K / 55000-600APO + 45681-210APO Operating Voltage: 17 - 28 VDC Quiescent Current: 340 µA Alarm LED Current: 4 mA Operating Temperature: -20°C to +60°C Maximum Humidity: 95%RH – non condensing Color/Case Material: White/Flame Retardant Polycarbonate Ingress Protection Rating: IP42 Dimensions: 100 mm diameter * 42 mm height Coverage Area : 112 m2 (according to BS 5839) Certificate: LPCB, VdS, EN54 Weight: 105 g Accessories: Tag plate	33
3	Addressable Heat Detector Supplier/Origin/Model: Apollo / U.K / 55000-400APO + 45681-210APO Operating Voltage: 17 - 28 VDC Quiescent Current: 300 µA Alarm LED Current: 4 mA Operating Temperature: -20°C to +70°C Maximum Humidity: 95%RH – non condensing Color/Case Material: White/Flame Retardant Polycarbonate Ingress Protection Rating: IP54 Dimensions: 100 mm diameter * 42 mm height Coverage Area: 56.3 m2 (according to BS 5839) Certificate: LPCB, VdS, EN54 Weight: 105 g Accessories: Tag plate	2
4	Addressable Manual Call Point Supplied/Model: Apollo / U.K / SA5900-908APO Status Display: LED Operating Voltage: 17 - 35 VDC Quiescent Current: 100 µA Operating Temperature Range: -40°C to +70°C Maximum Humidity: 95%RH–non condensing Operating element: Resettable element Ingress Protection Rating: IP44 Dimensions: 90 mm length * 90 mm width * 63 mm depth Color/Case Material: Red / Polycarbonate Certificate: LPCB, VdS, EN54 Weight: 180 g Accessories: Gland, Tag plate	4
5	Addressable Alarm Sounder Supplied-Origin/Model: Apollo / U.K / 55000-274APO Operating Voltage: 18 - 28 VDC Quiescent Current: 330 µA Operating Current : 5 mA Operating Temperature Range: -20°C to +70°C Maximum Sound Output: Up to 100 dBA Maximum Humidity: 75%RH–non condensing(at 40°C) Ingress Protection Rating: IP66 Color/Case Material: Red/Flame Retardant Polycarbonate Dimensions: 110 mm length * 110 mm width * 113 mm depth Certificate: LPCB, VdS, EN54 Weight: 294 g Accessories: Gland, Tag plate	4
6	Addressable Input / Output Module Supplier -Origin/Model: Apollo / U.K / SA4700-102APO Operating Voltage: 17 - 35 VDC Quiescent Current: 500 µA Relay Output Contact Rating: 1 A at 30 VDC or AC Operating Temperature Range: -40°C to +70°C Maximum Humidity: 95%RH–non condensing Ingress Protection Rating: IP52 Dimensions: 60 mm height * 150 mm width * 90 mm depth Certificate: LPCB, VdS, EN54 Weight: 244 g Accessories: Gland, Tag plate	8
7	Addressable Beam Detector Supplier/Origin/Model: Apollo /UK/ SA7100-100APO Sensing Element: Optical Beam Detection Operating Voltage: 17-35 VDC Operating Current: 10 mA Operating Distance: 8 – 100 m Operating Temperature Range: -10°C to +55°C Including: Controller and 1 Reflector covers distance 8-100 m Maximum Humidity: 93%RH–non condensing Ingress Protection Rating: IP54 Color/Case Material: Grey/Flame Retardant Polycarbonate Dimensions: 131mm height * 134 mm width Certificate: EN54-7, LPCB, Vds Weight: 1637 g Accessories: Gland, Tag plate	10

8	<p>Aspirating Smoke Detector (Two Channel)</p> <p>Supplier/Origin/Model: Securiton/Germany/ASD535-2</p> <p>Include:</p> <ul style="list-style-type: none"> · 2 x Smoke Sensing Device (Model: SSD 535-3) · 2 x Dust Filter (Model: DFU 911S) <p>Ingress Protection: IP54</p> <p>Voltage Level: 12.4-27Vdc</p> <p>Response Time: Depend on sampling pip length</p> <p>Quiescent Current: 260 – 290 mA</p> <p>Alarm Current (Consumption): 260 – 290 mA</p> <p>Sensitivity: 0.002%/m to 10%/m</p> <p>Output signal: Dry Contact</p> <p>Max single Sampling Pipe length: 2 x 300 m</p> <p>Sampling Pipe Inlets: 2 Monitoring Area: Max. 5760 m2 Accessories: Gland, Tag plate</p>	2
8.1	<p>External Power Supply (230Vac / 24Vdc, 5A) + 2 x battery backup</p> <p>Supplier/Origin/Model: Local Market</p>	1
8.2	Junction Box for Power Supply Supplier/Origin/Model: Local Market Accessories: Gland, Tag plate	1
8.3	PVC Pipe, Elbow, Clips, Clamps Supplier/Origin/Model: Local Market	1
9	<p>Open Path Flammable Gas Detector</p> <p>Supplier – Origin/Model: Spectrex –U.S.A /SafEye Series 903 , model 903</p> <p>Measuring Gas: a wide range of gaseous hydrocarbons, such as: Alkanes, Alkenes (C1-C8), Alcohols, LNG, LPG, Ethylene, etc.</p> <p>Response Time: T90 - 3 sec</p> <p>Current Output: 4-20mA</p> <p>Measure Range: 0-100% LEL (Flammable)</p> <p>Body Material: Stainless Steel 316L</p> <p>Power Supply: 24 VDC nominal (18-32 VDC)</p> <p>Temperature Range: -55°C to 65°C</p> <p>Operating Humidity: up to 95% (Non-Condensing)</p> <p>Power Consumption: 150mA (300 mA Peak)</p> <p>Accuracy: ±5% of full scale or ±10% of the reading, whichever is greater</p> <p>Sensitivity Range: 0 - 5 LEL.m</p> <p>Main Component : ATEX/IECEX Approved</p> <p>Safety Integrated Level: SIL2 Certification</p> <p>Hazardous Area Approval : Ex d e ib [ib Gb] IIB + H2 T4 Gb</p> <p>IP Rating: IP66 ,IP67</p> <p>Electrical Connection: 2 x M25 x 1.5 mm ISO</p> <p>Detection Range: 35 -100m</p> <p>Weight: 4.2kg detector ,4.6kg source , 1.9 kg tilt mount</p> <p>Dimension: 210 x 145 x 154 mm detector , 255 x 135 x 175 mm source , 120 x 120 x 140 mm tilt mount</p> <p>Tilt Mount Part Number : 799640 x 2 (For Transmitter and Receiver) Accessories: SS Name Plate , 2 xM25 to M20 converter</p> <p>(Note : There is no need to junction box for cabling between transmitter & receiver)</p> <p>Accessories: Bracket, Gland, Tag plate</p>	1
10	<p>Flammable Gas Detector</p> <p>Supplier -Origin/Model: Simin Gaman Aria/Iran/ SGD-2000-CombCata</p> <p>Sensor: Catalytic sensor for Hydrocarbon & Hydrogen</p> <p>Measuring type: Diffusion type</p> <p>Range: 0 – 100 % LEL</p> <p>Response Time: T90 <15 Sec, T50 < 8 sec</p> <p>Accuracy: < +3% Full scale</p> <p>Sensitivity: 0.1 %LEL, Repeatability: <+2% Full Scale</p> <p>Parameter control: Remote Control, Magnet</p> <p>Output signal: 4 to 20 mA standard signal, 3-wire</p>	1

	Power supply: 16 V DC to 30 V DC @ 400 mA max Temperature: -20 °C to +55 °C , Humidity: < 95% RH (w/o condensate) Type of cable: 3x1.5 mm2 for 4-20 mA signal, Entry: 2 x M20 Material: Body Aluminum Die-cast Epoxy Coated, Sensor casing: SS 316 Certification: II 2G Ex db IIC T6 Gb ATEX Approved Ingress Protection: IP65, Including Gland and plug Accessories: Bracket, Gland, Tag plate	
11	Flame Detector Supplier -Origin/Model: Simin Gaman Aria/Iran/ SFD-1000 Ambient Temperature: -40 to +75 °C Relative Humidity: Up to 95% Hazardous Area: Ex d IIC, T6 Ingress Protection: IP68 Field of View: Horizontal 90 °, Vertical 90 ° (120°) Detection Type: UV/IR, UV185-260 nm; IR:4.5-4.8 µm Operating Voltage: 24 VDC Signal: 4-20 mA, 3-wire, M20 Cable Entry Communication Protocol: Conventional Body and Housing Material: Body Aluminum Die-cast Epoxy Coated Case Color: Red Sensitivity Ranges: 0.1 m2 n-Heptane pan fire from 25 m Response Time: 5 Sec Approvals: ATEX Accessories: Bracket, Gland, Tag plate	2
11.1	External Power Supply (230Vac / 24Vdc, 5A) + 2 x battery backup Supplier/Origin/Model: Local Market	1
11.2	Junction Box for Power Supply Supplier/Origin/Model: Local Market Accessories: Bracket, Gland, Tag plate	1
12	Junction Box for Addressable Loops (Including 12 Terminals) Supplier/Origin/Model: Local Market Accessories: Bracket, Gland, Tag plate	16
13	2 X 1.5 mm2 Fire Resistant Armored Cable Supplier: Local Market	12000 m
14	2 X 1.5 mm2 Fire Resistant Non-Armored Cable Supplier: Local Market	2000 m
15	Fiber Optic Cable (Single Mode with Pigtail, Patch Cord,) Supplier: Local Market	2000 m
16	Bulk material (as required)	1

Table 2

Row	Description	Quantity
Main Rack		
1	SIL3 Base Rack S81-HS with Display, Microprocessor, Buzzer, Keyboard and 1 CPU U1002-1 Complete with T8004-1 & T8007 (Included in S81 Rack Base)	1
2	Redundant CPU Module U1002-1	1
S81 Expansion Rack with I/O Modules		
3	19"-3HE I/O Cards Rack with 13 Slots for I/O Modules + Bus Controller E2002-1	2
4	Analogue Addressable Device Control Card- Apollo Protocol - Model : F7009-1	22
5	CCT4 ,5 m. Cable	22
6	TCP-IP to Fiber Optic Convertor – Model: EDS-408 Moxa	2
7	RS485 To Fiber Optic Convertor – Model: TCF-142 Moxa	2
8	Blank Panel	4
9	Configuration Software Pro S81	1
10	Power Supply (230Vac / 24Vdc) - 10A	1
11	Wall Mounted Cabinet-IP42, Local Market (Locally)	1

Description		Price
1	Engineering, As built, Final books, Operation & Maintenance Doc.	
2	Procurement, Supply, Transportation & Other related cost	
3	Installation, Pre-commissioning,Commissioning & Tests	
4	Providing conditions for cabling & cabling	
5	Spare parts	
6	Fully training	
Total price		