

„Balkan Route: A Welcoming Transit - AID 012590/02/7”
„Balkanska ruta: Prijem u tranzitu (BRAT) – AID 012590/02/7”

LOT 7: Tehničko održavanje skladišta u Sarajevu – elektro radovi

LOT 7: Technical maintenance of the warehouse in Sarajevo – electro works

AB Predmjer radova za tehničko uređenje skladišta u Sarajevu - elektro radovi

Bill of quantities for the technical maintenance of the warehouse in Sarajevo - electro works

ELEKTROINSTALACIJE
ELECTRICAL INSTALLATIONS

U svim slijedećim stavkama, uz uvažavanje i specifičnog opisa u samoj stavci, podrazumijeva se:

nabavka, isporuka do gradilišta i montaža specificiranog materijala, uključujući sve potrebne tehnološke operacije, sav potreban sitni montažni materijal, nadalje sva potrebna električna spajanja do pune funkcionalnosti uključujući sav potreban sitni spojni materijal kao i svi pripadni pripremni odnosno završni radovi uključujući čišćenja i odnošenja viška i zaostalog materijala i slično.

Instalacije moraju biti izvedene u skladu s važećim Pravilnicima Federacije Bosne i Hercegovine. Sva oprema mora biti atestirana od strane nadležnog zavoda za normizaciju odnosno odgovarajućih pravnih subjekata i imati prateću dokumentaciju na jednom od službenih jezika BiH.

In all of the following items, with due consideration to the specific description within the item itself, it is implied that: procurement, delivery to the construction site, and installation of the specified materials, including all necessary technological operations, all required small installation materials, as well as all necessary electrical connections to full functionality, including all necessary small connection materials, as well as all preparatory or finishing works, including cleaning and removal of surplus and leftover materials, and similar.

The installations must be carried out in accordance with the applicable Regulations of the Federation of Bosnia and Herzegovina. All equipment must be certified by the relevant standardization institute or appropriate legal entities and must have accompanying documentation in one of the official languages of Bosnia and Herzegovina.

A JAKA STRUJA
HIGH VOLTAGE

I DEMONTAZNI RADOVI I ISPITIVANJE
POSTOJEĆIH INSTALACIJA
DEMOLITION WORK AND TESTING OF
EXISTING INSTALLATIONS

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
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1	2	3	4	5	6,00
1	<p>Izvršiti ispitivanje veza odraznih instalacionih kablova iz GRO , njihovu identifikaciju, te kablove koji napajaju rasvjetu i utičnice u kancelarijama prizemlja i sprat lijevo od ulaza u halu predvidjeti za korištenje i spajanje na novi GRO</p> <p>Perform testing of outgoing connection cables from the main distribution board (GRO), identify them, and designate the cables that supply lighting and outlets in the offices on the ground floor and left side of the upper floor (from the entrance to the hall) for use and connection to the new GRO.</p>	Nh	5		
2	<p>Izvršiti demontažu postojećeg razvodnog ormara, dijela kablova koji su korišteni za napajanje rasvjete u hali, kao i ostalih instalacija koje se napuštaju</p> <p>Perform the dismantling of the existing distribution cabinet, including the cables used for powering the lighting in the hall, as well as other installations that are being abandoned.</p>	Nh	8		

	UKUPNO I) DEMONTAŽNI RADOVI I ISPITIVANJE POSTOJEĆIH INSTALACIJA TOTAL I) DEMOLITION WORK AND TESTING OF EXISTING INSTALLATIONS	
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II RAZVODNI ORMARI DISTRIBUTION BOARDS

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
1	<p>Isporuka i montaža na zidu hale, na mjestu prikazanom na osnovi, glavnog razvodnog ormara, dimenzija prilagođenih ugrađenoj opremi, izrađen od dva puta dekapiranog lima ofarbanog temeljnom i završnom bojom elektrostatskim postupkom, RAL 7032, stepen mehaničke zaštite IP54, projektne oznake GRO. U GRO je ugrađena sljedeća oprema renomiranih proizvođača ETI, HAAGER, SCHNEIDER ili sl.: Sve kompletno</p> <p>Delivery and installation of the main distribution board on the wall of the hall, at the location shown on the layout, with dimensions adapted to the installed equipment. The cabinet is made of double-decapitated sheet metal, painted with a primer and finish coat using an electrostatic process, RAL 7032, with a mechanical protection rating of IP54, project label GRO. The following equipment from reputable manufacturers such as ETI, HAAGER, SCHNEIDER, or similar is installed in the GRO: Everything complete</p>	kom pcs	1		
	<p>- strujno zaštitna sklopka FID 40/0,03A, 4p - residual current circuit breaker (RCCB) FID 40/0.03A, 4-pole.</p>	kom pcs	1		

	- jednopolni automatski osigurač 20A - single-pole circuit breaker 20A	kom pcs	1		
	- jednopolni automatski osigurač 16A - single-pole circuit breaker 16A	kom pcs	7		
	- jednopolni automatski osigurač 10A - single-pole circuit breaker 10A	kom pcs	9		
	- sitni potrošni materijal, kanalice POK, stezaljke P/F žica i ostalo - small consumables, POK conduits, P/F wire terminals, and other materials.	kompl pack	1		
	Sve kompletno Fully completed	kom pcs	1		
2	Izrada izvoda uzemljenja za GRO uz upotrebu 10 m P/F žice 1x6 mm ² , stopice Cu 6mm ² 1 komad, komada trake FeZn 20x3mm od 15 cm koju treba zavariti na stub čelične konstrukcije hale, i jednog ukrasnog komada traka-traka Manufacturing of the grounding lead for the GRO using 10 meters of P/F wire 1x6 mm ² , one copper (Cu) lug 6 mm ² , pieces of FeZn strip 20x3 mm, 15 cm long, to be welded to the steel structure column of the hall, and one cross-connecting piece of strip-to-strip.	kompl pack	1		
3	Isporučka i montaža izolacionog tepiha 1 kV, širine 0,8 metara Delivery and installation of 1 kV insulating mat, 0.8 meters wide.	m m	1		
4	Isporučka i montaža aparata za gasenje požara, CO2, 5 kg Delivery and installation of a 5 kg CO2 fire extinguisher.	kom pcs	1		
5	Isporučka i ugradnja seta prve pomoći Delivery and installation of a first aid kit.	kom pcs	1		
6	Ostali sitni materijal Other small materials.	pšl lumps um	1		
UKUPNO I) RAZVODNI ORMARI TOTAL I) DISTRIBUTION BOARDS					

III KABLOVI CABLES

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
1	<p>svjetiljki i panik svjetiljki tip PP00-Y 3x1,5mm². Kablovi se polažu u tvrdim PN cijevima koje se postavljaju na obujmicama po konstrukciji hale. U cijenu je uključen kompletan materijal za montažu i spajanje kablova i razvodne kutije. Prosječna dužina po izvodu 11m</p> <p>Delivery and installation of cables for powering lights and emergency lights, type PP00-Y 3x1.5mm². The cables will be installed in rigid PN pipes, mounted on clamps along the hall's structure. The price includes all materials for cable installation, connections, and distribution boxes. The average length per circuit is 11</p>	kom pcs	19		
2	<p>rasvjete, tip PP-Y 3x1,5mm². Kablovi se polažu p/ž u kancelarijama, mokrom čvoru i kuhinji u prostorijama desno od ulaza u halu. U cijenu je uključen kompletan materijal za montažu i spajanje kablova i razvodne kutije. Prosječna dužina po izvodu 7m</p> <p>Delivery and installation of cables for powering lighting, type PP-Y 3x1.5mm². The cables will be installed in protective flexible conduit (p/ž) in the offices, wet room, and kitchen in the rooms to the right of the entrance to the hall. The price includes all materials for cable installation, connections, and distribution boxes. The average length per circuit is 7 meters.</p>	kom pcs	10		
3	<p>utičnica, tip PP00-Y 3x2,5mm². Kablovi se polažu u tvrdim PN cijevima koje se postavljaju na obujmicama po konstrukciji hale. U cijenu je uključen kompletan materijal za montažu i spajanje kablova i razvodne kutije. Prosječna dužina po izvodu 18m</p> <p>Delivery and installation of cables for powering outlets, type PP00-Y 3x2.5mm². The cables will</p>	kom pcs	4		

4	<p>utičnica tip PP-Y 3x2,5mm². Kablovi se polažu p/ž u kancelarijama, mokrom čvoru i kuhinji. U cijenu je uključen kompletan materijal za montažu i spajanje kablova i razvodne kutije. Prosječna dužina po izvodu 7m</p> <p>Delivery and installation of cables for powering outlets, type PP-Y 3x2.5mm². The cables will be installed in protective flexible conduit (p/ž) in the offices, wet room, and kitchen. The price includes all materials for cable installation, connections, and distribution boxes. The average length per circuit is 7 meters.</p>	kom pcs	12		
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	UKUPNO III) KABLOVI TOTAL III) CABLES	
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IV RASVJETA LIGHTING

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
1	<p>Isporuka i ugradnja svjetiljke nadgradne vodotijesne LED svjetiljke u klasi zaštite IP65, IK08, minimalnog svjetlosnog toka min: 8600 lm, maksimalne snage: 72 W uz min. efikasnost od: 119 lm/W. Boja svjetlosti 4000K. Svjetiljka posjeduje opal polikarbonat (UV) difuzor koji osigurava ujednačeno osvjetljenje bez vidljivih mrlja. Svjetiljka u flex tehnologiji omogućava lokalnu regulaciju snage i količine svjetla u tri koraka: (FLEX1: 8600 lm (72W), FLEX2: 6300 lm (50W), FLEX3: 4200 lm (33W). Uz ponudu dostaviti: Tehnički list za svjetiljku i CE certifikat od strane proizvođača. Svjetiljka mora imati min. 5 godina garancije uz min. 50.000h L80 pri temperaturi od 25°C. Tip kao: JULIE FLEX 1500 8600 840 96700019. Proizvođač: Zumtobel Group (Thorn Eco)</p> <p>Delivery and installation of an overhead, waterproof LED light fixture with IP65 protection class, IK08, minimum luminous flux of min: 8600 lm, maximum power: 72 W with a minimum efficiency of: 119 lm/W. Light color: 4000K. The fixture features an opal polycarbonate (UV) diffuser that ensures uniform illumination without visible spots. The fixture in flex technology allows local power and light output regulation in three steps: (FLEX1: 8600 lm (72W), FLEX2: 6300 lm</p>	kom pcs	15		

2	<p>Isporuca i ugradnja nadgradne (strop i zid) sigurnosne svjetiljke za antipanično osvjetljenje sa LED izvorom svjetlosti maksimalno 4,8 W, minimalno 269 lm, efikasnost svjetiljke min. 56 lm/W. U svjetiljci je baterija autonomije 3 sata, fleksibilna instalacija zbog varijabilnih ulaznih točaka kablova; prikaz statusa svjetiljke preko statusne LED diode. Step en zaštite IP65 i IK08. Piktogrami su vidljivi sa udaljenosti od 20m. Napomena; Uz svjetiljku isporučiti odgovarajući piktogram. Uz ponudu dostaviti: Tehnički list za svjetiljku i CE certifikat od strane proizvođača. Svjetiljka mora imati min. 5 godina garancije uz min. 50.000h L80 pri temperaturi od 25°C. Tip kao: SAM 20M SELFTEST E3 LiFePO4. Proizvođač: Zumtobel Group</p> <p>Delivery and installation of an overhead (ceiling and wall) emergency light with LED light source, maximum 4.8W, minimum 269 lm, lamp efficiency minimum 56 lm/W. The lamp includes a battery with 3 hours of autonomy, flexible installation due to variable cable entry points, and a status indicator via an LED status light. Protection rating IP65 and IK08. Pictograms are visible from a distance of 20m. Note: The appropriate pictogram must be supplied with the light. Along with the offer, provide: Technical data sheet for the light. CE certificate</p>	kom pcs	3		
3	<p>Isporuca i ugradnja nadgradne (strop i zid) svjetiljke sa LED izvorom svjetlosti, LED PANEL 18W sa senzorom pokreta, IP 54. (mokri čvor i kuhinja)</p> <p>Delivery and installation of an overhead (ceiling and wall) light with an LED light source, 18W LED PANEL with motion sensor, IP 54 (for wet room and kitchen)</p>	kom pcs	4		
3	<p>Isporuca i ugradnja nadgradne (strop i zid) svjetiljke sa LED izvorom svjetlosti, LED PANEL 22W, IP 54</p> <p>Delivery and installation of an overhead (ceiling and wall) light with an LED light source, 22W LED PANEL IP 54</p>	kom pcs	16		

	UKUPNO IV) RASVJETA TOTAL IV) LIGHTING	
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v INSTALACIONI MATERIJAL
INSTALLATION MATERIAL

Red. broj	Opis Description	JM Unit	Količin a Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV- a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00

1	Isporučka i montaža nadgradne šuko utičnice 16A, 250V, IP55 -boja bijela. Delivery and installation of an overhead SCHUKO socket, 16A, 250V, IP55, white color.	kom pcs	8		
2	Isporučka i montaža nadgradne jednopolne mikrosklopke 10A, 250V IP 55 za upravljanje rasvjetom Delivery and installation of an overhead single-pole micro switch, 10A, 250V, IP55, for controlling lighting.	kom pcs	6		
3	Isporučka i montaža ugradne šuko utičnice 16A, 250V, -boja bijela. Delivery and installation of an embedded SCHUKO socket, 16A, 250V, white color.	kom pcs	8		
4	Isporučka i montaža ugradne jednopolne mikrosklopke 10A, 250V IP 55 za upravljanje rasvjetom Delivery and installation of an embedded single-pole micro switch, 10A, 250V, IP55, for controlling lighting.	kom pcs	6		
5	Isporučka i montaža ugradnog jednopolnog termičkog prekidača 20A, 250V IP 55 za upravljanje tlačnim bojlerom 50l Delivery and installation of an embedded single-pole thermal switch, 20A, 250V, IP55, for controlling a 50L pressure boiler.	kom pcs	1		
5	Ostali sitni materijal Other small materials.	pšl lumps um	1		

	UKUPNO V) INSTALACIONI MATERIJAL TOTAL V) INSTALLATION MATERIAL	
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VI ISPITIVANJE INSTALACIJA
INSTALLATION TESTING

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
1	Izvršiti potrebnu kontrolu, ispitivanje i mjerenje na elektroenergetskim instalacijama. Preglede, ispitivanje, mjerenje i izradu ispitnih protokola obavlja firma koja je ovlaštena od strane odgovarajućeg Federalnog ministarstva. Ovom stavkom obuhvacene su kompletne elektroenergetske instalacije. Pregled i ispitivanje obuhvataju slijedeće: Perform the necessary inspection, testing, and measurements on the electrical installations. The inspection, testing, measurement, and preparation of test protocols must be carried out by a company authorized by the relevant Federal Ministry. This item covers the complete electrical installations. The inspection and testing include				
	* pregled napojnih vodova * Inspection of power supply lines.				

	* pregled vodova sekundarne instalacije * Inspection of secondary installation wiring.				
	* pregled iluminacionih izvora * Inspection of lighting sources.				
	* ispitivanja i mjerenja otpora izolacije i otpora petlje kvara na instalaciji * Testing and measurement of insulation resistance and fault loop resistance in the installation				
	* predaja atesta o izvršenim mjerenjima * Issuance of the certificate for completed measurements.				
	* predaja garantnih listova i atesta na ugrađenu opremu * Submission of warranty certificates and certificates for the installed equipment.				
	* predaja prospektne dokumentacije za ugrađenu opremu * Submission of the product documentation for the installed equipment.				
	* predaja uputstava za upotrebu uređaja i instalacija * Submission of user manuals for the devices and installations.				
	* predaja i postavljanje jednopolnih i visepolnih sema izvedenog stanja razvodnih ploca / razdjelnika * Submission and installation of single-pole and multi-pole diagrams of the as-built distribution boards / splitters				
	* predaja i postavljanje spiska ugrađene opreme/materijala u razvodnim plocama / razdjelnicima * Submission and installation of the list of installed equipment/materials in the distribution boards / splitters				
	Sve kompletno Fully completed	kpl pack	1		

	UKUPNO V) ISPITIVANJE INSTALACIJA TOTAL V) INSTALLATION TESTING	
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A	REKAPITULACIJA JAKE STRUJE RECAPITULATION OF HIGH VOLTAGE	
I	DEMONTAŽNI RADOVI I ISPITIVANJE POSTOJEĆIH INSTALACIJA DEMOLITION WORK AND TESTING OF EXISTING INSTALLATIONS	
II	RAZVODNI ORMARI DISTRIBUTION BOARDS	
III	KABLOVI CABLES	
IV	RASVJETA LIGHTING	
V	INSTALACIONI MATERIJAL INSTALLATION MATERIAL	
VI	ISPITIVANJE INSTALACIJA INSTALLATION TESTING	
VII	Projektovanje izvedenog stanja (OBAVEZA NADZORNOG INŽINJERA) Design of As-Built Conditions (RESPONSIBILITY OF THE SUPERVISING ENGINEER)	
UKUPNO JAKA STRUJA (KM): TOTAL HIGH VOLTAGE (KM):		

U svim slijedećim stavkama, uz uvažavanje i specifičnog opisa u samoj stavci, podrazumijeva se:

nabavka, isporuka do gradilišta i montaža specificiranog materijala, uključujući sve potrebne tehnološke operacije, sav potreban sitni montažni materijal, nadalje sva potrebna električna spajanja do pune funkcionalnosti uključujući sav potreban sitni spojni materijal kao i svi pripadni pripremni odnosno završni radovi uključujući čišćenja i odnošenja viška i zaostalog materijala i slično.

Instalacije moraju biti izvedene u skladu s važećim BiH Pravilnicima. Sva oprema mora biti atestirana od strane Bosanskohercegovačkog zavoda za normizaciju odnosno odgovarajućih pravnih subjekata i imati prateću dokumentaciju na jednom od važećih jezika BiH!

In all of the following items, with due consideration to the specific description within the item itself, it is implied that: procurement, delivery to the construction site, and installation of the specified materials, including all necessary technological operations, all required small installation materials, as well as all necessary electrical connections to full functionality, including all necessary small connection materials, as well as all preparatory or finishing works, including cleaning and removal of surplus and leftover materials, and similar.

The installations must be carried out in accordance with the applicable Regulations of Bosnia and Herzegovina. All equipment must be certified by the Bosnia and Herzegovina Institute for Standardization or the relevant legal entities and must have accompanying documentation in one of the official languages of Bosnia and

B SLABA STRUJA LOW VOLTAGE

I SISTEM VATRODOJAVE FIRE ALARM SYSTEM

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
	<p>Isporuka i montaža mikrop procesorske vatrodojavne centrale tipa FC721 Siemens - CerberusPro ili slična sljedećih karakteristika:</p> <p>Delivery and installation of a microprocessor-based fire alarm control panel, model FC721 Siemens - CerberusPro or similar, with the following specifications:</p> <ul style="list-style-type: none"> - standardni alfanumerički LCD display za kontrolu stanja sistema, upravljanje i vođenje dijaloga - Standard alphanumeric LCD display for system status monitoring, control, and dialogue management. 				

1.	<ul style="list-style-type: none"> - jedna analogno adresirana petlja od max 126 javljača, svaki od elermenata na petlji može biti u posebnoj zoni, na petlju se mogu priključivati i adresibilni alarmni uređaji (sirene i sl.) - One analog addressable loop with a maximum of 126 detectors, each element on the loop can be in a separate zone, and addressable alarm devices (sirens, etc.) can also be connected to 				
	<ul style="list-style-type: none"> - RS232 kartica za priključenje printera - RS232 card for connecting a printer. 				
	<ul style="list-style-type: none"> - 2 izlaza za daljinski prenos (alarm i greška), 30VDC-1A - 2 outputs for remote transmission (alarm and fault), 30VDC-1A 				
	<ul style="list-style-type: none"> - 2 nadzirana izlaza 24VDC/2A za sirene - 2 monitored outputs 24VDC/2A for sirens. 				
	<ul style="list-style-type: none"> - 2 nadzirana izlaza 24VDC/2A (RT alarm, RT fault) - 2 monitored outputs 24VDC/2A (RT alarm, RT fault). 				
	<ul style="list-style-type: none"> - 4 programabilnih ulaza/izlaza - 4 programmable inputs/outputs. 				
	<ul style="list-style-type: none"> - rezervno napajanje za 24 satni neprekidni rad u slučaju nestanka električne energije 12V/7Ah - Backup power supply for 24-hour continuous operation in case of power failure, 12V/7Ah. 				
	<ul style="list-style-type: none"> - 13000 memorisanih zadnjih događaja u bazi podataka po prioritetima i hronologiji - 13,000 most recent events stored in the database, sorted by priority and chronology. 				
	<ul style="list-style-type: none"> - napon napajanja 115/230VAC, 50Hz - Power supply voltage 115/230VAC, 50Hz. 				
	<ul style="list-style-type: none"> - dimenzije (SxVxD) 430x398x165mm - Dimensions (W x H x D) 430 x 398 x 165 mm. 				
	<ul style="list-style-type: none"> - kućište u zaštiti IP30 - Enclosure with IP30 protection rating. 				
	<ul style="list-style-type: none"> - automatsko prebacivanje ljeto/zima - automatic switching summer/winter 				
	<ul style="list-style-type: none"> - programiranje vremenske i ostale (ulazno/izlazne) funkcije centrale (npr uljučenje sirena nakon 3 min, isključenje jednog klima sistema nakon 30 sec a ostalih nakon 3 minute i dr.) - fully freely programmable all time and other (input/output) functions of the control panel (e.g. activation of siren after 3 minutes, deactivation of one air conditioning system after 30 seconds and others after 3 minutes, etc.) 				
	Sve komplet Fully completed	kpl pack	1		

2.	<p>isporuka telefonskog komunikatora sa govornom porukom, 4 ulaza sa četiri različite poruke u trajanju od po 16 sekundi, 8 telefonskih brojeva za pozivanje, tip B-TEL2, Bentel</p> <p>Delivery of a telephone communicator with a voice message, 4 inputs with four different messages, each lasting 16 seconds, 8 telephone numbers for dialing, type B-TEL2, Bentel</p>	kom pcs	1		
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3.	<p>Isporuka optičko-dimnog analogno adresibilnog javljača požara sa mogućnošću slanja standardnog i signala visoke osjetljivosti centralnom uređaju, sa izolatorom kvara na petlji ugrađenim u samom javljaču, visoka otpornost na vlagu, ugrađen svjetlosni indikator za signalizaciju alarma na licu mjesta, tip OP720A, sa podnožjem za instalaciju p/ž ili n/ž tip DB721 i zaštitnom kapom, Siemens - CerberusPro ili sličan</p> <p>Delivery of an optical-smoke analog addressable fire detector with the ability to send both standard and high sensitivity signals to the central unit, with a fault isolator on the loop integrated into the detector, high resistance to moisture, built-in visual indicator for on-site alarm signaling, type OP720A, with a base for installation (ceiling or wall) type DB721 and protective cap, Siemens - CerberusPro or similar.</p>	kom pcs	10		
4.	<p>Isporuka natpisne pločice za automatski detektor požara tip FDBZ291, Siemens ili slična</p> <p>Delivery of a signage plate for the automatic fire detector, type FDBZ291, Siemens or similar.</p>	kom pcs	10		
5.	<p>direktnim aktiviranjem (razbijanje stakla na javljaču prouzrokuje alarm), sa integrisanim izolatorom kvara petlje, u crvenom kućištu za montažu u suhe i čiste prostore, IP44, tip FDME221 u kućištu FDMH291-R, Siemens - CerberusPro</p> <p>Delivery of a manual addressable fire detector with direct activation (breaking the glass on the detector triggers the alarm), with an integrated fault isolator for the loop, in a red housing for installation in dry and clean environments, IP44, type FDME221 in housing FDMH291-R, Siemens - CerberusPro or similar.</p>	kom pcs	1		

6.	<p>bljeskalicom za rad u vatrodojavnoj petlji, ugrađen izolator petlje u svakom uređaju, bez dodatnog izvora napajanja, tip FDS229-R,99 dB na 1 m, frekvencija bljeskanja 1Hz crvene boje, vrsta i jačina tona podesivi, u zaštiti IP43, sa podnožjem FDB221, Siemens - CerberusPro ili sličan</p> <p>Delivery and installation of an addressable siren with a strobe light for operation in a fire alarm loop, with an integrated loop isolator in each device, no additional power supply required, type FDS229-R, 99 dB at 1 m, strobe frequency 1Hz, red color, adjustable tone type and volume, with IP43 protection, including base FDB221, Siemens - CerberusPro or similar.</p>	kom pcs	1		
8.	<p>vatrootpornog kabla JB Y(St)Y 2x2x0,8 za povezivanje adresabilnih elemenata vatrodojavnih petlji. Kabl se polaže u negorivoj zaštitnom giblivoj PVC cijevi. Prosječno se po izvodu polaže 14 metara kabla. Sve komplet.</p> <p>Delivery and installation of a fire-resistant communication cable JB Y(St)Y 2x2x0.8 for connecting addressable elements of fire alarm loops. The cable is installed in a non-combustible flexible PVC conduit. On average, 14 meters of cable are installed per circuit. Complete installation.</p>	kpl pack	11		
9.	<p>Isporuka i polaganje kabla PP-Y 3x1,5 za napajanje adresabilne vatrodojavne centrale. Kabl se polaže u zaštitnom negorivom PVC giblivoj crijevu p/ž. Sve komplet.</p> <p>Delivery and installation of PP-Y 3x1.5 cable for powering the addressable fire alarm control panel. The cable is installed in a protective non-combustible flexible PVC conduit (ceiling or wall). Complete installation.</p>	m m	7		
10.	<p>Sitni nespecificirani materijal</p> <p>Small unspecified materials.</p>	kpl pack	1		

11.	<p>Spajanje kablova na strani vatrodojavne centrale, postavljanje javljača požara u pripremljena podnožja sa uvrtačem na visine do 12m, konfigurisanje sistema, programiranje centrale, parametriranje automatskih javljača požara na početne uslove, unos korisničkih tekstova, ispitivanje sistema, obuka osoblja korisnika, izdavanje zapisnika, garancije i uputstva za upotrebu na bosanskom jeziku</p> <p>Connection of cables on the fire alarm control panel side, installation of fire detectors into prepared bases with a screw at heights up to 12m, system configuration, programming of the control panel, parameterization of automatic fire detectors to initial conditions, input of user texts, system testing, user staff training, issuance of reports, warranties, and user manuals in Bosnian</p>	pšl lumps um	1		
12.	<p>Prvo ispitivanje sistema vatrodojave od strane nadležne institucije sa izdavanjem zapisnika o ispitivanju i Atesta na sistem</p> <p>First system testing of the fire alarm by the competent authority, with the issuance of a test report and system certification (Atest).</p>	pšl lumps um	1		
UKUPNO I) SISTEM VATRODOJAVE TOTAL I) FIRE ALARM SYSTEM					

INSTALACIJA VIDEONADZORNOG SISTEMA

II VIDEO SURVEILLANCE SYSTEM INSTALLATION

Red. broj	Opis Description	JM Unit	Količina Number of units	Jedinična cijena bez PDV-a (KM) Unit cost VAT excluded (KM)	Ukupno bez PDV-a (KM) Total VAT excluded (KM)
1	2	3	4	5	6,00
1.	<p>Isporuka i ugradnja mrežnog video rekordera slijedećih karakteristika: Penta-brid video snimač sa 8 analogna kanala plus 8 dodatnih ip kanala rezolucije do 8MP. AI tehnologija. Maksimalna rezolucija snimanja 8MP. Frame rate: 4K (1fps-7fps); 6MP (1fps-10fps); 5MP (1fps-12fps); 4K/N, 4MP/3MP (1fps-15fps); 4M-N/1080P (1fps-25/30fps).Bandwidth In 128Mbps, Bandwidth Out 128Mbps. Kompresija snimanja: H.265+. 1x VGA, 1x HDMI. 1x audio in, 1x audio out. 1x RJ45 10M/100M/1000M mrežni interfejs. 1x USB 2.0, 1x USB 3.0. RS485 komunikacija. 1HDD maksimalnog kapaciteta 16TB. Face Recognition, Perimeter Protection, SMD Plus. Tp kao Dahua XVR5108HS-4KL-I3</p> <p>Delivery and installation of a network video recorder with the following specifications: Penta-brid video recorder with 8 analog channels plus 8 additional IP channels with a resolution of up to 8MP. AI technology. Maximum recording resolution: 8MP. Frame rate: 4K (1fps-7fps); 6MP (1fps-10fps); 5MP (1fps-12fps); 4K/N, 4MP/3MP (1fps-15fps); 4M-N/1080P (1fps-25/30fps). Bandwidth In 128Mbps, Bandwidth Out 128Mbps. Recording compression: H.265+. 1x VGA, 1x HDMI, 1x audio in, 1x audio out.</p>	kom pcs	1		
2.	<p>kućištu 4 u 1 TVI/AHD/CVI/CVBS režim. 0.02Lux/F1.9, 30IRE, 0Lux IR on. Maksimalna rezolucija 1920x1080. Fiksna optika 2.8mm. Nivo zaštite IP67. DWDR. Domet IC dioda 60 metara. Integriran mikrofoni. 12v napajanje. Odgovarajuća dozna je PFA137, PFA130-E. Nosač za banderu je PFA152-E. Zidni nosač je PFB205W. Materijal: Metal i Plastika..</p> <p>Delivery and installation of 2MP HDCVI cameras in an eyeball housing with 4 in 1 TVI/AHD/CVI/CVBS mode. 0.02Lux/F1.9, 30IRE, 0Lux IR on. Maximum resolution 1920x1080. Fixed lens 2.8mm. Protection level IP67. DWDR. IR diode range 60 meters. Integrated microphone. 12V power supply. The corresponding accessories are PFA137, PFA130-E. The pole mount is PFA152-E. The wall mount is PFB205W. Material: Metal</p>	kom pcs	1		

3.	Isporučka i ugradnja 5MP HDCVI kamera u bullet kućištu 4 u 1 TVI/AHD/CVI/CVBS režim. 0.01 Lux/F1.6, 30IRE, 0 Lux IR on. Maksimalna rezolucija 2880x1620. Fiksna optika 3.6mm. Nivo zaštite IP67. DWDR. Domet IC dioda 80 metara. Integriran mikrofoni. 12v napajanje. Odgovarajuća dozna je PFA130-E ili PFA134. Nosač za banderu je PFA152-E. Materijal: Metal i Plastika. (Advanced detection of vehicle and human). 12v napajanje, PoE.	kom pcs	1		
4.	Isporučka i ugradnja nadzorne dozne za instalaciju kamera, vodootporna, aluminijska Delivery and installation of surface-mounted junction boxes for camera installation, waterproof, aluminum.	kom pcs	2		
5.	Isporučka i ugradnja konektora za direktno terminiranje na kabl cat 6 Delivery and installation of connectors for direct termination on Cat 6 cable.	kom pcs	4		
6.	Isporučka i polaganje kabla FTP 4x2x0.6 mm cat. 6 , Kabl se ugrađuje u PN cijevima fi 16 mm. Delivery and installation of FTP 4x2x0.6 mm Cat 6 cable. The cable is installed in PN pipes with a diameter of 16 mm.	m m	50		
7.	Isporučka i polaganje kabla PP 00-Y 3x1,5 mm ² u PN cijevi Delivery and installation of PP 00-Y 3x1.5 mm ² cable in PN pipes.	m m	15		
9.	Isporučka tvrdih diskova za spremanje snimaka, 4TB Delivery of hard drives for storing recordings,	kom pcs	1		
10.	Funkcionalno ispitivanje opreme za sve funkcije i puštanje u pogon. Functional testing of the equipment for all functions and commissioning.		1		

UKUPNO II) INSTALACIJA VIDEONADZORNOG SISTEMA
TOTAL II) VIDEO SURVEILLANCE SYSTEM INSTALLATION

B	REKAPITULACIJA SLABE STRUJE RECAPITULATION OF LOW VOLTAGE	
I	SISTEM VATRODOJAVE FIRE ALARM SYSTEM	
II	INSTALACIJA VIDEONADZORNOG SISTEMA VIDEO SURVEILLANCE SYSTEM INSTALLATION	
UKUPNO SLABA STRUJA (KM): TOTAL LOW VOLTAGE (KM):		

	REKAPITULACIJA SVIH RADOVA NA ELEKTROINSTALACIJAMA RECAPITULATION OF ALL WORKS ON ELECTRICAL INSTALLATIONS			
A	JAKA STRUJA HIGH VOLTAGE			
B	SLABA STRUJA LOW VOLTAGE			
	UKUPNO TOTAL			
	PDV 17% VAT 17%			
	SVEUKUPNO GROSS TOTAL			
	POPUST DISCOUNT			
	UKUPNA CIJENA SA POPUSTOM TOTAL PRICE WITH DISCOUNT			