

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

LOT 5: Tehničko održavanje skladišta u Visokom – elektro radovi

LOT 5: Technical maintenance of the warehouse in Visoko – electro works

AB Predmjer radova za tehničko uređenje skladišta u Visokom - elektro radovi
Bill of quantities for the technical maintenance of the warehouse in Visoko - electro

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 required small connection materials, as well as all associated preparatory or finishing works, including cleaning and removal of excess 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 RAZVODNI ORMARI
DISTRIBUTION BOARDS

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	<p>Isporučka i montaža na vanjskom zidu hale mjernog ormara (MO) dimenzija prilagođenih ugrađenoj opremi, izrađen od presovanog negorivog poliestera ojačanog staklenim vlaknima. Ormar treba da bude otporan na udare, savijanje i ima veliku dijalektričnu čvrstoću, ofarbanog temeljnom i završnom bojom, RAL 7032, elektrostatskim postupkom, stepen mehaničke zaštite IP54, projektne oznake MO. U KPO je ugrađena oprema i pribor prema jednopolnoj šemi i uslovima nadležne Elektrodistribucije (obaveza Elektrodistribucije)</p> <p>Delivery and installation of a metering cabinet (MC) on the external wall of the hall, with dimensions adapted to the installed equipment, made of pressed non-combustible polyester reinforced with glass fibers. The cabinet must be impact-resistant, resistant to bending, and have high dielectric strength, painted with a primer and finish coat, RAL 7032, using an electrostatic process, with a mechanical protection degree of IP54, and project designation MC. The cabinet is equipped with the necessary equipment and accessories according to the single-line diagram and the requirements of the relevant power distribution company (obligation of the power distribution company)</p>	kom	1		NE NUDITI ne radi se u ovoj fazi
2	<p>Isporučka 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 cabinet (MDC) on the wall of the hall, at the location shown on the drawing, with dimensions adapted to the installed equipment. The cabinet is made from sheet metal, twice pickled, and painted with a primer and finish coat using an electrostatic process, RAL 7032, with a mechanical protection degree of IP54 and project designation MDC. The MDC contains the following equipment from reputable manufacturers such as ETI, HAAGER, SCHNEIDER, or equivalent: Everything is</p>	kom	1		

	- strujno zaštitna sklopka FID 63/0,03A, 4p - residual Current Circuit Breaker (RCCB) FID 63/0.03A, 4-pole	kom	1		
	- tropolni automatski osigurač 16A - three-pole circuit breaker 16A	kom	7		
	- jednopolni automatski osigurač 16A - single-pole circuit breaker 16A	kom	7		
	- jednopolni automatski osigurač 10A - single-pole circuit breaker 10A	kom	11		
	- sitni potrošni materijal, kanalice POK, stezaljke P/F žica i ostalo - minor consumable materials, POK channels, P/F wire clamps, and others	kompl	1		
	Sve komplet Fully complete	kom	1		
3	Isporučka i montaža izolacionog tepiha 1 kV, širine 1 metar Delivery and installation of 1 kV insulation mat, 1 meter wide	m	1		
4	Isporučka i montaža aparata za gašenje požara, CO2, 5 kg Delivery and installation of fire extinguishers, CO2, 5 kg	kom	1		
5	Isporučka i ugradnja seta prve pomoći Delivery and installation of a first aid kit	kom	1		
6	Ostali sitni materijal Other small materials	pšl	1		
UKUPNO I) RAZVODNI ORMARI TOTAL I) DISTRIBUTION BOARDS					

II KABLOVI CABLES

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.	Isporuka i polaganje od MO do GRO kabla tipa PP00-Y 5x16mm ² Delivery and installation of PP00-Y 5x16mm ² cable from the MO to the GRO.	m m	3		
2	svjetiljki i panik svjetiljki tip PP00-Y 3x1,5mm ² 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 13m Delivery and installation of cables for powering lighting and emergency lighting, type PP00-Y 3x1.5mm ² . Cables are laid in rigid PN pipes, which are mounted on clamps along the hall structure. The price includes all materials for cable installation, connection, and distribution box. Average length per circuit 13m.	kom pcs	39		
3	utičnica, tip PP00-Y 3x2,5mm ² . 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 Delivery and installation of cables for powering sockets, type PP00-Y 3x2.5mm ² . Cables are laid in rigid PN pipes, which are mounted on clamps along the hall structure. The price includes all materials for cable installation, connection, and distribution box. Average length per circuit 18m.	kom pcs	13		

4	<p>kalorifera i rolo vrata, tip PP00-Y 5x2,5mm²</p> <p>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 20m</p> <p>Delivery and installation of cables for powering heaters and roller shutters, type PP00-Y 5x2.5mm². Cables are laid in rigid PN pipes, which are mounted on clamps along the hall structure. The price includes all materials for cable installation, connection, and distribution box. Average length per circuit 20m.</p>	kom pcs	7		
UKUPNO II) KABLOVI TOTAL II) CABLES					

III) RASVJETA LIGHTING

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	<p>Isporučka 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 protection class IP65, IK08, a minimum luminous flux of 8600 lm, maximum power of 72 W with a minimum efficiency of 119 lm/W. Light color 4000K. The light fixture features an opal polycarbonate (UV) diffuser that ensures uniform illumination without visible spots. The fixture in flex technology allows local adjustment of power and light output in three steps: (FLEX1: 8600 lm (72W), FLEX2:</p>	kom pcs	30		
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2	<p>Isporuka 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. Stepenn 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 fixture with LED light source, maximum 4.8 W, minimum 269 lm, and a minimum light efficiency of 56 lm/W. The fixture includes a battery with 3 hours of autonomy, flexible installation due to variable cable entry points, and status indication via an LED status indicator. Protection class IP65 and IK08. Pictograms are visible from a distance of 20m. Note: An appropriate pictogram must be supplied with the light. The offer must include: Technical data sheet for the light fixture and CE certificate</p>	kom pcs	9		
UKUPNO III) RASVJETA TOTAL III) LIGHTING					

IV 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	Isporuka i montaža nadgradne šuko utičnice 16A, 250V, IP55 -boja bijela. Delivery and installation of surface-mounted socket outlet 16A, 250V, IP55 - white color.	kom pcs	13		
2	Isporuka i montaža nadgradne jednopolne mikrosklopke 10A, 250V IP 55 za upravljanje rasvjetom Delivery and installation of surface-mounted single-pole miniature circuit breaker 10A, 250V, IP55 for lighting control.	kom pcs	5		
3	Ostali sitni materijal Other small materials	pšl lumps um	1		
UKUPNO IV) INSTALACIONI MATERIJAL TOTAL IV) INSTALLATION MATERIAL					

V GROMOBRANSKA INSTALACIJA
LIGHTNING PROTECTION INSTALLATION

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	Nabavka i montaža na krovu objekta, na nosačima prema vrsti pokrova, hvataljke gromobranske instalacije izrađene od aluminij-legure FI 8 mm (za nadzemne razvode). Izrađen legurisanjem po normi EN 62561-2, tip kao AH 1 Hermi ili sl. Komplet sa svim potrebnim, te izradom potrebnih spojeva Procurement and installation on the roof of the building, on supports according to the type of roofing, lightning protection clamps made of aluminum alloy, diameter 8 mm (for overhead wiring). Manufactured by alloying according to standard EN 62561-2, type AH 1 Hermi or equivalent. Complete with all necessary components and the fabrication of required joints	m m	120		

2	<p>Nabavka i montaža na zidu objekta, na nosačima, od hvataljke gromobranske instalacije do mjernog spoja, odvodnih vodova izrađenih od aluminij-legure FI 8 mm (za nadzemne razvode). Izrađen legurisanjem po normi EN 62561-2, tip kao AH 1 Hermi ili sl. Komplet sa svim potrebnim, te izradom potrebnih spojeva. Odvodni vodovi su dužine 8m.</p> <p>Procurement and installation on the wall of the building, on supports, of lightning protection clamps to the meter joint, down conductors made of aluminum alloy, diameter 8 mm (for overhead wiring). Manufactured by alloying according to standard EN 62561-2, type AH 1 Hermi or equivalent. Complete with all necessary components and fabrication of required joints. The down conductors are 8 meters in length.</p>	kom pcs	6		
3	<p>Nabavka i montaža na visini 1,5m od poda, mjernih spojeva za mjerenje otpora gromobranske instalacije. Komplet sa mehaničkom zaštitom izvoda sa uzemljivača od tla do mjernog spoja</p> <p>Procurement and installation at a height of 1.5m from the floor, of measuring joints for the measurement of the lightning protection installation. Complete with mechanical protection of the conductor from the ground to the measuring joint.</p>	kom pcs	6		
4	<p>Mjerenje otpora rasprostiranja postojećeg uzemljivača. Ukoliko mjerenje ne pokaže zadovoljavajuće rezultate, potrebno je pristupiti doradi uzemljivača (poseban projekat).</p> <p>Measurement of the resistance of the existing grounding system. If the measurement does not yield satisfactory results, it is necessary to proceed with the modification of the grounding system (separate project).</p>	pauš	1		
UKUPNO V) GROMOBRANSKA INSTALACIJA TOTAL V) LIGHTNING PROTECTION INSTALLATION					

VI ISPITIVANJE INSTALACIJA
TESTING OF INSTALLATIONS

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	<p>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:</p> <p>Perform necessary inspections, testing, and measurements on electrical installations. The inspections, testing, measurements, and preparation of test protocols are carried out by a company authorized by the relevant Federal Ministry. This item covers the entire electrical installation system. The inspection and testing</p>				
	<p>* pregled napojnih vodova * Inspection of power supply cables</p>				
	<p>* pregled vodova sekundarne instalacije * Inspection of secondary installation cables</p>				
	<p>* pregled iluminacionih izvora * Inspection of lighting sources</p>				
	<p>* ispitivanja i mjerenja otpora izolacije i otpora petlje kvara na instalaciji * Testing and measurement of insulation resistance and fault loop resistance on the installation</p>				
	<p>* predaja atesta o izvršenim mjerenjima * Submission of the certificate for the performed measurements.</p>				
	<p>* predaja garantnih listova i atesta na ugrađenu opremu * Submission of warranty certificates and certificates for the installed equipment</p>				
	<p>* predaja prospektne dokumentacije za ugrađenu opremu * Submission of the product documentation for the installed equipment.</p>				
	<p>* predaja uputstava za upotrebu uređaja i instalacija * Submission of user manuals for devices and installations.</p>				

	<p>* predaja i postavljanje jednopolnih i visepolnih sema izvedenog stanja razvodnih ploca / razdjelnika</p> <p>* Submission and installation of single-pole and multi-pole diagrams of the as-built distribution boards / distributors</p>				
	<p>* predaja i postavljanje spiska ugradjene opreme/materijala u razvodnim plocama / razdjelnicima</p> <p>* Submission and installation of the list of installed equipment/materials in the distribution boards / distributors</p>				
	Sve kompletno Fully complete	kpl pack	1		
2	<p>Izvršiti potrebnu kontrolu, ispitivanje i mjerenje na gromobranskoj instalaciji, pribaviti odgovarajuće propisima zahtjevane saglasnosti i ateste od ovlastene ustanove. Pregled obuhvata:</p> <p>Perform the necessary inspection, testing, and measurement on the lightning protection system, and obtain the relevant approvals and certificates required by regulations from the authorized institution. The inspection includes:</p>				
	<p>* pregled svakog spojnog mjesta traka - traka</p> <p>* Inspection of each connection point of tape-to-tape joints</p>				
	<p>* omsko mjerenje neprekidnosti spusteva i pretenova za izjednačenje potencijala</p> <p>* Measurement of continuity of down conductors and potential equalization conductors.</p>				
	<p>* provjera spojeva traka - malna masa</p> <p>* Verification of tape-to-mass connections.</p>				
	<p>* mjerenje otpora uzemljivača sa izradom ispitnih protokola</p> <p>* Measurement of grounding resistance with the preparation of test protocols.</p>				
	Sve kompletno Fully complete	kpl pack	1		
UKUPNO VI) ISPITIVANJE INSTALACIJA TOTAL VI) TESTING OF INSTALLATIONS					

A	REKAPITULACIJA JAKE STRUJE RECAPITULATION OF HIGH VOLTAGE ELECTRICITY				
I	RAZVODNI ORMARI DISTRIBUTION BOARDS				
II	KABLOVI CABLES				

III	RASVJETA LIGHTING	
IV	INSTALACIONI MATERIJAL INSTALLATION MATERIAL	
V	GROMOBRANSKA INSTALACIJA LIGHTNING PROTECTION INSTALLATION	
VI	ISPITIVANJE INSTALACIJA TESTING OF INSTALLATIONS	
VII	Projektovanje izvedenog stanja (obaveza nadzornog inženjera) Design of As-Built Condition (Obligation of the Supervisory Engineer)	
UKUPNO JAKA STRUJA (KM): TOTAL HIGH VOLTAGE (KM):		

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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 required small connection materials, as well as all associated preparatory or finishing works, including cleaning and removal of excess 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

SLABA STRUJA

A) LOW VOLTAGE

**I SISTEM VATRODOJAVE
FIRE ALARM SYSTEM**

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
	Isporuka i montaža mikroprocesorske vatrodojavne centrale tipa FC721 Siemens - CerberusPro ili slična sljedećih karakteristika: Delivery and installation of a microprocessor-based fire alarm control panel, type FC721 Siemens - CerberusPro or similar, with the following characteristics:				

1.

<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 control, operation, and dialogue management 				
<ul style="list-style-type: none"> - jedna analogno adresirana petlja od max 126 javljača, - svaki od elemenata 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 the loop. 				
<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 input/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 recorded events 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 (WxHxD) 430x398x165mm 				
<ul style="list-style-type: none"> - kućište u zaštiti IP30 - Enclosure with IP30 protection 				
<ul style="list-style-type: none"> - automatsko prebacivanje ljeto/zima - Automatic switch-over summer/winter 				

	<p>potpuno slobodno programabilne sve 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.)</p> <p>- Fully freely programmable all time-related and other (input/output) functions of the control panel (e.g., activating sirens after 3 minutes, turning off one air conditioning system after 30 seconds, and others after 3 minutes, etc.).</p>				
	<p>Sve kompletno</p> <p>Fully complete</p>	<p>kpl</p> <p>pack</p>	<p>1</p>		
2.	<p>isporuka telefonskog komunikatora sa govornom porukom,</p> <p>4 ulaza sa četiri različite poruke u trajanju od po 16 sekundi,</p> <p>8 telefonskih brojeva za pozivanje, tip B-TEL2, Bentel</p> <p>Delivery of a telephone communicator with voice messages, 4 inputs with four different messages, each lasting 16 seconds, 8 telephone numbers for dialing, type B-TEL2, Bentel.</p>	<p>kom</p> <p>pcs</p>	<p>1</p>		

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 capability to send both standard and high-sensitivity signals to the central unit, with a fault isolator built into the detector, high resistance to moisture, built-in light indicator for local alarm signaling, type OP720A, with base for installation p/s or n/s type DB721</p>	kom pcs	15		
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	17		
5.	<p>Isporuka ručnog adresibilnog javljača požara sa 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 loop fault isolator, in a red housing for installation in dry and clean areas, IP44, type FDME221 in housing FDMH291-R, Siemens - CerberusPro</p>	kom pcs	2		

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 flash for operation in the fire alarm loop, with a loop isolator integrated into each device, no additional power source required, type FDS229-R, 99 dB at 1 m, flashing frequency 1Hz, red color, adjustable tone type and volume, IP43 protection, with base FDB221, Siemens - CerberusPro or similar.</p>	kom pcs	2		
7.	<p>isporuka i montaža pomoćnog releja i trafoa za pretvaranje napona na upravljačko nadzornim modulima sa kućištem</p> <p>Delivery and installation of an auxiliary relay and transformer for voltage conversion on control monitoring modules with housing</p>	kom pcs	7		
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 17 metara kabla. Sve komplet.</p> <p>Delivery and installation of communication fire-resistant cable JB Y(St)Y 2x2x0.8 for connecting addressable elements of fire alarm loops. The cable is installed in non-flammable protective flexible PVC conduit. On average, 17 meters of cable are installed per circuit. All included.</p>	kpl pack	17		

9.	<p>Isporuka i polaganje kabla PP-Y 3x1,5 za napajanje adresabilne vatrodojavne centrale. Kabl se polaže u zaštitnom negorivom PVC gibljivom 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 protective non-flammable flexible PVC conduit. All included.</p>	m m	5		
10.	<p>Sitni nespecificirani materijal</p> <p>Small unspecified material</p>	kpl pcak	1		
11.	<p>Spajanje kablova na strani vatrodojavne centrale, postavljanje javljača požara u pripremljena podnožja sa uvrtačem na visine do 12m, konfigurisanje sistema, programiraneje centrale, parametrisiranje 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>Connecting cables to the fire alarm control panel side, installing fire detectors in prepared bases with screwdrivers at heights up to 12m, system configuration, programming the control panel, parameterizing automatic fire detectors to initial settings, entering user texts, system testing, user staff training, issuing 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 testing report and certification of the system.</p>	pšl lumps um	1		
<p>UKUPNO I) SISTEM VATRODOJAVE</p> <p>TOTAL I) FIRE ALARM SYSTEM</p>					

INSTALACIJA VIDEONADZORNOG SISTEMA

II VIDEO SURVEILLANCE SYSTEM INSTALLATION

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.	<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, resolution 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+.</p>	kom pcs	1		

2.	<p>Isporuka i ugradnja 2MP HDCVI kamera u eyeball kućištu 4 u 1 TVI/AHD/CVI/CVBS režim. 0.02Lux/F1.9, 30IRE, 0Lux IR on. Maksimalna rezolucija 1920×1080. 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 eyeball housing, 4 in 1 TVI/AHD/CVI/CVBS mode. 0.02Lux/F1.9, 30IRE, 0Lux IR on. Maximum resolution 1920×1080. Fixed lens 2.8mm. Protection level IP67. DWDR. IR range 60 meters. Integrated microphone. 12V power supply. Compatible accessories: PFA137, PFA130-E. Pole mount: PFA152-E. Wall mount: PFB205W.</p>	kom pcs	2		
3.	<p>kućištu 4 u 1 TVI/AHD/CVI/CVBS režim. 0.01 Lux/F1.6, 30IRE, 0 Lux IR on. Maksimalna rezolucija 2880×1620. 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. (vehicle and human). 12v napajanje, PoE.</p> <p>Delivery and installation of 5MP HDCVI cameras in bullet housing, 4 in 1 TVI/AHD/CVI/CVBS mode. 0.01 Lux/F1.6, 30IRE, 0 Lux IR on. Maximum resolution 2880×1620. Fixed lens 3.6mm. Protection level IP67. DWDR. IR range 80 meters. Integrated microphone. 12v power supply. Compatible bracket is PFA130-E or PFA134. Pole mount is PFA152-E. Material:</p>	kom pcs	1		
4.	<p>Isporuka i ugradnja nadzidne dozne za instalaciju kamera, vodootporna, aluminijska</p> <p>Delivery and installation of an external junction box for camera installation, waterproof, aluminum.</p>	kom pcs	3		

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	6		
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 cable 4x2x0.6 mm Cat. 6, The cable is installed in PN pipes with a diameter of 16 mm.	m m	200		
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		
8.	Isporučka tvrdih diskova za spremanje snimaka, 4TB Delivery of hard drives for storing recordings, 4TB.	kom	1		
9.	Funkcionalno ispitivanje opreme za sve funkcije i puštanje u pogon. Functional testing of equipment for all functions and commissioning.		1		

	UKUPNO II) INSTALACIJA VIDEONADZORNOG SISTEMA TOTAL II) VIDEO SURVEILLANCE SYSTEM INSTALLATION	
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**III INSTALACIJA PROTIVPROVALNOG SISTEMA
BURGLAR ALARM SYSTEM INSTALLATION**

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	Isporuka i ugradnja protivprovalne alarmne centrale istih ili sličnih karakteristika: Alarmna centrala kao Paradox SP7000, sa 16 žičnih zona (32 sa dupliranjem), 2 particije, 4PGM izlaza u kompletu sa LED šifratorom kao Paradox K10V i metalnom kutijom, transformatorom 40VA/16V, i akumulatorom 12V/Ah Delivery and installation of a burglar alarm control panel with the same or similar specifications: Alarm control panel like Paradox SP7000, with 16 wired zones (32 with expansion), 2 partitions, 4 PGM outputs, complete with LED keypad like Paradox K10V and metal enclosure, 40VA/16V transformer, and 12V/Ah battery.	kom pcs	1		
2	Isporuka i ugradnja tastature tip kao PARADOX K10V Delivery and installation of a keypad, model similar to PARADOX K10V.	kom pcs	2		
3	Isporuka i ugradnja detektora pokreta za unutrašnju montažu, sa digitalnom detekcijom pokreta, neosjetljiv na životinje do 40kg, tip kao Paradox DM70 Delivery and installation of a motion detector for indoor mounting, with digital motion detection, immune to animals up to 40kg, model similar to Paradox DM70.	kom pcs	3		
4	Isporuka i ugradnja adresabilnog magnetnog kontakta, tip kao Paradox ZC1 Delivery and installation of an addressable magnetic contact, model similar to Paradox ZC1.	kom pcs	1		

5	Isporučka i ugradnja telefonskog komunikatora/dojavnog automata, sa glasovnom i SMS dojavom, povezuje se direktno na centralu	kom pcs	1		
	Delivery and installation of a telephone communicator/notification device, with voice and SMS notifications, directly connected to the control panel.				
6	Isporučka i ugradnja vanjske sirene sa LED diodama, antisabotažno zaštićena, dvostruko kućište sa akumulatorom 1.3Ah, alarm u slučaju gubitka napajanja, tip kao Western Security WS-905R/B	kom pcs	1		
	Delivery and installation of an external siren with LED diodes, anti-tamper protection, dual housing with a 1.3Ah battery, alarm in case of power loss, model similar to Western Security WS-905R/B.				
7	Isporučka i ugradnja unutrašnje sirene sa lampom. Jačina zvuka od 90dB. Tip kao Western Security F1/WS-200	kom pcs	1		
	Delivery and installation of an internal siren with a lamp. Sound level of 90dB. Model similar to Western Security F1/WS-200.				
8	Isporučka i polaganje alarmnog kabla za protivprovalni sistem koji se polaže u PN cijevima fi 16 mm	paušal lumps um	1		
	Delivery and installation of alarm cable for the burglar alarm system, to be laid in PN pipes with a diameter of 16 mm.				
9	Funkcionalno ispitivanje opreme za sve funkcije i puštanje u pogon.		1		
	Functional testing of the equipment for all functions and commissioning.				

	UKUPNO III) INSTALACIJA PROTIVPROVALNOG SISTEMA TOTAL III) BURGLAR ALARM SYSTEM INSTALLATION	
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IV KOMUNIKACIJA INSTALACIJA
COMMUNICATION INSTALLATION

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	Nabavka i ugradnja komunikacionog ormara za montažu na zid 19", kabinet 12U, 600x635x395 mm, monoblock za smještaj snimača video nadzora. Procurement and installation of a communication cabinet for wall mounting, 19", 12U, 600x635x395 mm, monoblock for housing the video surveillance recorder.	kom pcs	1		
2	Isporuka i ugradnja u ormar: Delivery and installation in the cabinet:				
	napojna letva sa 5 kom utičnica Power strip with 5 outlets.	kom pcs	1		
	fiksna polica Fixed shelf	kom pcs	1		
	switch 6 portni IPv6/IPv4, 802.3at POE + Gigabit Ethernet Switch 6-port switch, IPv6/IPv4, 802.3at POE+, Gigabit Ethernet Switch.	kom pcs	1		
3	Nabavka i ugradnja u PN cijevi 16 mm i 11 mm kabla cat 6 od mjesta koncentracije TK priključaka kompletnog objekta do KO, procjenjene dužine 80 m Procurement and installation of FTP Cat 6 cable in PN pipes with a diameter of 16 mm, from the TK connection concentration point of the entire building to the central distribution point (KO), estimated length 80 meters.	kompl pcak	1		
UKUPNO IV) KOMUNIKACINA INSTALACIJA TOTAL IV) COMMUNICATION INSTALLATION					

B	REKAPITULACIJA SLABE STRUJE RECAPITULATION OF LOW VOLTAGE				
I	SISTEM VATRODOJAVE FIRE ALARM SYSTEM				
II	INSTALACIJA VIDEONADZORNOG SISTEMA VIDEO SURVEILLANCE SYSTEM INSTALLATION				
II	INSTALACIJA PROTIVPROVALNOG SISTEMA BURGLAR ALARM SYSTEM INSTALLATION				
IV	KOMUNIKACINA INSTALACIJA COMMUNICATION 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	