

PART 3: SCOPE OF WORK

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C3.1: *PURCHASER'S* GOODS INFORMATION

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1 Overview and purpose of the *goods and services*

Supply and Delivery of Electrical Power Electronic Spares on an “as-and-when” required basis at Kendal Power Station.

Semiconductor devices are very powerful in controlling high currents and voltages. Nevertheless, they are very susceptible to violations of the safe-operating conditions which may lead to their failure. When a phase control device must turn-off its current under inductive load conditions, it is very important that the voltage between anode and cathode remains inside the acceptable voltage limits.

2 Specification and description of the *goods*

A semiconductor device has a built-in junction capacitor. However, when a reverse voltage starts to rise during the turn-off phase, this capacitance is insufficient to reduce any overvoltage. An additional parallel RC-Snubber is then needed to reduce the overvoltage to a reasonable limit.

Snubber component design depends on the operating conditions including commutation inductance, voltage and di/dt during turn-off. Other factors to consider include the semiconductor's reverse current waveform during operation and its circuit conditions. The snubber also influences the semiconductor's turn-off losses. This document explains the turn-off process of phase control devices. It outlines a design procedure for optimizing a snubber for a specific application.

Thyristors are typically used as phase-controlled current valves for AC to DC conversion and vice versa, operating at low frequencies (most often around AC line frequency). In the conducting state, thyristors feature very low losses, making them attractive devices to efficiently control very high currents and energies.

Silicon controlled rectifier is normally in OFF state but when a small current enters its gate G it goes to ON state. If the gate current is removed, the SCR remains in ON state and to turn it off the anode to cathode current must be removed or the anode must be set to a negative voltage in relation to cathode. The current only flows in one direction from anode to cathode. SCRs are used in switching circuits, phase control circuits, inverting circuits etc.

The Eskom technical specifications and requirements for Electrical Power Electronics Spares is found on the table below:

TABLE 1: Electrical Power Electronics Spares

Item nr	Description	Quantity
131015	THYRISTOR:SKT34016D,THYRISTOR: UNIT	40
0580042	THYRISTOR:3452N0019;5.5 KV;55 KA,THYRISTOR: INDUSTRY STANDARD: 3452N0019; POTENTIAL: 5.5 KV; POWER: 55 KA; MOUNT: LCI DRIVE; MANUF P/N: 3HB010085R001	30

0584593	RECTIFIER:BRIDGE;800-1600 V;31 A,RECTIFIER: TYPE: BRIDGE; POTENTIAL: 800-1600 V; CURRENT: 31 A; INDUSTRY STANDARD: VBO20-12NO2; CONNECTION: 1/4 INCH FAST ON TERMINALS; SPECIFICATION: UL REGISTERED E 72873; MANUF P/N: LGV452528P2012; SINGLE PHASE RECTIFIER BRIDGE	10
0131051	PUMP;G1736/UR,TYPE: PUMP; INDUSTRY STANDARD: G1736/UR; SUPPL P/N: HTAM420-558P0001; REFERENCE NO: G1736/UR; HVNS 103024 PRA.19, ITEM NO: 91004	60
0207821	MODULE:DIGITAL INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: DIGITAL INPUT; INPUT: 24 VDC; POWER SOURCE: 24 VDC; SUPPL P/N: 6ES7321-1BL00-0AA0; THE ITEM MUST BE PROTECTIVE PACKED AND CLEARLY MARKED, 32 DIG INP INPUT	10
0207810	MODULE:DIGITAL OUTPUT;O/P 24 VDC 0.5 A,MODULE: TYPE: DIGITAL OUTPUT; OUTPUT: 24 VDC 0.5 A; POWER SOURCE: 24 VAC; SUPPL P/N: 6ES7 322-1BH01-0AA0; THE ITEM MUST BE PROTECTIVE PACKED AND CLEARLY MARKED	10
0213962	MODULE:PROCESSOR;I/P 24 VDC;O/P 24 VDC,MODULE: TYPE: PROCESSOR; INPUT: 24 VDC; OUTPUT: 24 VDC; POWER SOURCE: 24 VDC; SUPPL P/N: 3BSE005831R1	8
0215294	MODULE:DIGITAL I/O;O/P 24 VDC;24 VDC,MODULE: TYPE: DIGITAL I/O; OUTPUT: 24 VDC; POWER SOURCE: 24 VDC; APPLICATION: BOILER FEED PUMP VARIABLE SPEED DRIVES; SPECIFICATION: 800PEC; REFERENCE NO: DO810, UNK; SUPPL P/N: 3BSE008510R1; FOR 5800	15
0218265	MODULE:PROXIMITOR SEISMIC MONITOR;24 V,MODULE: TYPE: PROXIMITOR SEISMIC MONITOR; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V; SUPPL P/N: 140734-02; 3500/42M	15
0220636	MODULE:DIGITAL OUTPUT;24 VDC,MODULE: TYPE: DIGITAL OUTPUT; POWER SOURCE: 24 VDC; DIMENSIONS: WD 120 X LG 130 X THK 40 MM; SUPPL P/N: 6ES7322-1BL00-0AA0; SIEMENS ONLY, 32 CH OUTPUT	10
0225907	MODULE:CPU;I/P 24 VDC;24 VDC,MODULE: TYPE: CENTRAL PROCESSING UNIT; INPUT: 24 VDC; POWER SOURCE: 24 VDC; SUPPL P/N: 6ES7315-2AF03-OABO; USED ON FIRE PUMPS S7 PLC, DIGITAL OUTPUT	15
0231705	MODULE PWR SUP:I/P 380 V;O/P 24 V,MODULE, POWER SUPPLY: INPUT: 380 V; OUTPUT: 24 V; SUPPL P/N: 133292-01; DC	10

0237379	MODULE:DIGITAL SM323;24 VDC;SPEC S7-300,MODULE: TYPE: DIGITAL SM323; POWER SOURCE: 24 VDC; APPLICATION: OPTICALLY ISOLATED 16DI; SPECIFICATION: S7-300; SUPPL P/N: 6ES7323-1BL00-0AA0	10
0238448	MODULE:CPU 417-4H;I/P 4-20 MA;24 V,MODULE: TYPE: CPU 417-4H; INPUT: 4-20 MA; OUTPUT: 4-20 MA; POWER SOURCE: 24 V; SUPPL P/N: 6ES7-417-4HT14-OABO	20
0255907	MODULE:ANALOG INPUT,MODULE: TYPE: ANALOG INPUT; SUPPL P/N: 6ES7331-7KF02-0AB0; SIMATIC S7-300, SM331; OPTICALLY ISOLATED; 8AI, RESOLUTION 9/12/14 BITS; U/ I/ THERMOCOUPLE / RESISTANCE INTERRUPTED DIAGNOSTICS, 1 X 20 PIN, REMOVE/ INSERT W BACKPLANE BUS	15
0256392	MODULE:DIGITAL O/P, SM 322,MODULE: TYPE: DIGITAL O/P, SM 322; APPLICATION: DHP SIMATIC S7-300; SUPPL P/N: 6ES7322-1HH01-0AA0; OPTICALLY ISOLATED 16DO; RELAY CONTACTS, 1 X 20 PIN	50
0503025	MODULE:INPUT/OUTPUT,MODULE: TYPE: INPUT/OUTPUT; MANUF P/N: 3BHE022293R0101; PC D232; FOR ABB UNITROL 6800 EXCITATION SYSTEM	10
0580043	MODULE:DIGITAL INPUT;24VDC 6MA;DI810,MODULE: TYPE: DIGITAL INPUT; POWER SOURCE: 24VDC 6MA; MANUF P/N: 3BSE008508R0001; REFERENCE NO: DI810; 16 CHANNEL; ABB SOLE SOURCE IN PLACE EFFECTIVE 01/04/2016 TO 31/03/2022; KUSILE AGREEMENT DOCUMENT ATTACHED; DOC NO: 240-118824127	25
0580046	MODULE:DIGITAL INPUT;48 VDC;DI811,MODULE: TYPE: DIGITAL INPUT; POWER SOURCE: 48 VDC; MANUF P/N: 3BSE008552R001; REFERENCE NO: DI811; 16 CHANNEL	10
0580172	MODULE:CONVERTER CONTROL SYSTEM;60 V,MODULE: TYPE: CONVERTER CONTROL SYSTEM; POWER SOURCE: 60 V; MANUF P/N: 3BHB004744R0010; REFERENCE NO: MV GDR; XV C517AE	25
0588501	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; APPLICATION: SIMATIC S7; RAM MEMORY CARD FOR S7-400; SUPPL P/N: 6ES7952-1AK00-0AA0	10
0622719	MODULE:BINARY OUTPUT;I/P 24 VDC,MODULE: TYPE: BINARY OUTPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; SUPPL P/N: 3BDH000733R1	10

0639116	MODULE PWR SUP:TRANSMITTER;O/P 4-20 MA,MODULE, POWER SUPPLY: TYPE: TRANSMITTER; INPUT: 20-50 VAC/DC; OUTPUT: 4-20 MA; APPLICATION: FMI51-K1EB2JA3Y1A LIQUICAP M FMI51; SPECIFICATION: ATEX II-1-GD-EX-IA-IIC; SUPPL P/N: RN221N-B1; 1:1 TRANSMISSION; HOUSING 22.5MM; MOUNT: RAIL 35MM; PROTECTION: IP20	10
0639117	MODULE PWR SUP:NIVOTESTER FTC325,MODULE, POWER SUPPLY: TYPE: NIVOTESTER FTC325; INPUT: 20-30/20-60 VAC; OUTPUT: 4-20 MA; APPLICATION: CAPACITIVE ROD PROBE FTI51-KAF1GGJ73Y1A; SPECIFICATION: ATEX II-1-GD-EX-IA-IIC-WHG; SUPPL P/N: FTC325-C1B11; SWITCH OUTPUT: 1X SPST LEVEL AND 1X SPST ALARM NC; HOUSING: 2-WIRE PFM 45MM; MOUNT: DIN RAIL; 1-CHANNEL SETTING VIA PUSH BUTTON; ADJUSTABLE OPERATING DELAY; EMC ACCORDING TO NAMUR	25
0662079	MODULE:1SVR730885R4300;3PH MONITORING,MODULE: TYPE: 3PH MONITORING; INPUT: 180-280 VAC; APPLICATION: CM-MPS.23S MULTIFUNCTION 3 PHASE RMS MONITORING RELAY; OEM P/N: 1SVR730885R4300	10
0580046	MODULE:DIGITAL INPUT;48 VDC;DI811,MODULE: TYPE: DIGITAL INPUT; POWER SOURCE: 48 VDC; MANUF P/N: 3BSE008552R001; REFERENCE NO: DI811; 16 CHANNEL	10
0588501	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; APPLICATION: SIMATIC S7; RAM MEMORY CARD FOR S7-400; SUPPL P/N: 6ES7952-1AK00-0AA0	10
0622719	MODULE:BINARY OUTPUT;I/P 24 VDC,MODULE: TYPE: BINARY OUTPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; SUPPL P/N: 3BDH000733R1	10
0622721	MODULE:ANALOG INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: ANALOG INPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; SUPPL P/N: 3BDH000720R1	15
0639116	MODULE PWR SUP:TRANSMITTER;O/P 4-20 MA,MODULE, POWER SUPPLY: TYPE: TRANSMITTER; INPUT: 20-50 VAC/DC; OUTPUT: 4-20 MA; APPLICATION: FMI51-K1EB2JA3Y1A LIQUICAP M FMI51; SPECIFICATION: ATEX II-1-GD-EX-IA-IIC; SUPPL P/N: RN221N-B1; 1:1 TRANSMISSION; HOUSING 22.5MM; MOUNT: RAIL 35MM; PROTECTION: IP20	10

0662079	MODULE:1SVR730885R4300;3PH MONITORING,MODULE: TYPE: 3PH MONITORING; INPUT: 180-280 VAC; APPLICATION: CM-MPS.23S MULTIFUNCTION 3 PHASE RMS MONITORING RELAY; OEM P/N: 1SVR730885R4300	10
0662081	VSD ELECT:ATV312H075N4;HD;0.75 KW;400;3,DRIVE, VARIABLE SPEED ELECTRICAL: TYPE: HEAVY DUTY; OUTPUT RATING: 0.75 KW; POTENTIAL: 400 VAC; PHASE: 3; INPUT: 400 VAC; CURRENT: 3.6 A; MOUNTING METHOD: WALL; ENCLOSURE: IP54; OEM P/N: ATV312H075N4;	10
0584574	TRANSDUCER:ISOLATING AMPLIFIER,TRANSDUCER: TYPE: ISOLATING AMPLIFIER; INPUT: 0-10 V; OUTPUT: 0-10 V; POWER SOURCE: 18-30 VDC; MANUF P/N: 401152P001	40
0589924	RESISTOR:34 OHM;CLIP ON;POLYPROPYLENE,RESISTOR: RESISTANCE: 34 OHM; RATING: 2.8 KW AT 2.5 LITRE PER MINUTE; CONNECTION: CLIP ON; MATERIAL: POLYPROPYLENE; TOLERANCE: +/-3 PCT; TYPE: WATER COOLED; MANUF P/N: HIES308461R0004; MAX WATER INLET -60 DEGREES; MAX WATER OUTLET -70 DEGREES; WATER CONNECTION THREAD M10 X 1; SIZE: 6.3 X 0.8 MM	100
0115944	RESISTOR:0.72 OHM;WIREWOUND;EJ009266A,RESISTOR: RESISTANCE: 0.72 OHM; MATERIAL: WIREWOUND; REFERENCE NO: EJ009266A, UNK; 64 AMPS; TYPE EJ 00492; SURFACE MOUNT	25
0580049	CONTROLLER:AC 800PEC;64 BIT;24 V,CONTROLLER: TYPE: AC 800PEC; RANGE: 64 BIT; RATING: 24 V; MANUF P/N: 3BHE023584R2334; REFERENCE NO: PP D113 B03 26 100110; WITH 30K-LUT FPGA;	8
0236738	COMPUTER:EXCITATION CONTROL TERMINAL,COMPUTER: TYPE: EXCITATION CONTROL TERMINAL; SUPPL P/N: 3BHE051348R1110; TYPE: FOCUS FL-T	10
0580051	POWER SUPPLY:I/P 160-320 VDC;300 VDC,POWER SUPPLY: INPUT: 160-320 VDC; OUTPUT VOLTAGE: 300 VDC; OUTPUT CURRENT: 0.5 A; TYPE: DC-DC; SPECIFICATION: T5081-01A	12
0616251	FAN ELEC:AC CENTRIFUGAL;230 VDC;2.45 A,FAN, ELECTRIC: TYPE: AC CENTRIFUGAL; SIZE: LG 172 X HT 130 MM; POTENTIAL: 230 VDC; CURRENT: 2.45 A; VOLUME RATING: 1200 M3/HR; SUPPL P/N: D2E160-AH02-15	12

0614035	METER FLW:OPTICAL;1/2 IN-BSP;NYLON,METER, FLOW: TYPE: OPTICAL; CONNECTION: 1/2 IN-BSP; RANGE: 3-10L/MIN; 75-325NL/MIN; MATERIAL: NYLON	8
0614037	VESSEL:EXPANSION TANK;50 L;10 BAR;STEEL,VESSEL: TYPE: EXPANSION TANK; CAPACITY: 50 L; RATING: 10 BAR; MATERIAL: STEEL; COLOR: BERYLLIUM; SPECIFICATION: C1;	8
0580171	MODULE:INTERFACE;24 VDC,MODULE: TYPE: INTERFACE; POWER SOURCE: 24 VDC; MANUF P/N: 3BHE022294R0103; REFERENCE NO: GFD233	23
0660913	MODULE:BAND-PASS FILTER;I/P 55 VAC,MODULE: TYPE: BAND-PASS FILTER; INPUT: 55 VAC; OUTPUT: 55VAC 30SEC; APPLICATION: STATOR EARTH FAULT PROTECTION SCHEME IN THE GENERATOR PROTETION SCHEME IN CONJUNCTION WITH THE 7XT33 20HZ SIGNAL GENERATOR WHEN MAKING USE OF THE 7UM62 PROTECTION RELAY; SUPPL P/N: 7XT3400-BA00/DD	4
0660914	MODULE:SIGNAL GENERATOR;I/P 24-250 VDC,MODULE: TYPE: SIGNAL GENERATOR; INPUT: 24-250 VDC; OUTPUT: 25 V; POWER SOURCE: 220 V; APPLICATION: STATOR EARTH FAULT PROTECTION SCHEME IN THE GENERATOR PROTETION SCHEME IN CONJUNCTION WITH THE 7XT33 20HZ SIGNAL GENERATOR WHEN MAKING USE OF THE 7UM62 PROTECTION RELAY; SUPPL P/N: 7XT3300-0BA00/DD	4
0240961	VSD:1;1500;1500 RPM;30 KW;400 V,DRIVE, VARIABLE SPEED: RATIO: 1; INPUT RPM: 1500; OUTPUT RPM: 1500 RPM; POWER: 30 KW; POWER SOURCE: 400 V; SUPPL P/N: ATV930D30N4; WITH HEAT SINK;	3
0572359	VSD:0:1;1500 RPM;15000 RPM;45 KW;400 V,DRIVE, VARIABLE SPEED: RATIO: 0:1; INPUT RPM: 1500 RPM; OUTPUT RPM: 15000 RPM; POWER: 45 KW; POWER SOURCE: 400 V; MANUF P/N: ATV71HD45N4; 3AC; 104A; 50HZ;	3
0662080	VSD ELECT:CFW110477T4SZ;HD;250 KW;400;3,DRIVE, VARIABLE SPEED ELECTRICAL: TYPE: HEAVY DUTY; OUTPUT RATING: 250 KW; POTENTIAL: 400 VAC; PHASE: 3; DIMENSIONS: WD 169 X LG 486 X THK 142 MM; INPUT: 400 VAC; CURRENT: 477 A; MOUNTING METHOD: WALL; ENCLOSURE: IP20; OEM P/N: CFW110477T4SZ;	3
0580050	HEAT EXCHANGER:VELLO DEST 10;4;3 BAR,HEAT EXCHANGER: TYPE: VELLO DEST 10; PASS: 4; RATING: 3 BAR; MANUF P/N: 3BHB020097R0001;	4

0584573	SENSOR:SPEED;0.1HZ TO 120KHZ,SENSOR: TYPE: SPEED; RANGE: 0.1HZ TO 120KHZ; RATING: 20-30VDC 60MA; DIMENSIONS: WD 45 X LG 110 X HT 75 MM; MANUF P/N: 3BHB018318R0001; LC DISPLAY; ZERO SPEED SENSOR; OPERATIONAL TEMPERATURE -20 DEGREES CELSIUS TO 65 DEGREES CELSIUS; STEP RESPONSE 10 TO 90 PERCENT <25MS	7
0131078	THYRISTOR:SWITCHING;300 A;SKT300/12C,THYRISTOR: TYPE: SWITCHING; CURRENT: 300 A; INDUSTRY STANDARD: SKT300/12C; SUPPL P/N: SKT300/12C; SEMIKRON ONLY, 3/4 INCH UNF THREAD COMPLETE WITH NUT AND WASHERS	3
0131043	RECTIFIER:BRIDGE;380 V;30 A;2449;4 SCREW,RECTIFIER: TYPE: BRIDGE; POTENTIAL: 380 V; CURRENT: 30 A; INDUSTRY STANDARD: 2449; CONNECTION: 4 SCREW; SUPPL P/N: SKD3010-16A1	3
0131081	DIODE:RECTIFIER;SSIL13120536A;6531-10100,DIODE: TYPE: RECTIFIER; INDUSTRY STANDARD: SSIL13120536A; DRAWING NO: 26-6531/3-10100 REV 1; REFERENCE NO: 6531-10100; RR ON "B" WHEEL	3
0215296	MODULE:MODULE BUS CLUSTER;24 VDC;ACS500,MODULE: TYPE: MODULE BUS CLUSTER; POWER SOURCE: 24 VDC; APPLICATION: ACS500; DIMENSIONS: WD 58 X HT 170 X DP 122 MM; REFERENCE NO: TB820 V2, UNK; SUPPL P/N: 3BSE013208R1; DIGITAL DATA INPUT/OUTPUT; ABB SOLE SOURCE IN PLACE EFFECTIVE 01/04/2016 TO 31/03/2022; KUSILE AGREEMENT DOCUMENT ATTACHED; DOC NO: 240-118824127	3
0220912	DIODE LGHT EMIT:DIA 60 X LG 60 MM;DOME,DIODE, LIGHT EMITTING: DIMENSIONS: DIA 60 X LG 60 MM; SHAPE: DOME; COLOR: WHITE; SUPPL P/N: BR290SB DIODE; MODEL NO: D-R290; FOR USE WITH DURAG SYSTEM 3, LIGHT SOURCE, SUPER WIDE BAND (SWBD), OPACITY AND DUST CONCENTRATION METER MEASURING HEAD	3
0218813	MODULE PWR SUP:I/P 220 VAC;O/P 24 VDC,MODULE, POWER SUPPLY: INPUT: 220 VAC; OUTPUT: 24 VDC; SUPPL P/N: SL 2.5; FOR USE WITH PLANT INFORMATION MANAGEMENT SYSTEM	3
0220637	MODULE:ANALOG INPUT;24 VDC,MODULE: TYPE: ANALOG INPUT; POWER SOURCE: 24 VDC; SUPPL P/N: 6ES7331- 7KF02-OABO; 8 INPUTS, SIEMENS ONLY, TYPE K INPUT	3

0223924	MODULE:16 CHANNEL DIGITAL INPUT,MODULE: TYPE: 16 CHANNEL DIGITAL INPUT; INPUT: 120/230 VAC; SUPPL P/N: 6ES7321-1FH00-0AA0; SIEMENS ONLY	3
0223925	MODULE COMM,MODULE, COMMUNICATION: SUPPL P/N: 6ES7341-1BH01-0AE0; CP342; SIEMENS ONLY, BINARY INPUT, BINARY OUTPUT	3
0224887	MODULE PWR SUP:CONTROL;I/P 230 VAC,MODULE, POWER SUPPLY: TYPE: CONTROL; INPUT: 230 VAC; OUTPUT: 24 VDC; SUPPL P/N: 6ES7307-1KA01-OAAO	3
0223928	MODULE:CPU,MODULE: TYPE: CPU; SUPPL P/N: 6ES7315-2AG10-0AB0; S7-300 315-2DP; SIEMENS ONLY	3
0224887	MODULE PWR SUP:CONTROL;I/P 230 VAC,MODULE, POWER SUPPLY: TYPE: CONTROL; INPUT: 230 VAC; OUTPUT: 24 VDC; SUPPL P/N: 6ES7307-1KA01-OAAO	3
0238426	MODULE PWR SUP,MODULE, POWER SUPPLY: SUPPL P/N: 6EP1334-2BA00	3
0238784	MODULE:ANALOG,MODULE: TYPE: ANALOG; SUPPL P/N: 6ES7332-5HF00-0AB0; TYPE SIMATIC S7-300, SM 332, OPTICALLY ISOLATED, 8 AO U/I; DIAGNOSTICS; RESOLUTION 11/12 BITS, 40 PIN, REMOVE/INSERT W ACTIVE BACKPLANE BUS	3
0238793	MODULE:FRONT CONNECTOR,MODULE: TYPE: FRONT CONNECTOR; SUPPL P/N: 6ES7392-1AJ00-0AA0; SIMATIC S7-300, FOR SIGNAL MODULES WITH SCREW CONTACTS, 20-PIN	3
0238828	MODULE:BUS UNIT,MODULE: TYPE: BUS UNIT; SUPPL P/N: 6ES7195-7HD10-0XA0; SIMATIC DP; INSERT REMOVE WHILE OPERATING MODE RUN; TO BE CHECKED AT RECEIVING BEFORE BEING PLACED ON SHELF	3
0251654	MODULE:DIGITAL OUTPUT;I/P 70-100 MA,MODULE: TYPE: DIGITAL OUTPUT; INPUT: 70-100 MA; OUTPUT: 0.5-2 A; POWER SOURCE: 24 VDC; APPLICATION: AUTOMATION/CONTROL SYSTEM; DIMENSIONS: WD 80 X HT 125 X DP 120 MM; REFERENCE NO: SM 326; SUPPL P/N: 6ES7326-2BF01-0AB0; 6ES7326-2BF10-OABO; FAILSAFE FOR SIMATIC S7F SYSTEMS WITH DIAGNOST INTERRUPT, 1 X 40 PIN, PLC	3

0255906	MODULE:ET 200M INTERFACE IM 153-2,MODULE: TYPE: ET 200M INTERFACE IM 153-2; SUPPL P/N: 6ES7153-2BA02-0XB0; SIMATIC DP, HIGH FLATURE FOR MAX 12 S7-300, WITH REDUNDANCY; TIME STAMP ING; FIT FOR ISOCHROME MODE NEW FEATURES: 12 MODULES/ STATION SLAVE INITIATIVE; FOR SWITCHES AND DRIVES; EXTENDED DATA FOR HART SEC ONDARY VARIABLES OPERATION WITH 64PT MODULES EXTENDED TIMESTAMPS WITH 32 SIGNALS/ SLOT	3
0552776	MODULE:ANALOG OUTPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: ANALOG OUTPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; SPECIFICATION: CA010; MANUF P/N: 3BDH000723R1	3
0568023	MODULE:MODULE BUS;9-30 VDC;CONVERTER,MODULE: TYPE: MODULE BUS; POWER SOURCE: 9-30 VDC; APPLICATION: CONVERTER; DIMENSIONS: WD 67 X LG 100 X THK 22 MM; SPECIFICATION: MOXA, MGATE MB3170	3
0568024	MODULE:ETHERNET EXTENDER;12-48 VDC,MODULE: TYPE: MODULE BUS; POWER SOURCE: 9-30 VDC; APPLICATION: CONVERTER; DIMENSIONS: WD 67 X LG 100 X THK 22 MM; SPECIFICATION: MOXA, MGATE MB3170	3
0579868	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 3BSE008514R0001; REFERENCE NO: D0820	3
0580047	MODULE:RESISTANCE TEMPERATURE DETECTOR,MODULE: TYPE: RESISTANCE TEMPERATURE DETECTOR; POWER SOURCE: 24V 80MA; MANUF P/N: 3BSE040662R0001; 8 CHANNEL; ANALOG INPUT; AI830 RTD INPUT MODULE	3
0585805	MODULE:COMM BOARD;O/P 5V+/-10% 100MA,MODULE: TYPE: COMM BOARD; OUTPUT: 5V+/-10% 100MA; POWER SOURCE: 5V+/-5%, 100MA VDC; APPLICATION: CBP2; MANUF P/N: 6SX7010-0FF05; INTERFACE TO S7-300	3
0585806	MODULE:EXPANSION BOARD,MODULE: TYPE: EXPANSION BOARD; MANUF P/N: 6SX7010-0KB00	3
0585809	MODULE:T400 TECHNOLOGY;24 VDC,MODULE: TYPE: T400 TECHNOLOGY; POWER SOURCE: 24 VDC; MANUF P/N: 6DD1606-0AD0; REGULATION AND CONTROL MODULE	3

0588300	MODULE:CPU;I/P DIGITAL;O/P 16 DIGITAL,MODULE: TYPE: CENTRAL PROCESSING UNIT; INPUT: DIGITAL; OUTPUT: 16 DIGITAL; POWER SOURCE: 24V; APPLICATION: SIMATIC S7-300; DIMENSIONS: DIA 130 X WD 120 X HT 125 MM; MANUF P/N: 6ES7313-6CF03-OABO; CPU 313C-2DP COMPACT CPU WITH MPI; 3 FAST COUNTERS; 1 INTEGRATED DP INTERFACE; 24VDC POWER SUPPLY; 64 KBYTE, MICRO MEMORY CARD REQUIRED	3
0588301	MODULE:VOLTAGE/CURRENT;120-110 V,MODULE: TYPE: VOLTAGE/CURRENT; POWER SOURCE: 120-110 V; MANUF P/N: UGE 100; REFERENCE NO: BV27935BG; FOR DETECTION OF GENERATION VOLTAGE	3
0588302	MODULE:CURRENT DETECTION;5 V,MODULE: TYPE: CURRENT DETECTION; POWER SOURCE: 5 V; MANUF P/N: 1GE100; REFERENCE NO: BV 28018BG; FOR DETECTION GENERATOR CURRENT; CURRENT 1A; 5A	3
0610272	MODULE:ANALOG INPUT;I/P 4-20 MA;24 VDC,MODULE: TYPE: ANALOG INPUT; INPUT: 4-20 MA; POWER SOURCE: 24 VDC; APPLICATION: TURBINE CONTROL SYSTEM; SPECIFICATION: SM336 FAIL SAFE; SUPPL P/N: 6ES73364GE00-0AB0	3
0179141	VSD:1;1500;1500;11 KW;400 VAC,DRIVE, VARIABLE SPEED: RATIO: 1; INPUT RPM: 1500; OUTPUT RPM: 1500; POWER: 11 KW; POWER SOURCE: 400 V AC; SUPPL P/N: ATV320D11N4B; WITH HEAT SINK;	3
0629919	MODULE:SIMOCODE MANAGEMENT;MOTOR,MODULE: TYPE: SIMOCODE MANAGEMENT; APPLICATION: MOTOR; DIMENSIONS: WD 120 X HT 90 X DP 145 MM; SUPPL P/N: 3UF7113-1AA00-0	3
0234022	MODULE:SIMATIC SEPARATOR;S7-300 PLC,MODULE: TYPE: SIMATIC SEPARATOR; APPLICATION: S7-300 PLC; SUPPL P/N: 6ES7 195-7KF00-0XA0; SAFETY PROTECTOR; BUS ET200	1
0237378	MODULE:SIMATIC S7-400;24 V,MODULE: TYPE: SIMATIC S7-400; POWER SOURCE: 24 V; APPLICATION: SYNC SUBMODULE; SUPPL P/N: 6ES79601AA000XA0	1
0238425	MODULE:PROFIBUS;24 V,MODULE: TYPE: PROFIBUS; POWER SOURCE: 24 V; SUPPL P/N: 6GK1502-3CA10	1
0241226	MODULE:PROFIBUS;I/P 4-20 MA;O/P 4-20 MA,MODULE: TYPE: PROFIBUS; INPUT: 4-20 MA; OUTPUT: 4-20 MA; POWER SOURCE: 24 V; SUPPL P/N: 6GK1503-3CA00	1

0252636	MODULE COMM:OPTICAL LINK PROFIBUS,MODULE, COMMUNICATION: TYPE: OPTICAL LINK PROFIBUS; APPLICATION: STACKER/SPREADER DHP; REFERENCE NO: OLM/G12 V4.0; SUPPL P/N: 6GK15033CB00; W 1 RS485 & 2 GLASS-FOC-INTERFACES (4 BFOC-SOCKE TS) FOR STANDARD DISTANCES UP TO 2850 M, WITH SIGNAL, CONTACT & MEASURING OUTPUT	1
0252828	MODULE:PROFIBUS,MODULE: TYPE: PROFIBUS; APPLICATION: SIMATIC S7 NET, 12 MS, 90 DEG ANGLE CONNECTORS; SUPPL P/N: 6ES7972-0BB60-0XA0	1
0256393	MODULE:REPEATER RS485;DHP SIMATIC DP,MODULE: TYPE: REPEATER RS485; APPLICATION: DHP SIMATIC DP; SUPPL P/N: 6ES7972-0AA01-0XA0; FOR THE CONNECTION OF PROFIBUS/MPI BUS SYSTEMS WITH MAXIMUM 31 NODES; 12 MBIT/S, DEGREE OF PROTECTION IP20	1
0501089	MODULE:SOFT STATER;2400 VDC; 250KW,MODULE: TYPE: SOFT STATER; POWER SOURCE: 2400 VDC; 250KW; MANUF P/N: 3RW4447-6BC45; CLASS 10	1
0501124	MODULE:SUMMATION CT,MODULE: TYPE: SUMMATION CT; MANUF P/N: 3UL2203-1B	1
0501125	MODULE:SIMOCODE EARTH FAULT,MODULE: TYPE: SIMOCODE EARTH FAULT; MANUF P/N: 3UF7500-1AA00-0	1
0501127	MODULE:CURRENT MEASURING;I/P 63-630 A,MODULE: TYPE: CURRENT MEASURING; INPUT: 63-630 A; MANUF P/N: 3UF7114-1BA00-0; SIMOCODE CT/VT; V BUS BAR	1
0501522	MODULE:PLC,MODULE: APPLICATION: PLC; MANUF P/N: 6ES7221-7KF02-OABO	1
0501523	MODULE:DIGITAL INPUT;PLC,MODULE: TYPE: DIGITAL INPUT; APPLICATION: PLC; MANUF P/N: 6ES7322-1BH02-0AA0	1
0552769	MODULE:INTERFACE;I/P 24 VDC;O/P 4-20 MA,MODULE: TYPE: INTERFACE; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; DIMENSIONS: WD 400 X LG 200 MM; SPECIFICATION: CCR70; MANUF P/N: 3BDH000512R1	1
0552770	MODULE:O/P 4-20 MA;24 VDC;SPEC SD891,MODULE: OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; SPECIFICATION: SD891; MANUF P/N: 3BDH000554R1; ID 300MM X LG 100MM	1
0552771	MODULE:DIGITAL/ANALOG I/O;I/P 24 VDC,MODULE: TYPE: DIGITAL/ANALOG I/O; INPUT: 24 VDC; OUTPUT: 4-20 MA; DIMENSIONS: WD 150 X LG 250 MM; SPECIFICATION: S 500; MANUF P/N: DA501	1

0552772	MODULE:CPU;O/P 4-20 MA;PLC;SPEC AC 500,MODULE: TYPE: CPU; OUTPUT: 4-20 MA; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 250 MM; SPECIFICATION: AC 500; MANUF P/N: TB521	1
0552774	MODULE:ANALOG INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: ANALOG INPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; MANUF P/N: 3BDH000720R1	1
0552777	MODULE:CPU;I/P 24 VDC;O/P 4-20 MA,MODULE: TYPE: CPU; INPUT: 24 VDC; OUTPUT: 4-20 MA; SPECIFICATION: AC 870; MANUF P/N: 3BD000606R1; APPLICATION: MELODY800XA	1
552778	MODULE:COMMUNICATION;I/P 24 VDC;24 VDC,MODULE: TYPE: COMMUNICATION; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 200 MM; SPECIFICATION: PROFIBUS DP; MANUF P/N: CM272	1
0552779	MODULE:I/P 24 VDC;O/P 4-20 MA,MODULE: INPUT: 24 VDC; OUTPUT: 4-20 MA; DIMENSIONS: WD 300 X LG 100 MM; SPECIFICATION: CI 150; MANUF P/N: 3BDH000616R1	1
0552780	MODULE:ANALOG INPUT CARD;I/P 24 VDC,MODULE: TYPE: ANALOG INPUT CARD; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 250 MM; MANUF P/N: AI 561	1
0552781	MODULE:BINARY INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: BINARY INPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; DIMENSIONS: WD 300 X LG 100 MM; SPECIFICATION: CBI 20; MANUF P/N: 3BDH000730R1	1
0566343	MODULE:ESP CONTROLLER;I/P 24VDC 110VAC,MODULE: TYPE: ESP CONTROLLER; INPUT: 24VDC 110VAC; OUTPUT: 4-20 MA; POWER SOURCE: 20-0-20VAC; 47-63HZ; APPLICATION: ELECTROSTATIC PRECIPITATOR; DIMENSIONS: WD 400 X HT 250 X THK 100 MM; REFERENCE NO: MCS2	1
0575240	MODULE COMM:ANALOG EXTENTION;SWITCHGEAR,MODULE, COMMUNICATION: TYPE: ANALOG EXTENTION; INPUT: 2 ANALOG 4-20MA; APPLICATION: SWITCHGEAR; MANUF P/N: 3UF7400-1AA0-0; IP20	1

0575252	MODULE COMM:DIGITAL EXTENTION,MODULE, COMMUNICATION: TYPE: DIGITAL EXTENTION; INPUT: 4 DIGITAL; OUTPUT: 2 RELAY; APPLICATION: SWITCHGEAR; MANUF P/N: 3UF7300-1AU00-0	1
0575274	MODULE:MOTOR MANAGMENT;I/P 24 V;MOTOR,MODULE: TYPE: MOTOR MANAGMENT; INPUT: 24 V; OUTPUT: 100- 240 VAC; APPLICATION: MOTOR; DIMENSIONS: 45 X 111 X 124 MM; SPECIFICATION: PRO-V SIMOCODE; MANUF P/N: 3UF7010-1AU00-0	1
0580168	MODULE:ANALOG OUTPUT;O/P 4-20 MA;24 V,MODULE: TYPE: ANALOG OUTPUT; OUTPUT: 4-20 MA; POWER SOURCE: 24 V; MANUF P/N: 3BSE008546R0001; REFERENCE NO: AO820; 4 CHANNEL	1
0582397	MODULE:LOCKOUT POSITION INDICATION,MODULE: TYPE: LOCKOUT POSITION INDICATION; INPUT: 24 VDC; POWER SOURCE: 400UA; APPLICATION: CONVEYOR PULL KEY SYSTEM; DIMENSIONS: WD 150 X LG 28 MM; MANUF P/N: 123-1017	1
0582398	MODULE:TERMINATION UNIT;I/P 24 VDC,MODULE: TYPE: TERMINATION UNIT; INPUT: 24 VDC; OUTPUT: 24VDC 28MA; POWER SOURCE: 86-1.2 KHZ; APPLICATION: CONVEYOR PULL KEY SYSTEM; MANUF P/N: 123-1020	1
0584570	MODULE:INTERFACE;I/P 125VAC/DC,MODULE: TYPE: INTERFACE; INPUT: 125VAC/DC; OUTPUT: 125VAC/DC; POWER SOURCE: 1.5 TO 2.5 A; DIMENSIONS: WD 38.8 X HT 77 X DP 58.5 MM; SPECIFICATION: FLKM-D 9 SUB/B; MANUF P/N: HIEB410237P0006; 9 POSITIONS; ANY MOUNTING TYPE	1
0584572	MODULE:INTERFACE;I/P 125VAC/DC,MODULE: TYPE: INTERFACE; INPUT: 125VAC/DC; OUTPUT: 125VAC/DC; POWER SOURCE: 1.5 TO 2.5 A; DIMENSIONS: WD 33.8 X HT 77 X DP 58.5 MM; SPECIFICATION: FLKM-D 9 SUB/B; MANUF P/N: HIEB410237P0005; 9 POSITIONS; ANY MOUNTING TYPE	1
0585807	MODULE:MICRO MEMORY CARD;24 V,MODULE: TYPE: MICRO MEMORY CARD; POWER SOURCE: 24 V; APPLICATION: SIMATIC S7-300; MANUF P/N: 6ES7953- 8LJ20-0AA0	1

0585808	MODULE:POWER CONVERTER;24 VDC,MODULE: TYPE: POWER CONVERTER; POWER SOURCE: 24 V DC; MANUF P/N: 6SE7031-8EF60-7-K11L20; SIMOVERT MASTERDRIVE	1
0588490	MODULE COMM:PROCESSOR,MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6AV1242-OABOO	1
0588491	MODULE COMM:PROCESSOR,MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6ES5530-7LA12	1
0588492	MODULE COMM:PROCESSOR,MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6ES5535-3BL11	1
0588493	MODULE:PLC INTERFACE,MODULE: TYPE: PLC INTERFACE; MANUF P/N: 6ES5143-3SA11	1
0588494	MODULE:CENTRAL CONTROLLER,MODULE: TYPE: CENTRAL CONTROLLER; MANUF P/N: 6ES5155-3UA21	1
0588495	MODULE:DIGITAL INPUT,MODULE: TYPE: DIGITAL INPUT; MANUF P/N: 6ES5430-4UA12	1
0588496	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5451-4UA12	1
0588497	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5451-7LA11	1
0588498	MODULE:ANALOG INPUT,MODULE: TYPE: ANALOG INPUT; MANUF P/N: 6ES5460-4UA12	1
0588499	MODULE:ANALOG INPUT,MODULE: TYPE: ANALOG INPUT; MANUF P/N: 6ES5460-7LA11	1
0588500	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5511-5AA14	1
0588502	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5946-3UA22	1
0588503	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5947-3UA22	1
0588504	MODULE:PLC,MODULE: TYPE: PLC; MANUF P/N: 6ES5955-3NF11	1
0588505	MODULE:MASTER,MODULE: TYPE: MASTER; MANUF P/N: 7KE4490-2BN	1
0588815	MODULE:NETWORK MANAGED IE SWITCH,MODULE: TYPE: NETWORK MANAGED IE SWITCH; MANUF P/N: 204-2BC10-2AA3; SCALANCE X204-243	1
0588816	MODULE:PLC INTERFACE,MODULE: TYPE: PLC INTERFACE; MANUF P/N: 6ES5314-3UH12; S5 MODULE	1
0589110	MODULE COMM:S5 PLC,MODULE, COMMUNICATION: TYPE: S5 PLC; MANUF P/N: 6ES5512-5BC22	1

0589111	MODULE PWR SUP:PLC;I/P 24 V;O/P 24 V,MODULE, POWER SUPPLY: TYPE: PLC; INPUT: 24 V; OUTPUT: 24 V; MANUF P/N: 6ES5455-3NC11	1
0589112	MODULE PWR SUP:PLC;I/P 24 V;O/P 24 V,MODULE, POWER SUPPLY: TYPE: PLC; INPUT: 24 V; OUTPUT: 24 V; MANUF P/N: 6ES5951-7ND12	1
0589113	MODULE:INTERFACE RELAY,MODULE: TYPE: INTERFACE RELAY; MANUF P/N: 38.51.0.024; FINDER MODULAR	1
0589114	MODULE:ANALOG TC I/P,MODULE: TYPE: ANALOG TC I/P; MANUF P/N: 6ES5340-3KB42	1
0589115	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5947-7LA12	1
0589116	MODULE:SIMATIC DIGITAL INPUT;O/P 24 V,MODULE: TYPE: SIMATIC DIGITAL INPUT; OUTPUT: 24 V; MANUF P/N: 6ES7321-1BPOO-OAAO; OPTICALLY ISOLATED IN GROUPS OF 16.64 DI; SM221	1
0589117	MODULE:TERMINAL,MODULE: TYPE: TERMINAL; MANUF P/N: 6ES7392-1AN00-OAA0; WITH SCREW TYPE FOR 64 CHANNEL	1
0589118	MODULE:PRE WIRED CONNECTOR,MODULE: TYPE: PRE WIRED CONNECTOR; MANUF P/N: 6ES7392-4BC50-OAA0	1
0589119	MODULE:ET200M,MODULE: TYPE: ET200M; SUPPL P/N: 6ES7153-2AR04-0XA0	1
0589120	MODULE COMM:S5 PLC,MODULE, COMMUNICATION: TYPE: S5 PLC; MANUF P/N: 6ES5512-5BC21	1
0589121	MODULE:SIMATIC DIGITAL OUTPUT SM322,MODULE: TYPE: SIMATIC DIGITAL OUTPUT SM322; MANUF P/N: 6ES7322-1BP00-OAAO; OPTICALLY ISOLATED IN GROUPS OF 16.16 DO; 24VDC	1
0589122	MODULE:ANALOG INPUT MODULE,MODULE: TYPE: ANALOG INPUT MODULE; MANUF P/N: 6ES5470-4UC11; S5 PLC	1
0589577	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5324-3UA11	1
0589578	MODULE:DIGITAL INPUT,MODULE: TYPE: DIGITAL INPUT; MANUF P/N: 6ES5436-7LA11	1
0589579	MODULE:CPU 412-5H;SPEC SIMATIC S7-400,MODULE: TYPE: CPU 412-5H; SPECIFICATION: SIMATIC S7-400; SUPPL P/N: S7400-CPU-412-5H	1
0589580	MODULE COMM:PLC,MODULE, COMMUNICATION: TYPE: PLC; MANUF P/N: 6ES5530-7LA11	1
0589581	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES7315-2EH130-0AB0	1
0589582	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5942-7UA12	1

0589583	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5452-8MR11	1
0589584	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5458-4UA11	1
0589585	MODULE,MODULE: TYPE: ADDER LINK X100PLUS AUDIO EXTENDER; MANUF P/N: X100A-USB/P-UK	1
0589586	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5941-7UA12	1
0589587	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5458-7LB11	1
0589588	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5456-7LA11	1
0589589	MODULE:FRONT CONNECTOR,MODULE: TYPE: FRONT CONNECTOR; MANUF P/N: 6ES7392-1AM00-0AA0; SIMATIC S7-300; 392 WITH SCREW CONTRACTS, 40 PIN	1
0589590	MODULE:SIMATIC;SPEC S7-300,MODULE: TYPE: SIMATIC; SPECIFICATION: S7-300; MANUF P/N: 6ES7390-1AF30-0AA0	1
0612784	MODULE:FAST DIODE;I/P 800 V 105 A,MODULE: TYPE: FAST DIODE; INPUT: 800 V 105 A; APPLICATION: DC CHOPPER; DIMENSIONS: WD 30 X LG 92 X HT 20 MM; MANUF P/N: SKMD-105F08	1
0612785	MODULE:FAST DIODE;I/P 800 V 105 A,MODULE: TYPE: FAST DIODE; INPUT: 800 V 105 A; APPLICATION: DC CHOPPER; DIMENSIONS: WD 30 X LG 92 X HT 20 MM; MANUF P/N: SKND-105F08	1
0612786	MODULE:LAMP TEST;250 VDC,MODULE: TYPE: LAMP TEST; POWER SOURCE: 250 V DC; DIMENSIONS: WD 90 X LG 75 X HT 55 MM; MANUF P/N: EMG90-DIO-16E/LP	1
0612787	MODULE:DIODE;250 VDC,MODULE: TYPE: DIODE; POWER SOURCE: 250 V DC; DIMENSIONS: WD 75 X LG 55 X HT 45 MM; MANUF P/N: EMG45-DIO-8E	1
0612789	MODULE:OPTO-COUPLER;I/P 24 VDC;24 VDC,MODULE: TYPE: OPTO-COUPLER; INPUT: 24 VDC; OUTPUT: 3-33 VDC; POWER SOURCE: 24 V DC; APPLICATION: PLC INTERFACE; DIMENSIONS: WD 80 X LG 94 X THK 6.2 MM; MANUF P/N: PLC-OSC-24DC/24DC/2; MOUNTING DIN RAIL NS 35/7.5	1
0630011	MODULE:CURRENT;24 V;SIMOCODE EARTH FAULT,MODULE: TYPE: CURRENT; POWER SOURCE: 24 V; APPLICATION: SIMOCODE EARTH FAULT; DIMENSIONS: WD 22.5 X HT 92 X DP 124 MM; SPECIFICATION: IEC 60721; SUPPL P/N: 3UF7510-1AA00-0	1

0632239	MODULE:COMMUNICATION,MODULE: TYPE: COMMUNICATION; MANUF P/N: 6GK443-1EX30-0XE0; CP443-1; V2.3.S7 CP FOR INDUSTRIAL ETHERNET ISO AND TCP/IP WITH SEND; RECEIVE AND FETCH; WRITE INTERFACE; LONG DATA; UDP; TCP ISO; S7 COMMUNICATION; ROUTING; MODULE REPLACEMENT WITHOUT PG 10/100 MBPS; INITIALIZATION OVER LAN; IP MULTICAST; NTP; ACCESS PROTECTION WITH IP-ACL; FIRMWARE V2.3	1
0252636	MODULE COMM:OPTICAL LINK PROFIBUS,MODULE, COMMUNICATION: TYPE: OPTICAL LINK PROFIBUS; APPLICATION: STACKER/SPREADER DHP; SUPPL P/N: 6GK15033CB00; REFERENCE NO: OLM/G12 V4.0; W 1 RS485 & 2 GLASS-FOC-INTERFACES (4 BFOC-SOCKE TS) FOR STANDARD DISTANCES UP TO 2850 M, WITH SIGNAL, CONTACT & MEASURING OUTPUT	1
0252828	MODULE:PROFIBUS,MODULE: TYPE: PROFIBUS; APPLICATION: SIMATIC S7 NET, 12 MS, 90 DEG ANGLE CONNECTORS; SUPPL P/N: 6ES7972-0BB60-0XA0	1
0253442	MODULE:ANALOG OUTPUT,MODULE: TYPE: ANALOG OUTPUT; SUPPL P/N: 3UF7400-1AA00-0	1
0256393	MODULE:REPEATER RS485;DHP SIMATIC DP,MODULE: TYPE: REPEATER RS485; APPLICATION: DHP SIMATIC DP; SUPPL P/N: 6ES7972-0AA01-0XA0; FOR THE CONNECTION OF PROFIBUS/MPI BUS SYSTEMS WITH MAXIMUM 31 NODES; 12 MBIT/S, DEGREE OF PROTECTION IP20	1
0662077	MODULE:T224380;TEMPERATURE-TR400,MODULE: TYPE: TEMPERATURE-TR400; INPUT: 24-240 VDC; OUTPUT: 1250 VA; APPLICATION: TEMPERATURE MONITOR; OEM P/N: T224380; PT100 TEMPERATURE RELAYS TYPE TR400 DIGITAL; 4 SENSORS; 4 LIMITS	1
0662078	MODULE:T224360;TEMPERATURE-TR600,MODULE: TYPE: TEMPERATURE-TR600; INPUT: 24-240 VDC; OUTPUT: 1250 VA; APPLICATION: TEMPERATURE MONITOR; OEM P/N: T224360; PT100 TEMPERATURE RELAYS TYPE TR600 DIGITAL; 6 SENSORS; 6 LIMITS; 2 ANALOG OUTPUT	1
0664773	MODULE:6SL3130-7TE21-6AA4;ACTIVE LINE,MODULE: TYPE: ACTIVE LINE; APPLICATION: SAMPLING PLANT; SPECIFICATION: SINAMICS S120; OEM P/N: 6SL3130-7TE21-6AA4	1

0664774	MODULE:3UF710-1AA00-0;SAMPLING PLANT,MODULE: TYPE: SIMOCODE GROUND-FAULT; APPLICATION: SAMPLING PLANT; OEM P/N: 3UF710-1AA00-0	1
0664775	MODULE:6SL3100-0BE21-6AB0,MODULE: TYPE: ACTIVE INTERFACE; APPLICATION: SAMPLING PLANT; SPECIFICATION: SINAMICS S120; OEM P/N: 6SL3100-0BE21-6AB0	1
0664776	MODULE:3RK3111-1AA10;SIRIUS 3RK3;24 VDC,MODULE: TYPE: SIRIUS 3RK3; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 45 MM; OEM P/N: 3RK3111-1AA10; 3RK3 4/8 F-DI; 1F-RO; IF-DO; PARAMETERIZABLE VIA SW MISS ES; TERMINAL: SCREW UP TO SIL3	1
0664777	MODULE:3RK3211-1AA10;SIRIUS 3RK32;24 VDC,MODULE: TYPE: SIRIUS 3RK32; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 22.5 MM; OEM P/N: 3RK3211-1AA10	1
0664779	MODULE:3RK3251-1AA10;SIRIUS 3RK32,MODULE: TYPE: SIRIUS 3RK32; POWER SOURCE: 24VDC 2A; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 45 MM; OEM P/N: 3RK3251-1AA10	1
0664780	MODULE:3UF7010-1AB00-0;SIMODOCODE PRO-V,MODULE: TYPE: SIMODOCODE PRO-V; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; OEM P/N: 3UF7010-1AB00-0	1
0664909	MODULE:6SL3055-0AA00-5BA3;SENSOR,MODULE: TYPE: SENSOR; APPLICATION: SAMPLING PLANT SMC20 MODULES; SPECIFICATION: SINAMATICS S120; OEM P/N: 6SL3055-0AA00-5BA3	1
0664910	MODULE:6SL3120-1TE23-0AA4;MOTOR,MODULE: TYPE: MOTOR; APPLICATION: SAMPLING PLANT FOR 15KW MOTOR; OEM P/N: 6SL3120-1TE23-0AA4	1
0664911	MODULE:CURRENT MEASURING;I/P 0.3-3 A,MODULE: TYPE: CURRENT MEASURING; INPUT: 0.3-3 A; APPLICATION: SAMPLING PLANT; SUPPL P/N: 3UF7100-1AA00-0	1
0664912	MODULE:6SL3054-0EJ00-1BA0,MODULE: TYPE: COMPACT FLASH CARD; APPLICATION: SAMPLING PLANT; OEM P/N: 6SL3054-0EJ00-1BA0	1
0501089	MODULE:SOFT STATER;2400 VDC; 250KW,MODULE: TYPE: SOFT STATER; POWER SOURCE: 2400 VDC; 250KW; MANUF P/N: 3RW4447-6BC45; CLASS 10	1

0501124	MODULE:SUMMATION CT,MODULE: TYPE: SUMMATION CT; MANUF P/N: 3UL2203-1B	1
0501125	MODULE:SIMOCODE EARTH FAULT,MODULE: TYPE: SIMOCODE EARTH FAULT; MANUF P/N: 3UF7500-1AA00-0	1
0501127	MODULE:CURRENT MEASURING;I/P 63-630 A,MODULE: TYPE: CURRENT MEASURING; INPUT: 63-630 A; MANUF P/N: 3UF7114-1BA00-0; SIMOCODE CT/VT; V BUS BAR	1
0501522	MODULE:PLC,MODULE: APPLICATION: PLC; MANUF P/N: 6ES7221-7KF02-OABO	1
0501523	MODULE:DIGITAL INPUT;PLC,MODULE: TYPE: DIGITAL INPUT; APPLICATION: PLC; MANUF P/N: 6ES7322-1BH02-0AA0	1
0552769	MODULE:INTERFACE;I/P 24 VDC;O/P 4-20 MA,MODULE: TYPE: INTERFACE; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; DIMENSIONS: WD 400 X LG 200 MM; SPECIFICATION: CCR70; MANUF P/N: 3BDH000512R1	1
0552770	MODULE:O/P 4-20 MA;24 VDC;SPEC SD891,MODULE: OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; SPECIFICATION: SD891; MANUF P/N: 3BDH000554R1; ID 300MM X LG 100MM	1
0552771	MODULE:DIGITAL/ANALOG I/O;I/P 24 VDC,MODULE: TYPE: DIGITAL/ANALOG I/O; INPUT: 24 VDC; OUTPUT: 4-20 MA; DIMENSIONS: WD 150 X LG 250 MM; SPECIFICATION: S 500; MANUF P/N: DA501	1
0552772	MODULE:CPU;O/P 4-20 MA;PLC;SPEC AC 500,MODULE: TYPE: CPU; OUTPUT: 4-20 MA; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 250 MM; SPECIFICATION: AC 500; MANUF P/N: TB521	1
0552774	MODULE:ANALOG INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: ANALOG INPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; MANUF P/N: 3BDH000720R1	1
0552777	MODULE:CPU;I/P 24 VDC;O/P 4-20 MA,MODULE: TYPE: CPU; INPUT: 24 VDC; OUTPUT: 4-20 MA; SPECIFICATION: AC 870; MANUF P/N: 3BD000606R1; APPLICATION: MELODY800XA	1
0552778	MODULE:COMMUNICATION;I/P 24 VDC;24 VDC,MODULE: TYPE: COMMUNICATION; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 200 MM; SPECIFICATION: PROFIBUS DP; MANUF P/N: CM272	1

0552779	MODULE:I/P 24 VDC;O/P 4-20 MA,MODULE: INPUT: 24 VDC; OUTPUT: 4-20 MA; DIMENSIONS: WD 300 X LG 100 MM; SPECIFICATION: CI 150; MANUF P/N: 3BDH000616R1	1
0552780	MODULE:ANALOG INPUT CARD;I/P 24 VDC,MODULE: TYPE: ANALOG INPUT CARD; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; APPLICATION: PLC; DIMENSIONS: WD 150 X LG 250 MM; MANUF P/N: AI 561	1
0552781	MODULE:BINARY INPUT;I/P 24 VDC;24 VDC,MODULE: TYPE: BINARY INPUT; INPUT: 24 VDC; OUTPUT: 4-20 MA; POWER SOURCE: 24 V DC; DIMENSIONS: WD 300 X LG 100 MM; SPECIFICATION: CBI 20; MANUF P/N: 3BDH000730R1	1
0566343	MODULE:ESP CONTROLLER;I/P 24VDC 110VAC,MODULE: TYPE: ESP CONTROLLER; INPUT: 24VDC 110VAC; OUTPUT: 4-20 MA; POWER SOURCE: 20-0-20VAC; 47-63HZ; APPLICATION: ELECTROSTATIC PRECIPITATOR; DIMENSIONS: WD 400 X HT 250 X THK 100 MM; REFERENCE NO: MCS2	1
0575240	MODULE COMM:ANALOG EXTENTION;SWITCHGEAR,MODULE, COMMUNICATION: TYPE: ANALOG EXTENTION; INPUT: 2 ANALOG 4-20MA; APPLICATION: SWITCHGEAR; MANUF P/N: 3UF7400-1AA0-0; IP20	1
0575252	MODULE COMM:DIGITAL EXTENTION,MODULE, COMMUNICATION: TYPE: DIGITAL EXTENTION; INPUT: 4 DIGITAL; OUTPUT: 2 RELAY; APPLICATION: SWITCHGEAR; MANUF P/N: 3UF7300-1AU00-0	1
0575274	MODULE:MOTOR MANAGMENT;I/P 24 V;MOTOR,MODULE: TYPE: MOTOR MANAGMENT; INPUT: 24 V; OUTPUT: 100-240 VAC; APPLICATION: MOTOR; DIMENSIONS: 45 X 111 X 124 MM; SPECIFICATION: PRO-V SIMOCODE; MANUF P/N: 3UF7010-1AU00-0	1
0580168	MODULE:ANALOG OUTPUT;O/P 4-20 MA;24 V,MODULE: TYPE: ANALOG OUTPUT; OUTPUT: 4-20 MA; POWER SOURCE: 24 V; MANUF P/N: 3BSE008546R0001; REFERENCE NO: AO820; 4 CHANNEL	1
0582397	MODULE:LOCKOUT POSITION INDICATION,MODULE: TYPE: LOCKOUT POSITION INDICATION; INPUT: 24 VDC; POWER SOURCE: 400UA; APPLICATION: CONVEYOR PULL KEY SYSTEM; DIMENSIONS: WD 150 X LG 28 MM; MANUF P/N: 123-1017	1

0582398	MODULE:TERMINATION UNIT;I/P 24 VDC,MODULE: TYPE: TERMINATION UNIT; INPUT: 24 VDC; OUTPUT: 24VDC 28MA; POWER SOURCE: 86-1.2 KHZ; APPLICATION: CONVEYOR PULL KEY SYSTEM; MANUF P/N: 123-1020	1
0584570	MODULE:INTERFACE;I/P 125VAC/DC,MODULE: TYPE: INTERFACE; INPUT: 125VAC/DC; OUTPUT: 125VAC/DC; POWER SOURCE: 1.5 TO 2.5 A; DIMENSIONS: WD 38.8 X HT 77 X DP 58.5 MM; SPECIFICATION: FLKM-D 9 SUB/B; MANUF P/N: HIEB410237P0006; 9 POSITIONS; ANY MOUNTING TYPE	1
0584572	MODULE:INTERFACE;I/P 125VAC/DC,MODULE: TYPE: INTERFACE; INPUT: 125VAC/DC; OUTPUT: 125VAC/DC; POWER SOURCE: 1.5 TO 2.5 A; DIMENSIONS: WD 33.8 X HT 77 X DP 58.5 MM; SPECIFICATION: FLKM-D 9 SUB/B; MANUF P/N: HIEB410237P0005; 9 POSITIONS; ANY MOUNTING TYPE	1
0585807	MODULE: TYPE: MICRO MEMORY CARD; POWER SOURCE: 24 V; APPLICATION: SIMATIC S7-300; MANUF P/N: 6ES7953-8LJ20-0AA0	1
0585808	MODULE: TYPE: POWER CONVERTER; POWER SOURCE: 24 V DC; MANUF P/N: 6SE7031-8EF60-7-K11L20; SIMOVERT MASTERDRIVE	1
0588490	MODULE COMM:PROCESSOR MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6AV1242-OABOO	1
0588491	MODULE COMM:PROCESSOR,MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6ES5530-7LA12	1
0588492	MODULE COMM:PROCESSOR,MODULE, COMMUNICATION: TYPE: PROCESSOR; MANUF P/N: 6ES5535-3BL11	1
0588493	MODULE:PLC INTERFACE,MODULE: TYPE: PLC INTERFACE; MANUF P/N: 6ES5143-3SA11	1
0588494	MODULE:CENTRAL CONTROLLER,MODULE: TYPE: CENTRAL CONTROLLER; MANUF P/N: 6ES5155-3UA21	1
0588495	MODULE:DIGITAL INPUT,MODULE: TYPE: DIGITAL INPUT; MANUF P/N: 6ES5430-4UA12	1
0588496	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5451-4UA12	1
0588497	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5451-7LA11	1
0588498	MODULE:ANALOG INPUT,MODULE: TYPE: ANALOG INPUT; MANUF P/N: 6ES5460-4UA12	1

0588499	MODULE:ANALOG INPUT,MODULE: TYPE: ANALOG INPUT; MANUF P/N: 6ES5460-7LA11	1
0588500	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5511-5AA14	1
0588502	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5946-3UA22	1
0588503	MODULE:CPU,MODULE: TYPE: CENTRAL PROCESSING UNIT; MANUF P/N: 6ES5947-3UA22	1
0588504	MODULE:PLC,MODULE: TYPE: PLC; MANUF P/N: 6ES5955- 3NF11	1
0588505	MODULE:MASTER,MODULE: TYPE: MASTER; MANUF P/N: 7KE4490-2BN	1
0588815	MODULE:NETWORK MANAGED IE SWITCH,MODULE: TYPE: NETWORK MANAGED IE SWITCH; MANUF P/N: 204-2BC10- 2AA3; SCALANCE X204-243	1
0588816	MODULE:PLC INTERFACE,MODULE: TYPE: PLC INTERFACE; MANUF P/N: 6ES5314-3UH12; S5 MODULE	1
0589110	MODULE COMM:S5 PLC,MODULE, COMMUNICATION: TYPE: S5 PLC; MANUF P/N: 6ES5512-5BC22	1
0589111	MODULE PWR SUP:PLC;I/P 24 V;O/P 24 V,MODULE, POWER SUPPLY: TYPE: PLC; INPUT: 24 V; OUTPUT: 24 V; MANUF P/N: 6ES5455-3NC11	1
0589112	MODULE PWR SUP:PLC;I/P 24 V;O/P 24 V,MODULE, POWER SUPPLY: TYPE: PLC; INPUT: 24 V; OUTPUT: 24 V; MANUF P/N: 6ES5951-7ND12	1
0589113	MODULE:INTERFACE RELAY,MODULE: TYPE: INTERFACE RELAY; MANUF P/N: 38.51.0.024; FINDER MODULAR	1
0589114	MODULE:ANALOG TC I/P,MODULE: TYPE: ANALOG TC I/P; MANUF P/N: 6ES5340-3KB42	1
0589115	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5947- 7LA12	1
0589116	MODULE:SIMATIC DIGITAL INPUT;O/P 24 V,MODULE: TYPE: SIMATIC DIGITAL INPUT; OUTPUT: 24 V; MANUF P/N: 6ES7321-1BPOO-OAAO; OPTICALLY ISOLATED IN GROUPS OF 16.64 DI; SM221	1
0589117	MODULE:TERMINAL,MODULE: TYPE: TERMINAL; MANUF P/N: 6ES7392-1AN00-OAA0; WITH SCREW TYPE FOR 64 CHANNEL	1
0589118	MODULE:PRE WIRED CONNECTOR,MODULE: TYPE: PRE WIRED CONNECTOR; MANUF P/N: 6ES7392-4BC50-OAA0	1
0589119	MODULE:ET200M,MODULE: TYPE: ET200M; SUPPL P/N: 6ES7153-2AR04-0XA0	1

0589120	MODULE COMM:S5 PLC,MODULE, COMMUNICATION: TYPE: S5 PLC; MANUF P/N: 6ES5512-5BC21	1
0589121	MODULE:SIMATIC DIGITAL OUTPUT SM322,MODULE: TYPE: SIMATIC DIGITAL OUTPUT SM322; MANUF P/N: 6ES7322-1BP00-OAAO; OPTICALLY ISOLATED IN GROUPS OF 16.16 DO; 24VDC	1
0589122	MODULE:ANALOG INPUT MODULE,MODULE: TYPE: ANALOG INPUT MODULE; MANUF P/N: 6ES5470-4UC11; S5 PLC	1
0589577	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5324- 3UA11	1
0589578	MODULE:DIGITAL INPUT,MODULE: TYPE: DIGITAL INPUT; MANUF P/N: 6ES5436-7LA11	1
0589579	MODULE:CPU 412-5H;SPEC SIMATIC S7-400,MODULE: TYPE: CPU 412-5H; SPECIFICATION: SIMATIC S7-400; SUPPL P/N: S7400-CPU-412-5H	1
0589580	MODULE COMM:PLC,MODULE, COMMUNICATION: TYPE: PLC; MANUF P/N: 6ES5530-7LA11	1
0589581	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES7315- 2EH130-0AB0	1
0589582	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5942- 7UA12	1
0589583	MODULE:DIGITAL OUTPUT,MODULE: TYPE: DIGITAL OUTPUT; MANUF P/N: 6ES5452-8MR11	1
0589584	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5458-4UA11	1
0589585	MODULE,MODULE: TYPE: ADDER LINK X100PLUS AUDIO EXTENDER; MANUF P/N: X100A-USB/P-UK	1
0589586	MODULE:CPU,MODULE: TYPE: CPU; MANUF P/N: 6ES5941- 7UA12	1
0589587	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5458-7LB11	1
0589588	MODULE:RELAY OUTPUT,MODULE: TYPE: RELAY OUTPUT; MANUF P/N: 6ES5456-7LA11	1
0589589	MODULE:FRONT CONNECTOR,MODULE: TYPE: FRONT CONNECTOR; MANUF P/N: 6ES7392-1AM00-0AA0; SIMATIC S7-300; 392 WITH SCREW CONTRACTS, 40 PIN	1
0589590	MODULE:SIMATIC;SPEC S7-300,MODULE: TYPE: SIMATIC; SPECIFICATION: S7-300; MANUF P/N: 6ES7390-1AF30-0AA0	1
0612784	MODULE:FAST DIODE;I/P 800 V 105 A,MODULE: TYPE: FAST DIODE; INPUT: 800 V 105 A; APPLICATION: DC CHOPPER; DIMENSIONS: WD 30 X LG 92 X HT 20 MM; MANUF P/N: SKMD-105F08	1

0612785	MODULE:FAST DIODE;I/P 800 V 105 A,MODULE: TYPE: FAST DIODE; INPUT: 800 V 105 A; APPLICATION: DC CHOPPER; DIMENSIONS: WD 30 X LG 92 X HT 20 MM; MANUF P/N: SKND-105F08	1
0612786	MODULE:LAMP TEST;250 VDC,MODULE: TYPE: LAMP TEST; POWER SOURCE: 250 V DC; DIMENSIONS: WD 90 X LG 75 X HT 55 MM; MANUF P/N: EMG90-DIO-16E/LP	1
0612787	MODULE:DIODE;250 VDC,MODULE: TYPE: DIODE; POWER SOURCE: 250 V DC; DIMENSIONS: WD 75 X LG 55 X HT 45 MM; MANUF P/N: EMG45-DIO-8E	1
0612789	MODULE:OPTO-COUPLER;I/P 24 VDC;24 VDC	1
0220913	VSD:1;1500;1500;291 KW;400 VAC	1
0224351	VSD:1;1500;1500;61 KW;400 VAC	1
0240960	VSD:1;1500;1500 RPM;5.5 KW;400 V	1
0240962	VSD:1;1500;1500 RPM;4 KW;400 V	1
0630011	MODULE:CURRENT;24 V;SIMOCODE EARTH FAULT	1
0632239	MODULE:COMMUNICATION,MODULE: TYPE: COMMUNICATION; MANUF P/N: 6GK443-1EX30-0XE0; CP443-1; V2.3.S7 CP FOR INDUSTRIAL ETHERNET ISO AND TCP/IP WITH SEND; RECEIVE AND FETCH; WRITE INTERFACE; LONG DATA; UDP; TCP ISO; S7 COMMUNICATION; ROUTING; MODULE REPLACEMENT WITHOUT PG 10/100 MBPS; INITIALIZATION OVER LAN; IP MULTICAST; NTP; ACCESS PROTECTION WITH IP-ACL; FIRMWARE V2.3	1
0662077	MODULE:T224380;TEMPERATURE-TR400,MODULE: TYPE: TEMPERATURE-TR400; INPUT: 24-240 VDC; OUTPUT: 1250 VA; APPLICATION: TEMPERATURE MONITOR; OEM P/N: T224380; PT100 TEMPERATURE RELAYS TYPE TR400 DIGITAL; 4 SENSORS; 4 LIMITS	1
0662078	MODULE:T224360;TEMPERATURE-TR600,MODULE: TYPE: TEMPERATURE-TR600; INPUT: 24-240 VDC; OUTPUT: 1250 VA; APPLICATION: TEMPERATURE MONITOR; OEM P/N: T224360; PT100 TEMPERATURE RELAYS TYPE TR600 DIGITAL; 6 SENSORS; 6 LIMITS; 2 ANALOG OUTPUT	1
0664773	MODULE:6SL3130-7TE21-6AA4;ACTIVE LINE,MODULE: TYPE: ACTIVE LINE; APPLICATION: SAMPLING PLANT; SPECIFICATION: SINAMICS S120; OEM P/N: 6SL3130-7TE21-6AA4	1
0664774	MODULE:3UF710-1AA00-0;SAMPLING PLANT,MODULE: TYPE: SIMOCODE GROUND-FAULT; APPLICATION: SAMPLING PLANT; OEM P/N: 3UF710-1AA00-0	1

0664775	MODULE:6SL3100-0BE21-6AB0,MODULE: TYPE: ACTIVE INTERFACE; APPLICATION: SAMPLING PLANT; SPECIFICATION: SINAMICS S120; OEM P/N: 6SL3100-0BE21-6AB0	1
0664776	MODULE:3RK3111-1AA10;SIRIUS 3RK3;24 VDC,MODULE: TYPE: SIRIUS 3RK3; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 45 MM; OEM P/N: 3RK3111-1AA10; 3RK3 4/8 F-DI; 1F-RO; IF-DO; PARAMETERIZABLE VIA SW MISS ES; TERMINAL: SCREW UP TO SIL3	1
0664777	MODULE:3RK3211-1AA10;SIRIUS 3RK32;24 VDC,MODULE: TYPE: SIRIUS 3RK32; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 22.5 MM; OEM P/N: 3RK3211-1AA10	1
0664779	MODULE:3RK3251-1AA10;SIRIUS 3RK32,MODULE: TYPE: SIRIUS 3RK32; POWER SOURCE: 24VDC 2A; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; DIMENSIONS: WD 45 MM; OEM P/N: 3RK3251-1AA10	1
0664780	MODULE:3UF7010-1AB00-0;SIMODOCODE PRO-V,MODULE: TYPE: SIMODOCODE PRO-V; POWER SOURCE: 24 V DC; APPLICATION: SAMPLING PLANT; MODULAR SAFETY; OEM P/N: 3UF7010-1AB00-0	1
0664781	CHOKE:SIMATICS;VSD LINE ACTIVATOR,CHOKE: TYPE: SIMATICS; OPERATION: VSD LINE ACTIVATOR; APPLICATION: SAMPLING PLANT; FOR 7.5KW SINAMICS G120 VSD; SUPPL P/N: 6SL3203-0CE21-8AA0;	1
0664791	CHOKE:SIMATICS;VSD LINE ACTIVATOR,CHOKE: TYPE: SIMATICS; OPERATION: VSD LINE ACTIVATOR; APPLICATION: SAMPLING PLANT; FOR 2.2KW SINAMICS G120 VSD; SUPPL P/N: 6SL3203-00E21-0AA0;	1
0664811	CHOKE:OUTPUT;VSD LINE ACTIVATOR,CHOKE: TYPE: OUTPUT; OPERATION: VSD LINE ACTIVATOR; APPLICATION: SAMPLING PLANT; FOR 2.2KW SINAMICS G120 VSD; SUPPL P/N: 6SL3202-0AE16-1CA0;	1
0664812	CHOKE:OUTPUT;VSD LINE ACTIVATOR,CHOKE: TYPE: OUTPUT; OPERATION: VSD LINE ACTIVATOR; APPLICATION: SAMPLING PLANT; FOR 7.5KW SINAMICS G120 VSD; SUPPL P/N: 6SL3202-0AE21-8CA0;	1

0664909	MODULE:6SL3055-0AA00-5BA3;SENSOR,MODULE: TYPE: SENSOR; APPLICATION: SAMPLING PLANT SMC20 MODULES; SPECIFICATION: SINAMATICS S120; OEM P/N: 6SL3055-0AA00-5BA3	1
0664910	MODULE:6SL3120-1TE23-0AA4;MOTOR,MODULE: TYPE: MOTOR; APPLICATION: SAMPLING PLANT FOR 15KW MOTOR; OEM P/N: 6SL3120-1TE23-0AA4	1
0664911	MODULE:CURRENT MEASURING;I/P 0.3-3 A,MODULE: TYPE: CURRENT MEASURING; INPUT: 0.3-3 A; APPLICATION: SAMPLING PLANT; SUPPL P/N: 3UF7100-1AA00-0	1
0664912	MODULE:6SL3054-0EJ00-1BA0,MODULE: TYPE: COMPACT FLASH CARD; APPLICATION: SAMPLING PLANT; OEM P/N: 6SL3054-0EJ00-1BA0	1
0579871	CONTROLLER:AC;220 V;380V 900A;WALL,CONTROLLER: TYPE: AC; RANGE: 220 V; RATING: 380V 900A; MOUNTING: WALL; MANUF P/N: 3BHB19787R0190; REFERENCE NO: DCS800-503-900-05;	1
0584895	RESISTOR:5 OHM;2.8 KW;HOUSING,RESISTOR: RESISTANCE: 5 OHM; RATING: 2.8 KW; CONNECTION: HOUSING; MATERIAL: POLYPROPYLENE; TOLERANCE: +/- 10 DIVIDE BY 0.1 PERCENT; TYPE: HIGH VOLTAGE; AIRCOOLED; MANUF P/N: 3BHB029421R0005; 100 PERCENT AT 40 DEGREES CELSIUS; 0 PERCENT AT 225 DEGREES CELSIUS	1
0626222	TRANSDUCER:PRESSURE;I/P 400 BAR,TRANSDUCER: TYPE: PRESSURE; INPUT: 400 BAR; OUTPUT: 4-20 MA; POWER SOURCE: 8-30 VDC; APPLICATION: HYDRAULIC PACK; SUPPL P/N: HDA4745-A-400-00N	1
0626223	TRANSDUCER:PRESSURE;I/P 60 BAR,TRANSDUCER: TYPE: PRESSURE; INPUT: 60 BAR; OUTPUT: 4-20 MA; POWER SOURCE: 14-42 VDC; APPLICATION: SSC HYDRAULIC PACK; SUPPL P/N: EDS410-0060-4062	1
0654525	TRANSDUCER:ACTIVE POWER;I/P 0-400 KPA,TRANSDUCER: TYPE: ACTIVE POWER; INPUT: 0-400 KPA; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; APPLICATION: MAIN PRESSURE SYSTEM; SPECIFICATION: 19.003; SUPPL P/N: 56934745-006	1

0654528	TRANSDUCER:ACTIVE;I/P 0-400 KPA;24 VDC,TRANSDUCER: TYPE: ACTIVE; INPUT: 0-400 KPA; OUTPUT: 4-20 MA; POWER SOURCE: 24 VDC; APPLICATION: CHARGE PRESSURE SYSTEM; SPECIFICATION: 19.001; SUPPL P/N: 56934745-003	1
0664813	VSD ELECT:SYNCHRONIZER;2.2-1.5 KW;3,DRIVE, VARIABLE SPEED ELECTRICAL: TYPE: SYNCHRONIZER; OUTPUT RATING: 2.2-1.5 KW; POTENTIAL: 380-480 10PCT; PHASE: 3; CURRENT: 6.10-7.7 A; SUPPL P/N: SL3210-1PE16-1UL1; SINAMICS G120 PM240-2 VSD FOR 2.2KW;	1

3 Supply Requirements

The Supply Requirements for this contract are in an Annexure A to the Contract Data provided by the *Purchaser*.

All deliveries must be done at the Kendal Power Station Stores Receiving

The delivery note must reference the order number

Deliveries must be made between 07:15 - 16:30 Monday to Thursday and Friday 07:15 – 12:15.

At times during weekends or weekdays after hours, Special deliveries might be requested during plant breakdowns.

4 Constraints on how the *Supplier* Provides the Goods

4.1 Constraints at the delivery place and place of use

- When delivering materials to site, each item must be marked with the purchase order number.
- Eskom Holdings Limited will only accept items stipulated in the Eskom Holdings Limited 's purchase order.
- No delivery will be made without a purchase order number (450....)
- Wrong deliveries will not be accepted and will be returned to the *Supplier*
- Quality Check will be done, and material with poor quality will be returned without exceptions. The *Supplier* will have to replace the goods.
- The prices include delivery but excludes VAT
- Material damaged due to inadequate protection will not be accepted on site. You are urged to ensure that sufficient packing protection is given to goods that may be susceptible to damage in transit.

NOTE: In cases where the *Supplier* employs subcontractor/s, any disagreements between the *Supplier* and their subcontractor/s shall not affect supply and/or delivery, such as the withholding of supply and/or delivery in the event of a dispute that is independent of Eskom.

4.2 Services & other things to be provided by the *Purchaser* or *Supplier*

During off loading, Eskom will assist with a fork lift.

4.3 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Supply Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Overall contract progress and feedback	As an when required	Kendal Power Station	<i>Purchaser, Supplier, and stakeholders from both parties as and when required</i>

Meetings of a specialist nature may be convened as specified elsewhere in this Goods Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the manufacture of the *goods*. Records of these meetings shall be submitted to the *Supply Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

4.4 Documentation control

All documents submitted by the *Supplier* shall be of good quality and shall be subject to the *Purchaser's* approval. All goods to be delivered must be accompanied by a delivery note.

4.5 Health and safety risk management

The *Supplier* shall comply with the following health and safety requirements:

The *Supplier* shall at all times comply with the health and safety requirements prescribed by law applicable to these services, including Eskom health and safety procedures. Minimum:

- [1] Basic Conditions of Employment Act No 75 of 1997.
- [2] Occupational Health and Safety Act and Regulations No 85 of 1993.
- [3] National Environmental Management Act 107 of 1998.
- [4] National Road Traffic Act 93 of 1996.
- [5] 32-37 Eskom Substance Abuse Procedure.
- [6] 32-136 Eskom Contractor Health and Safety Requirements
- [7] 240-62196227 Eskom Life- saving Rules

- [8] 32-95 Eskom Environmental, Occupational Health and Safety Incident Management Procedure
- [9] 32-727 Eskom SHEQ Policy
- [10] 240-62946386 Eskom Vehicle and Driver Safety Management Procedure
- [11] 32-520 Eskom Risk assessment procedure
- [12] *1015696 Kendal Power Station Contractors SHE specification

The *Supplier* shall comply with the health and safety requirements contained in Project SHE specification provided with the tender documents, Occupational health and safety act and all applicable health & safety laws and regulations and rules, guidelines, and procedures.

- The *Supplier* shall develop and implement a project specific health and safety plan based on the provided project applicable SHE requirements and legal requirements. The *Supplier* shall submit the plan to the *Purchaser's* Safety risk department before commencement of the contract for evaluation and approval.
- These documents shall be maintained for the duration of the contract.

4.6 Environmental constraints and management

The *Supplier* shall comply with the environmental criteria and constraints

Kendal Power Station is ISO 14001 compliant. The *Supplier* must comply with the requirements of this procedure titled: Environmental Management System Requirement for the Contractors number PG/240/008. Kendal also has an SHEQ Policy PS/270/0083, to which every *Supplier* must adhere to. It is therefore the responsibility of the *Supplier* to ensure that the *Supplier* obtains copies of Kendal SHEQ Policy. The *Supplier* must identify all Environmental aspects and impacts related to his/her activities.

The *Supplier* must comply with the following requirements.

- a) Environmental Management System (ISO 14001:2015)
- b) National Environmental Management Act (Act 107 of 1998)
- c) Environmental Management Procedure for Contractors (*1018332)
- d) Waste Management Procedure (*1024102)
- e) Non-conformance, Corrective and Preventative Action (*1017357)

4.7 Quality

Quality assurance requirements

General

- a. The *Supplier* complies with the *Purchaser's* quality and technical requirements including those listed in the *Purchaser's* specification document QM58 (Quality Management Specification 240- 105658000).

Quality Management documents requirements

The *Supplier* submits the following document after contract award to the *Supply Manager* for review and acceptance and prior to the commencement of work

The *Supplier* will supply the *Supply Manager* with a QCP which will detail the *Supplier's* organisation, quality assurance and quality control procedures specific to this project. The QCP must be aligned to, and reference ISO 10005:2005 QMS, guidelines for quality plans and in compliance with the guideline in QM 58 (Quality Management Specification 240- 105658000). The QCP will make reference to the *Supplier's* QMS Procedures to be used in this Contract:

- a. The *Supplier's* QMS compliance with the requirements of ISO 9001
- b. *Supplier's* quality manual
- c. *Supplier's* quality procedures
- d. *Supplier's* quality forms and work instructions
- e. *Supplier's* quality system documents referenced in this Works Information

Non Conformances and Defects

Where NCR's and Defect notifications are issued, the *Supplier* acknowledges receipt as per reply period and proposes corrective and preventive actions to the *Supply Manager* as per the contract response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and Defect notifications issued to the *Supplier* must be reported to the *Supply Manager* on weekly

4.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Supply Manager* in terms of core clause 51.2, the *Supplier* provides the *Purchaser* with a tax invoice showing the amount due for payment equal to that stated in the *Supply Manager's* certificate.

The *Supplier* shall address the tax invoice to *Purchaser* and include on each invoice the following information:

- Name and address of the *Supplier* and the *Supply Manager*;
- The contract number and title;
- *Supplier's* VAT registration number;
- The *Purchaser's* VAT registration number.
- Description of *goods* and *services* provided for each item invoiced based on the Price Schedule;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- (add other as required).
- All invoices must be submitted to invoiceseskomlocal@eskom.co.za after the goods have passed the Quality Control processes which include goods receipts.

4.9 Insurance provided by the *Purchaser*

As per Core Clause Z13.1 stated in C1.2 SC3 Contract Data (Data Provided by the *Purchaser*) of this NEC3 SC3 document.

C3.2 *SUPPLIER'S* GOODS INFORMATION

This section of the Goods Information will always be contract specific depending on the nature of the *goods* and *services*.

It is most likely to be required for supply contracts where the tendering supplier will have proposed specifications and schedules for the *goods* and *services*, which once accepted by the *Purchaser* prior to award of contract now become obligations of the *Supplier* per core clause 20.1.

This section could also be compiled as a separate file.
