

Liste du matériel préférentiel - Preferred Material List

LISTE DU MATERIEL ELECTRIQUE PREFERENTIEL

A1) ENCLOSURES

Item	Type / Series	Supplier
Switch Cabinets	TS8 / SE8	Rittal
Terminal Boxes	CM / KL/ AE / EB	Rittal
Control Desk	AP	Rittal
Control panel (wall mounted)	AE	Rittal
Directing stand Desks	AP/TP	Rittal

A2) ENCLOSURE ACCESSORIES

Item	Type / Series	Supplier
19" Sub Racks and accessories		Schroff
Swing Frame		Rittal
Earth strap		Rittal
Enclosure lighting		Rittal
Roof mounted fan		Rittal
Roof mounted fan unit		Rittal
Fan and filter unit (Door mounted, ...)		Rittal
Outlet filter		Rittal
Cooling device		Rittal
Enclosure heater		Rittal

A3) TERMINALS

Item	Type / Series	Supplier
Terminals	Spring Terminals	Wago
		Phoenix contact
Terminals block	Spring Terminals	Wago
		Phoenix contact
Terminal interface module	Spring Terminals	Phoenix contact
Shield bar system	SK (10x3mm)	Phoenix contact

A4) OPERATING AND INDICATION DEVICES

Item	Type / Series	Supplier
Operating and indication devices	LED, Diam. 22mm	Siemens
		Schneider

A5) DISPLAY UNIT, INDICATOR, ENERGY METER

Item	Type / Series	Supplier
Display unit, Indicator, Energy meter	Diris A40 avec sortie Profibus DP	Socomec

A6) CIRCUIT BREAKER AND FUSES

Item	Type / Series	Supplier
Circuit breaker		Siemens
		Schneider
Power circuit breaker		Siemens
		Schneider
Fuse switch-disconnector	3NP	Siemens
	Fuserbloc or RM	Socomec
Circuit breaker 630 ... 3200A	3WL	Siemens
Electronic fuse block for 24V DC	6EP1961-2BA00	Siemens

A7) CONTACTORS AND RELAYS

Item	Type / Series	Supplier
Main contactor 230V AC / 50 Hz		Siemens Schneider
Main contactor 24V DC		Siemens Schneider
Soft Starter 400V AC / 50-60 Hz		ABB Rockwell Siemens
Reversing contactor combination		Siemens Schneider
Auxiliary Contactor 24V DC		Siemens Schneider
Time relay		Siemens Schneider
Gold contact relay		Releco
Optoelectronic coupler		Phoenix contact Weidmuller
Safety combination	PNOZ or M1P	Pilz
Thermistor Protective relays 230V AC		Siemens Schneider
Overload relays		Siemens Schneider
Overvoltage limiter for contactors	RC-Elements	Siemens Schneider

A8) DC-ISOLATION AMPLIFIER

Item	Type / Series	Supplier
	MCR	Phoenix contact
DC-Isolation amplifier, rail mounting	Sineax	Camille Bauer
		Entrelec

A9) CONTROL VOLTAGE TRANSFORMER

Item	Type / Series	Supplier
Control Voltage Transformer		Block
400V 3ph / 230V 1ph – 50Hz		Siemens
		Erea

A10) POWER SUPPLIES

Item	Type / Series	Supplier
Control Voltage Transformer		
400V 3ph / 24V DC	Sitop power modular	Siemens
Signaling module	6EP1961-3BA10	Siemens
Undervoltage monitor	SUG140	Bender
Control Voltage Transformer for rack 19"		
230V / 15V DC (...+/-15V DC)	PSG 19" compatible	Schroff
Control Voltage Transformer		
230V / +/-15V DC	Mini	Phoenix contact
Control Voltage Transformer		
100-240V / 24V DC	Mini	Phoenix contact
Control Voltage Transformer		
100-240V / 5V DC	Mini	Phoenix contact
UPS		APC-MGE (Schneider Electric)
		Siemens

A11) INDUSTRIAL COMMUNICATION

Item	Type / Series	Supplier
Communication Processor TCP/IP		Siemens
Communication Processor Profinet		Siemens
Communication Processor Profibus DP		Siemens
Switch module	Scalance XC200, XB200	Siemens
Repeater for L2DP Profibus System		Siemens
Optical link module for L2DP Profibus System		Siemens
Remote I/O (Profibus, Profinet)	ET200SP	Siemens

A12) PLC, HMI, SNCC, NC

Item	Type / Series	Supplier
Programmable Logic Control PLC	S7-1500, S7-400 (not Compact Model)	Siemens
Safety PLC	M1P Série F (Fail)	Pilz Siemens
Panel display	KT,TP 700, 900, 1200	Siemens
Operator Software HMI	WinCC flexible	Siemens
Supervisory Control and Data Acquisition (SCADA)	Win CC	Siemens
Distributed Control System (DCS)	Emerson	Delta V
Numeric Command	Siemens	Sinumerik 840 D

A13) TECHNOLOGICAL MEASURING DEVICES / SPECIAL MEASURING DEVICES

Item	Type / Series	Supplier
Force Measuring Device		
Linear Position Transducer	R-séries / Profibus-DP	MTS T&R Balluff
Optical Pyrometer	Modline 5 série 5G	Ircon
Temperature Scanner		Ircon Land
Thickness / Length Measuring Device		
Laser Distance measurement	DME	Sick

A14) DRIVE SYSTEM

Item	Type / Series	Supplier
Motors	With minimum High Efficiency Performance Class IE3	ABB Siemens
Roller table motors		M&C (KLOSE) SEW
AC aux .variable speed motors		ABB Siemens
Frequency converter devices for AC aux. variable speed motors	ACS 880 Powerflex 755 Sinamics S 120	ABB Rockwell Siemens
DC Drives	DCS 550 / DCS 800 Sinamics 6RA80	ABB Siemens
Gear motors		SEW Eurodrive Flender ABB Bauer
Fix Speed Motors		ABB Siemens

A15) SENSORS / ACTUATORS

Item	Type / Series	Supplier
Light Barrier		Sick
		Leuze
		Banner
		Pepperl & Fuchs
		Pauly
		Delta
Limit switches, mechanical	IP65	Siemens
		Schneider
		Schmersal
Proximity switches	IP65	Sick
		IFM
Absolute Shaft Encoder	OCD-DPC1B-1213- C100-H2M in Profibus DP	Fraba
	GXMMWA20 3P32 in Profibus DP	Baumer
Impulse Generator		Fraba
		T & R
		Hubner
		Heidenhain
		Leine & Linde
Position Transducer	R-séries / Profibus-DP	MTS
Slip rings conductor rail		Vahle
		Stemann
Electro Magnetic Flowmeter		Endress & Hauser
		ABB

		Siemens Yokogawa Emerson
Flowmeter for Gases, Air		Endress & Hauser ABB Siemens Yokogawa Emerson
Pressure Transmitter	ABB: ASA 800 Yokogawa: EJA 120A Emerson: 3051CD	Endress & Hauser ABB Siemens Yokogawa Emerson
Pressure Switch		Hydac Parker
Level Measurement (transmitter)		Endress & Hauser Siemens VEGA
Level Measurement (contact)		Endress & Hauser Parker
Temperature Transmitter	Emerson : 3144P	Endress & Hauser ABB Siemens Yokogawa Emerson
Temperature sensor (PT100, Thermocouple)		Endress & Hauser ABB Emerson

	Thermibel Heraeus, Pyridus
Pressure gauge manometer with contact	Turck
Servo Valves, Proportional Valves	Moog Bosch Rexroth
Control valves	Arca Auma ABB Emerson Masoneilan Bosch Rexroth Kromschroder

A16) COMBUSTION FURNACE (FUEL: NATURAL GAZ TYPE H)

Item	Type / Series	Supplier
<u>Cold air burner :</u> Low NOx burner gas with modulating flame, with pilot burner ignition and monitoring with 1 single electrode	BIO	Elster Kromschroder Bloom
<u>Hot air burner :</u> Self recuperative burner ON/OFF for gas	Ecomax 5M	Elster LBE
Ionization pilot burner	ZMI	Elster Kromschroder
Flame monitor	BCU 460 Profibus DP	Elster Kromschroder
Tightness control	TC 410	Elster Kromschroder
<u>Pressure reducing station:</u> Filter, total gas meter, main regulator, event, pressure switch, manometer, security valves ...		Elster Kromschroder, Fiorentini
Refractory fiber	Superwool 607 HT	Thermal Ceramics
Oxygen analyzer		Yokogawa
Total gas meter		Elster Kromschroder

LISTE DU MATERIEL MECANIQUE PREFERENTIEL

Item	Type / Series	Supplier
Bearing	Housings made of spheroidal graphite cast iron or steel	SKF FAG - NTN NADELLA TORRINGTON INA - TIMKEN
Ball screw and linear guide		SKF – NEFF - INA
Hydraulic		REXROTH DELIMON - VICKERS VOITH – WANDFLUH RACINE – HUNGER PALL – HANCHEN MOOG
Gearbox		FLENDER – HTI DE MALZINE
Pneumatic		NORGEN MARTONAR FESTO JOUCOMATIC REXROTH DANFOSS MECMAN PARKER
Pump		KSB – ENSIVAL ALLWEILER ACEC - FLYGT WEPUKO DELIMON ENERPAC REXROTH CHESTERON MUNSCH VICKERS LUKAS LAMBORGHINI LESTRIZ ALPHA LAVAL FELUWA
Mechanical seal		DURAMETALLIC CHESTERTON
Compressor		ATLAS COPCO MANNESMANN INGERSOLL WEPUKO FRANCOIS
Heat exchanger		LANGERER & REICH VOITH – GEA YOUNG RADIATOR COMPANY HEAT EXCHANGER
Chain		RENOLD

	KÖBO
Cardan shaft and coupling	GWB – ELBE – IBBY ESCO – STROMAG ROTEX – FLENDER SAFESET – AVD PIV – PERIFLEX VOITH
Lubricant	SHELL CASTROL FINA