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Investor:

PEGAS-GONDA s.r.o.

Project title:

0230x0280_0GH_0_P_H0_0_V_02

Name machine:

Band saw machine 230x280 GH-R

Name of supplement:

TECHNICAL REPORT
WIRING DIAGRAM
DEVICE SPECIFICATION
LIST OF TERMINALS
LIST OF CABLES

Design stage:

Actually made

Constructor:

Ing. Křížek

Date:

14.11.2014

Order number:

Execution:

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Constructor: Ing. Křížek

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Technical report

1. EQUIPMENT – MANUAL BAND SAW MACHINE 230x280GH

1.1. IMPRINT

Name of building: Manual band saw machine 230x280GH-R
 Investor: PEGAS-GONDA s.r.o., Čs.Armády 322, 684 01 Slavkov u Brna
 Supplier of Technology: PEGAS-GONDA s.r.o., Čs.Armády 322, 684 01 Slavkov u Brna

1.2. CHARACTERISTIC DATA

Protection against dangerous contact:

- non-living parts of automatic disconnection from the source and additional bonding by ČSN EN 60204-1 ed.2 par.6.3 a par.8
- live coverage of parts and low voltage according ČSN EN 60204 ed.2 par.6.2 a par.6.4

1.3. DESIGN DATA

- technological requirements of the project
- current project, the electrical
- ČSN and relevant regulations :
 - ČSN 330165 (1.3.2008) Značení vodičů barvami nebo číslicemi
 - ČSN EN 60204-1 ed.2 (1.6.2007) Elektrická zařízení pracovních strojů
 - ČSN 33 2000-4-41 ed.2 (1.8.2007) Ochrana před úrazem el.proudem
 - ČSN 33 2000-5-54 ed.3 (1.5.2012) Uzemnění a ochranné vodiče
 - ČSN 33 2000-6 (1.9.2007) Revize
 - ČSN EN 60439-1 ed.2 (1.11.2000) Typ.zkoušené a část. typ.zkoušené rozváděče
 - ČSN EN 50110-1 ed.2 (1.9.2006) Obsluha a práce na elektrických zařízeních
 - ČSN EN 13898+A1 (11/2009)

and belonging to them the standards and regulations.

1.4. SPECIFICATIONS

1.4.1 Distribution grid IT

1.4.2 Voltage System

3/PE AC 230V 50Hz, IT
 2 AC 24V 50Hz, PELV

1.4.3 Protection against dangerous contact:

- non-living parts of automatic disconnection from the source and additional bonding by ČSN EN 60204-1 ed.2 par.6.3 a par.8
- live coverage of parts and low voltage according ČSN EN 60204 ed.2 par.6.2 a par.6.4

1.4.4 Influence of environment

To install the service under consideration is expected to set the internal environment, space normal (AB5,AC1,AD3,AE3,AF1,AG2,AH2,AK1,AL 1,AM1,AP1,AR1,BA4,BC3,BD1,BE 1).

1.4.5 Electricity metering

Measurement of electricity consumption is not subject to this project.

1.4.6 Balance of power - technology for manned facilities

Electric input	Pi =	1,5 kW
Site rated power	Ps=	1,3 kW

Calculated current $I_v = 3,5 \text{ A}$

1.4.7 Electricity supply

The main intake switchboard RM is the subject of file delivery service. The inlet is made cable H05VV-F 4Bx1.5, **required protection** on the power – fuses 16A gG.

The power supply must meet the requirements of the standard ČSN 33 2000-4-41 ed.2 par. 411.6

1.4.8 Compensation Factor

Unless this project.

1.5. DESCRIPTION OF TECHNOLOGY PARTS

1.5.1. LIST OF APPLIANCES

position	descriptions	number	Ps(kW)
M1	Drive belt 400VAC,50Hz/0,75/1,1kW / 2,12-2,9A,D/YY	1	0,75/1,1
M2	Emulsion pump 0,045kW, 1x400V, 022A	1	0,05
	Distributor RM Elektro-Pegas	1	0,08

1.5.2. TECHNICAL REPORT

Distributor RM

Distributor of machine RM is cubicle box type of 230x280GH, protection class is IP 43/20, dimension are 250x250x190. It consists of a base mounted device and cover.

The distributor is equipped as controls and switching devices. From distributor are all connected electrical devices, specified in the machine parts.

The supply is included in the function switch Q1 switches the engine speed drive belt.

Control and signalling

Motor drive belt can turn on the switchboard on distributor RM or manually control switch located on the control lever arm machine.

Machine part

All drives can be switched off via the emergency button emergency stops. After pressing the button is pressed in the locked position. Button can be released by turning. After releasing the button actuator will remain in their original state ie. off, they turn to place the activation of the control.

M1 Drive of band**M2 Emulsion pump**

Drive Belt M1 (M2 emulsion pump) is turned on in automatic mode (switch SA2 - AUTO mode selection) button to manually SB1 (START AUTO) located on the cabinet. Remove the automatic mode is terminated after reaching the position "shoulder down" or switch mode switch SA2 MAN.

Drive Belt M1 (M2 emulsion pump) is turned on and off in manual mode (switch SA2 - mode selection MAN) switch SB2 (MANUAL START) located on the control lever arm machine. The engine speed can be set switch-engine speed switch Q1.

When you open the cover, belt breakage or overload the motor M1 is blocked operation drives, after removal of defects is the same as the next steps after the release button emergency stops.

1.5.3 CABLING

Individual electrical devices are powered switchboard cables H05VV-F and CYLY 2Ax0.5 connected to the output terminals.

Cables and signaling cables drives are kept separately outside of the machine.

1.5.4 GROUNDING AND BONDING

Protective interconnections Cu wire is designed depends on the various dimensions of the extreme section conductor according to ČSN EN 60204-1 ed.2 odst.8. At the bottom of the saw stand is designed PE screw terminal for connection to external protective earthing system.

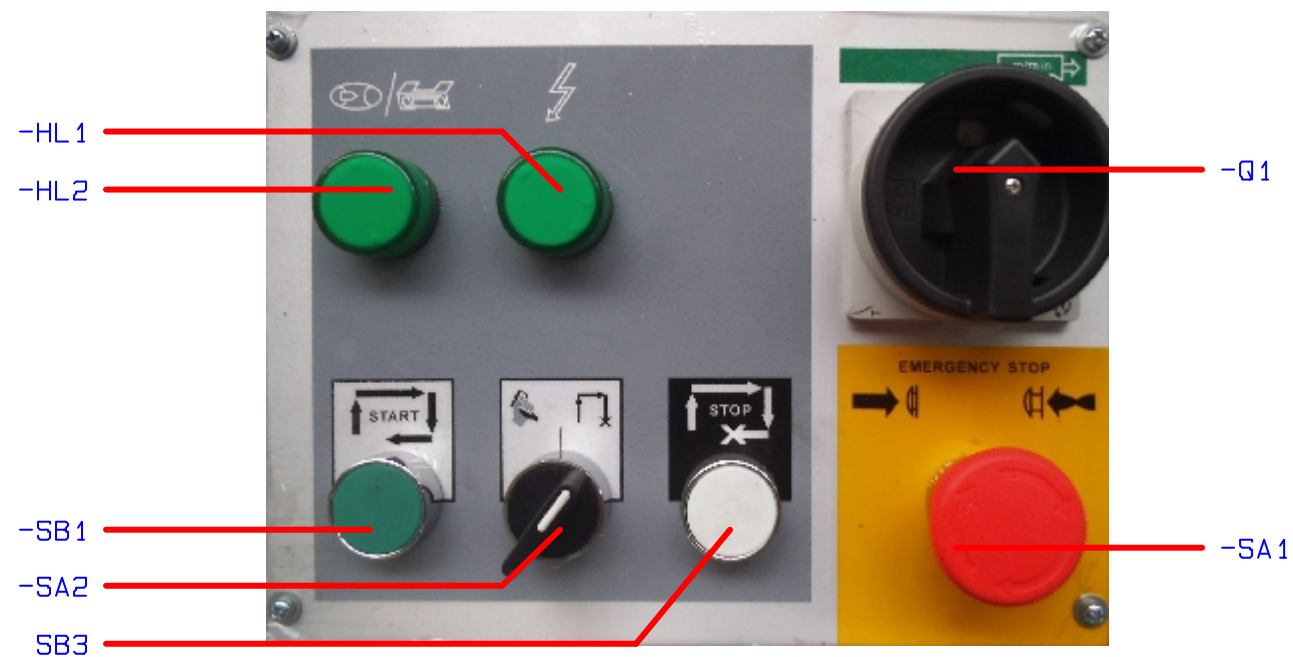
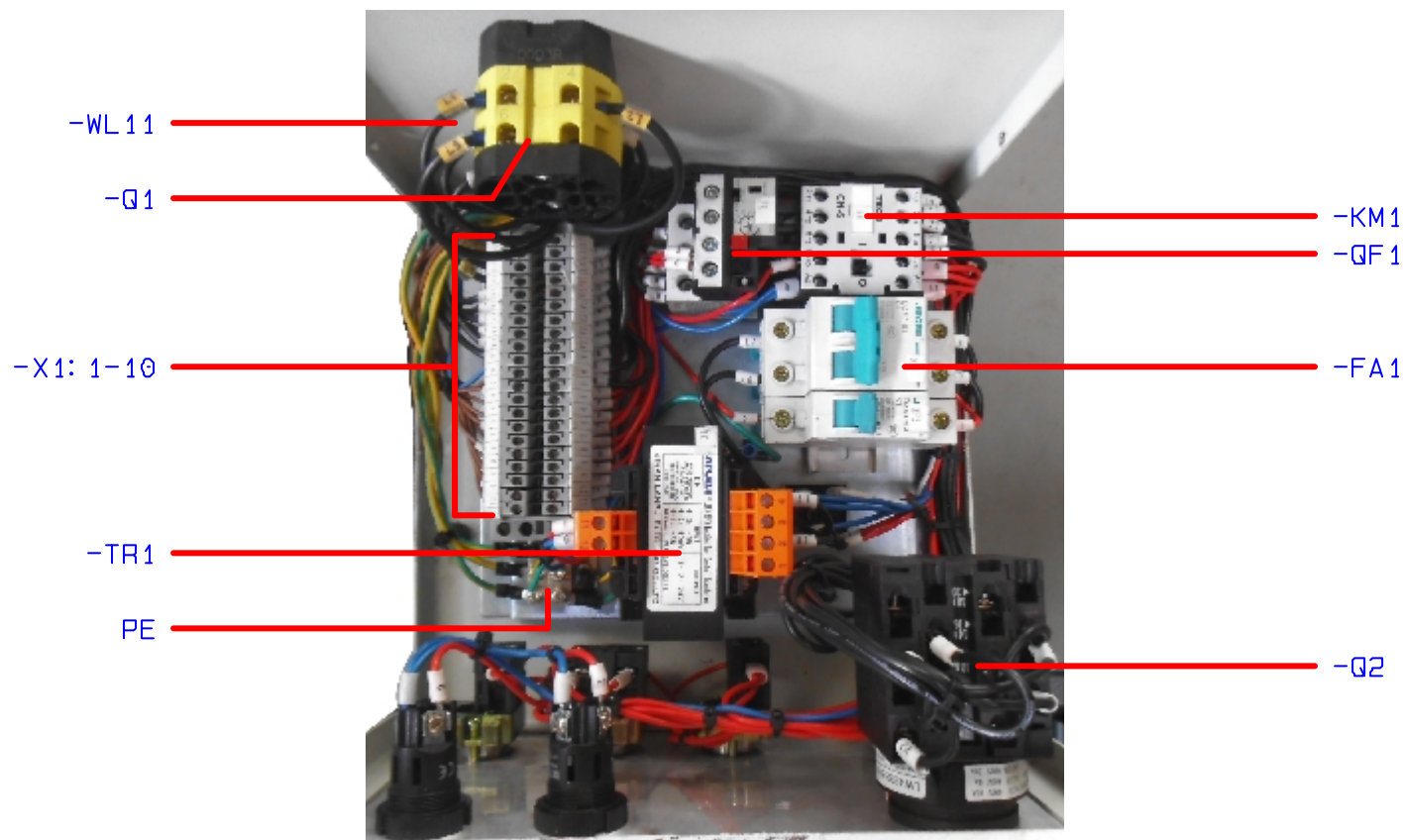
2. OPERATIONAL AND SAFETY REGULATIONS

Electrical equipment must be kept in a state that is consistent with current electrical standards and regulations. Simple operation of electrical equipment, in which the worker can not come into contact with live parts may be performed by the employee with no electrical skills. Staff member designated by the operator el. equipment must be familiar with the rules to the extent of business carried on by him or trained for this activity under the relevant regulations. Personnel who work on the el. facilities must be at least knowledgeable staff.

It is recommended that after installation and commissioning of equipment into service check all terminal connections associated with the activities of the cabinet. Likewise, do at least 1x a year. Electrical work is to be implemented under the meaning of the applicable ISO standards and related regulations.

After completion of electrical installation work must be carried out initial revision in accordance with ČSN 33 2000-6-61. The operator is obliged to perform regular reviews of the meaning of ČSN 33 1500.

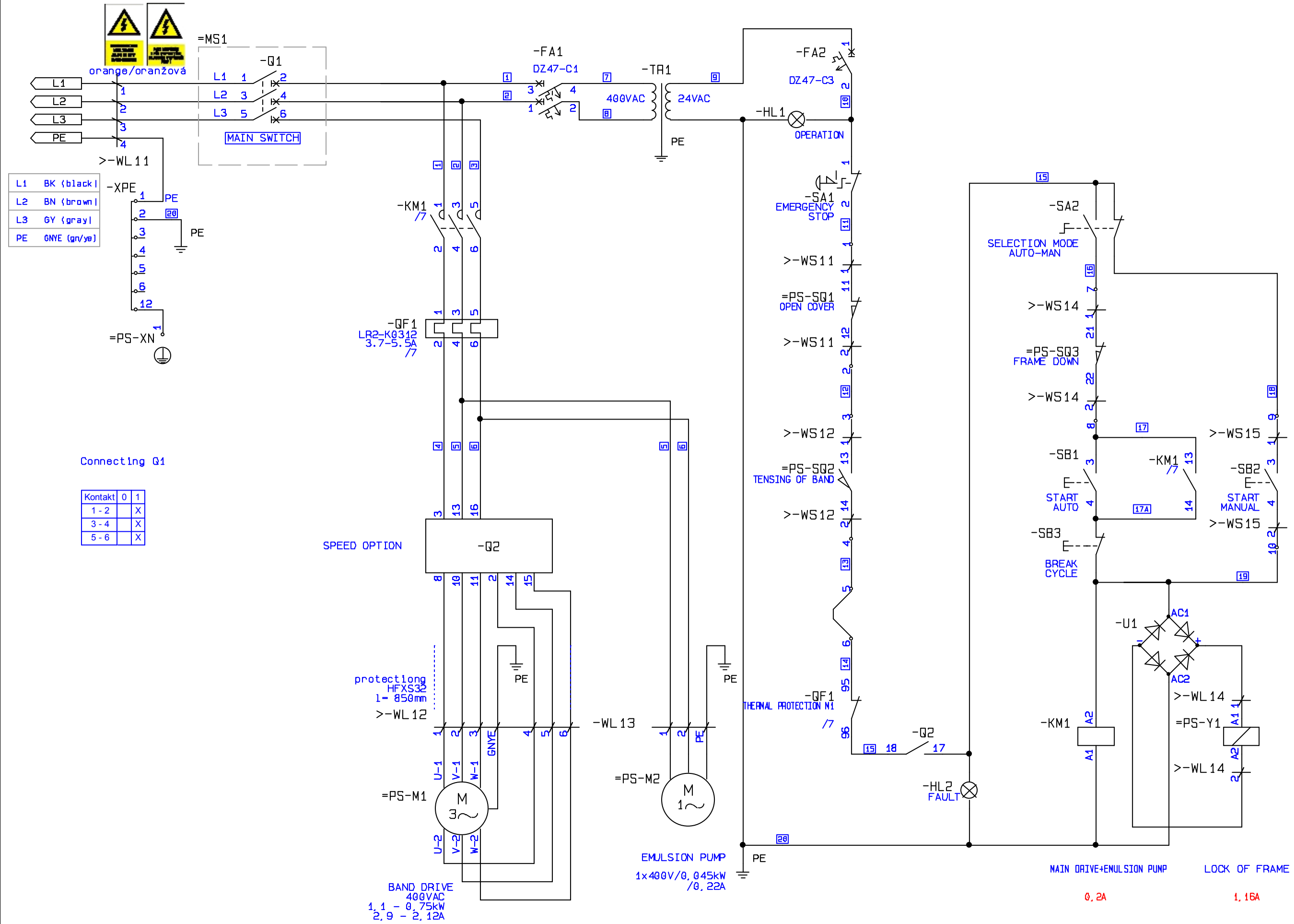
Schematic diagram



BEFORE OPENING POWER DISTRIBUTORS DISCONNECT FROM THE NETWORK

TYPE OF DISTRIBUTOR	CUBICLE DISTRIBUTOR		
FIELD COUNT	1	PARTING	-
PROTECTION-CLOSE	IP30	OPEN	IP00
MAIN	FROM BEHIND	TERMINALS	FROM BEHIND
SIZE (mm)	WIDTH 250mm	DEPTH 250mm	HEIGHT 190mm
COLOURING	-		

VOLTAGE SYSTEM	PROTECTION AGAINST DANGEROUS CONTACT
3/PE AC 230V 50HZ, IT	SELF-DISCONNECTION FROM SOURCE
2 24VDC, PELV	SLOW VOLTAGE

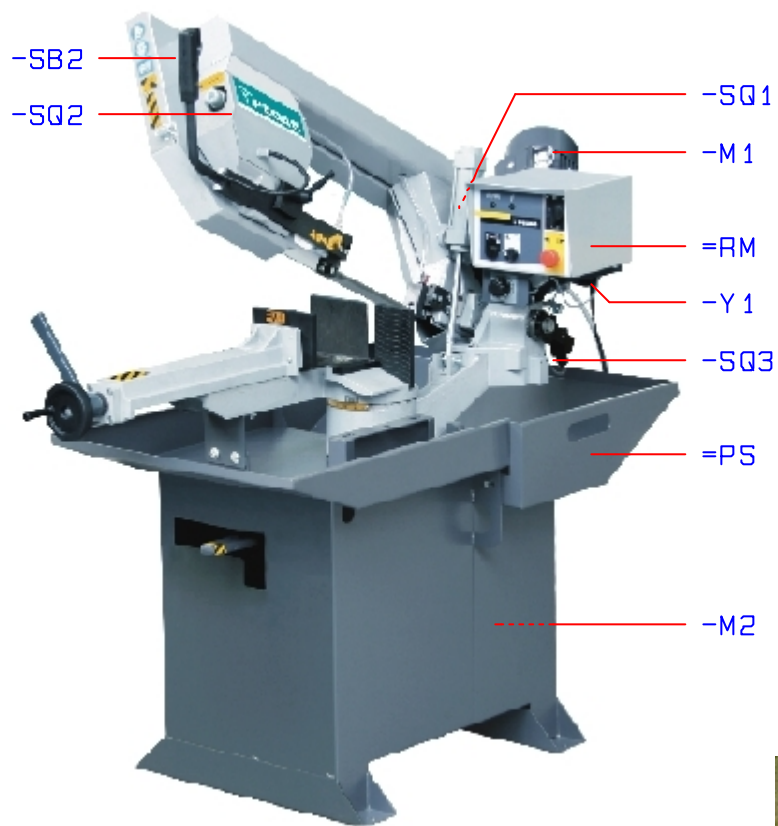


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Constructor: Ing. Křížek
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 Page title: **Power,drives**

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Disposition



drive/sensor	cable
main supply	WL11
M1 drive of band	WL12
M2 emulsion pump	WL13
Y1 lock of frame	WL14
HL3 light(access.)	WL15
AP applicators(access.)	WL16
SQ1 open cover	WS11
SQ2 tensing of band	WS12
SQ3 frame down	WS14
SB2 START-manual mode	WS15

detail -SQ3, -Y1



detail -SB2, -SQ2



detail cabling



detail cabling -M1



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Disposition

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Lists

pieces /m	Type	Description	Maker	Price
1	400VAC 1,1 - 0,75kW	400VAC/1,4-2kW/3,4-4,3A/1405-2750 1/min		
9.15	2xVL22x0,5	Celoplastový kabel 2x0,5mm2	Kabely	
1	DZ47-C1	JUCHE		
1	DZ47-C3			
1	EMULSION PUMP	1x400V/0,045kW /0,22A		
1	FR501	Pizzato FR501		
1	FR502	Pizzato FR502		
1	FR693-D1	Pizzato FR693-D1		
7.45	H05VV-F 4Bx1,5	H05VV-F 4Bx1,5		
2.20	H05VV-F 7X1,5	kabel CYSY 7x1,5 černý		
1	JBC E2540-0034	Elektrokov,230/24V,80VA,3.3A		
1	KBPC 1506	SOS KBPC 1506, 15A/600V faston, obj.č.29174		
2	L94-G-24V AC	RAMI,L94-G-24V AC		
1	LC1K0910B7	Telemecanique 3389110363623		
1	LR2-K0312	Telemecanique,LR2-K0312		
1	NVZ2R	Obzor Zlín ovladač NVZ2R		
1	PE7	I-center,mústek rozbočovací PE7zelený 7x16mm2		
1	RPE3-04	Hytos ventil RPE3-04,24VDC/1,16A		
1	VS16 9552 C8	Obzor Zlín,přepínač VS16 9552 C8		
1	VSN 16	Obzor Zlín,přepínač VSN16		
1	YW1 B-M1E10W	IDEC,YW1 B-M1E10W,tlačítko		
1	YW1 B-V4E02R	IDEC,YW1 B-V4E02R,tl.nouzového zastavení		
1	YW1 S-2E10	IDEC,YW1 S-2E10,přepínač		
1	ZB5 AA1	Telemecanique ZB5 AA1 tlačítko		
1	ZB5 AZ009	Spojovací díl pro XB5	Schneider	40.00
1	ZB5AA1	hlavice ovládací stisk. s návratem bílá	Schneider	
1	ZBE102	jednotka rozpínací 1NC	Schneider	
1	ZBE AZ009	Telemecanique ZBE AZ009 spojovací díl		
10	ZDU2.5	Weidmueller ZDU2.5		
1	spínací jedn.	spínací jednotka komplet		
1	šroubová svorka	zemnicí šroubová svorka		



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Name	Type	Description	Maker	Page/ column
-WL11 (6.55)	H05VV-F 4Bx1,5	H05VV-F 4Bx1,5		7
-WL12 (2.20)	H05VV-F 7X1,5	kabel CYSY 7x1,5 černý		7
-WL14	CYLY 2Ax0,5	Celoplastový kabel 2x0,5mm2	Kabely	7
-WS11 (1.50)	CYLY 2Ax0,5	Celoplastový kabel 2x0,5mm2	Kabely	7
-WS12 (2.50)	CYLY 2Ax0,5	Celoplastový kabel 2x0,5mm2	Kabely	7
-WS14	CYLY 2Ax0,5	Celoplastový kabel 2x0,5mm2	Kabely	7
-WS15 (3.15)	CYLY 2Ax0,5	Celoplastový kabel 2x0,5mm2	Kabely	7
-M1	400VAC 1,1 - 0,75kW	400VAC/1,4-2kW/3,4-4,3A/1405-2750 1/min		7
-M2	EMULSION PUMP	1x400V/0,045kW /0,22A		7
-SQ1	FR693-D1	Pizzato FR693-D1		7
-SQ2	FR501	Pizzato FR501		7
-SQ3	FR502	Pizzato FR502		7
-XN	šroubová svorka	zemnicí šroubová svorka		7
-Y1	RPE3-04	Hytos ventil RPE3-04,24VDC/1,16A		7
-FA1	DZ47-C1	JUCHE		7
-FA2	DZ47-C3			7
-HL1	L94-G-24V AC	RAMI,L94-G-24V AC		7
-HL2	L94-G-24V AC	RAMI,L94-G-24V AC		7
-KM1	LC1K0910B7	Telemecanique 3389110363623		7
-Q1	NVZ2R	Obzor Zlín ovladač NVZ2R		7
-Q1	VSN 16	Obzor Zlín,přepínač VSN16		7
-Q2	VS16 9552 C8	Obzor Zlín,přepínač VS16 9552 C8		7
-QF1	LR2-K0312	Telemecanique,LR2-K0312		7
-SA1	YW1 B-V4E02R	IDEC,YW1 B-V4E02R,tl.nouzového zastavení		7
-SA2	YW1 S-2E10	IDEC,YW1 S-2E10,přepínač		7
-SB1	YW1 B-M1E10W	IDEC,YW1 B-M1E10W,tlačítko		7
-SB1	ZB5 AA1	Telemecanique ZB5 AA1 tlačítko		7
-SB1	ZBE AZ009	Telemecanique ZBE AZ009 spojovací díl		7
-SB2	spínací jedn.	spínací jednotka komplet		7
-SB3	ZB5 AZ009	Spojovací díl pro XB5	Schneider	7
-SB3	ZB5AA1	hlavice ovládací stisk. s návratem bílá	Schneider	7
-SB3	ZBE102	jednotka rozpínací 1NC	Schneider	7
-TR1	JBC E2540-0034	Elektrokov,230/24V,80VA,3.3A		7
-U1	KBPC 1506	SOS KBPC 1506, 15A/600V faston, obj.č.29174		7



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Name	Type	Description	Maker	Page/ column
-WL13 (0.90)	H05VV-F 4Bx1,5	H05VV-F 4Bx1,5		7
-X1 (10)	ZDU2.5	Weidmueller ZDU2.5		7
-XPE	PE7	I-center,mústek rozbočovací PE7zelený 7x16mm2		7



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FROM				CABLE			TO			
Ref.	Device	Terminal	Page/column	Cable	Wire	Potential	Ref.	Device	Terminal	Page/column
				-WL11	1	L1	=RM	-Q1		7
				-WL11	2	L2	=RM	-Q1		7
				-WL11	3	L3	=RM	-Q1		7
				-WL11	4	PE	=RM	-XPE		7
=RM	-Q2	4	7	-WL12	1		=PS	-M1	4	7
=RM	-Q2	2	7	-WL12	2		=PS	-M1	2	7
=RM	-Q2	7	7	-WL12	3		=PS	-M1	7	7
=RM	-Q2	11	7	-WL12	4		=PS	-M1	11	7
=RM	-Q2	9	7	-WL12	5		=PS	-M1	9	7
=RM	-Q2	15	7	-WL12	6		=PS	-M1	15	7
=RM	-XPE	2	7	-WL12	GNYE	PE	=PS	-M1	2	7
=RM	-U1	+	7	-WL14	1		=PS	-Y1	+	7
=PS	-Y1	A2	7	-WL14	2		=RM	-U1	A2	7
=RM	-X1	1	7	-WS11	1		=PS	-SQ1	1	7
=PS	-SQ1	12	7	-WS11	2		=RM	-X1	12	7
=RM	-X1	3	7	-WS12	1		=PS	-SQ2	3	7
=PS	-SQ2	14	7	-WS12	2		=RM	-X1	14	7
=RM	-X1	7	7	-WS14	1		=PS	-SQ3	7	7
=PS	-SQ3	22	7	-WS14	2		=RM	-X1	22	7
=RM	-X1	9	7	-WS15	1		=RM	-SB2	9	7
=RM	-SB2	4	7	-WS15	2		=RM	-X1	4	7
=RM	-Q2	10	7	-WL13	1		=PS	-M2	10	7
=RM	-Q2	14	7	-WL13	2		=PS	-M2	14	7
=RM	-XPE	2	7	-WL13	PE	PE	=PS	-M2	2	7



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