

GRUNDFOS Wiring Diagram

Type : Multi-B ES 1x7.5DOL+7.5E 3x380-440V, 50Hz, N, PE, IP54

Application : Pressure Boosting
Tank Filling

Technical Data

Number of Main Pumps	: 1
Nominal Power Main Pump	: 5.8 kW(50Hz)
Rated Current Main Pump	: 11.8 A
Switch Mode Main Pump	: Direct on Line
Number of Aux. Pumps	: 1
Nominal Power Aux. Pump	: 5.5 , 7.5kW
Rated Current Aux. Pump	: 15 A
Switch Mode Aux. Pump	: Soft Start
Mains Supply	: 3x400 V, 50 Hz, PE
Rated Current of Plant	: 27 A
Ambient Temperature	: 0 - 40 °C
Enclosure Class	: IP54

Serial No.	:	
Production Code	:	98636653
Made in	:	
Commission	:	
Project	:	

Notes:

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These drawings are designed on a CAE-system.
Changes are only to be made by GRUNDFOS.

Manufacturer

GRUNDFOS PUMPS (SU ZHOU) LTD
NO 72 QING QIU STREET
SU ZHOU CHINA 215126

Option sheet overview

97825157	Dry running protection
97825158	Redundant primary sensor
97825159	Operation/Alarm Lamp
97825160	Emergency operation switch
97825161	External Transformer
97825162	Tank filling with High Level Alarm (Float switch)
97825163	Tank filling with High Level Alarm (Level Sensor)
97825164	Phase failure protection
97825165	Beacon
97825166	Audible alarm
97825167	Communication interface module

1

External Cable

Mains Supply : L1,L2,L3,N,PE: 5x6.0 mm²
Main Pump : U,V,W,PE: 4x2.5 mm² + 2x0.5 mm²
Auxiliary Pump : L1,L2,L3,PE: 4x2.5 mm²

Remarks

Cross sections of power cables are referring to the max. allowed nominal motor current.
Min. cross sections are given by the nominal current.
Max. cross sections are given by the terminal size.

Transmitter : 24 VDC, +, -, PE 4x0.16..2.5 mm²

shielded

GENIbus : 3x0.16..2.5 mm², twisted leads, shielded

optional

Digital remote control : 2x0.16..2.5 mm², shielded
Remote setpoint influence : 2x0.16..2.5 mm², shielded
Potential free operation and fault : 3..6x0.16..2.5 mm²

Extended Technical Data

Weight : kg
Maximum heat losses : W

Important Notes

Connect mains phases direct to main switch terminals

Mains supply wires in front of main switch have dangerous voltage even though the main switch is switched off.

Doors and conductive gland plates of the cabinet must be connected professionally to the protective earth.

Read belonging installation and operating instructions

Caution! Line terminals of the variable speed motors have dangerous voltage even though the motor is stopped.

TYPE		3 Phase		
		Phase	Spec.	Colour
Power Wiring	Mains Supply	L1	Inside the cabinet	Red
		L2		White
		L3		Blue
		PE		Green/Yellow
	Power Circuit Motor Unscreened	L1	Inside the cabinet	Red
		L2		White
		L3		Blue
		PE		Green/Yellow
		L1	Cable outside the cabinet	Red
		L2		White
		L3		Blue
		PE		Green/Yellow

Spare Parts List

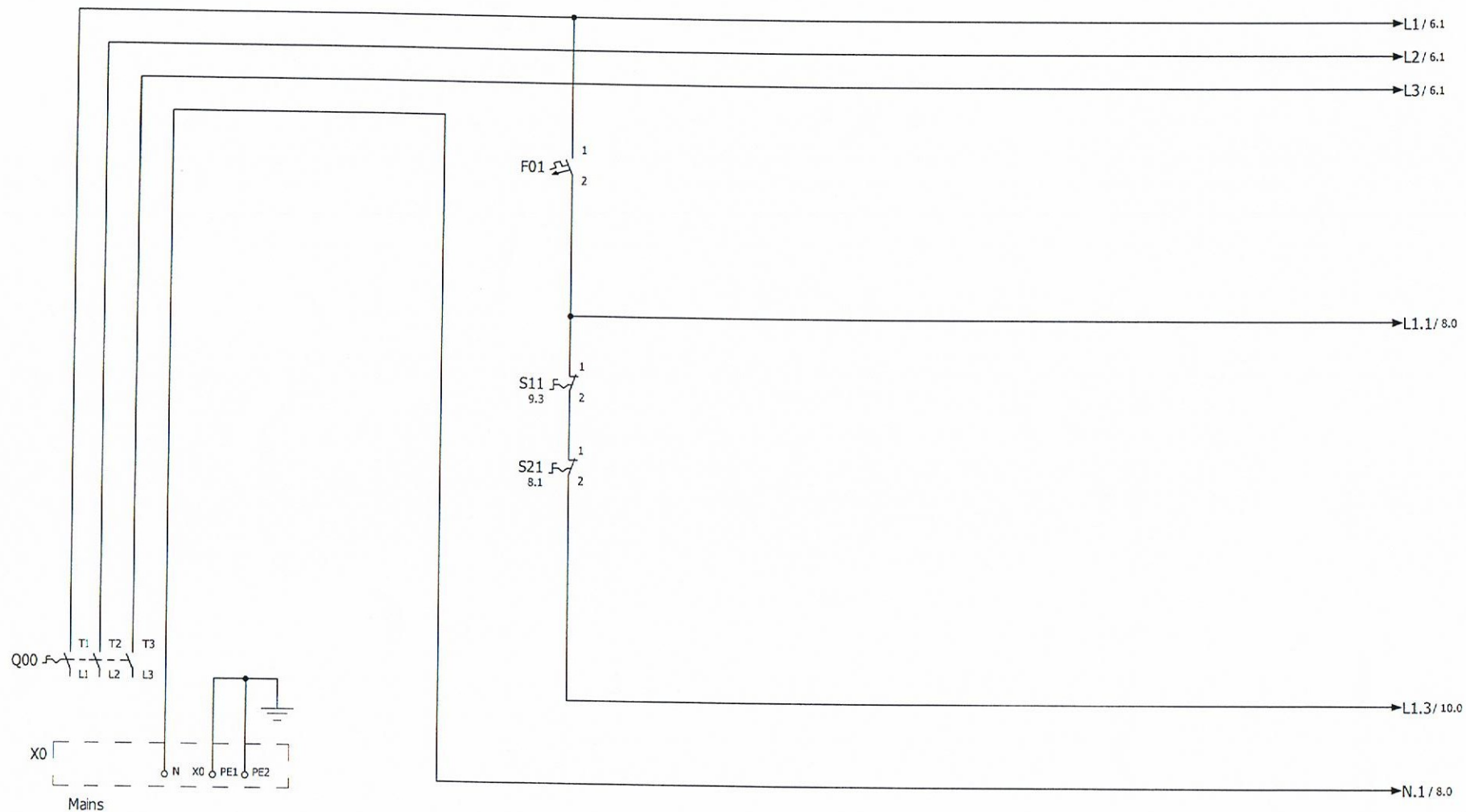
Pos.	Grundfos P.N.	Part Designation	QTY	Manufacturers Type Designation	Manufacturer	Equipment Designation in the Diagram
1	91767256	Control Switch	2	ZB5 AD2	Schneider	S11, S21
2	91767259	Body contact	2	ZB5 AZ105	Schneider	S11.1, S21.1
3	95025067	Cable ground kit DK7113000	1	DK7113000	Schneider	
4	95025838	Cabinet	1	Cabinet GB380x380x210	HFM	
5	97734300	Control Unit	1	CU323 Cpl. Controller 2 pumps	Grundfos	A16
6	00ID4351	V2	1	Switch Vario V2 3P 40A	Schneider	Q00
7	00ID4360	KCD1PZ	1	Handle lockable V0 V1 V2 KCD1PZ	Schneider	Q00.1
8	00ID4372	VZ17	1	Shaft extension suit VZ17 300mm	Schneider	Q00.3
9	00ID9287	Terminal block	6	2004-1201	Wago	X1, X2
10	91767140	End plate	2	2004-1207	Wago	X1, X2
11	00ID9284	Terminal block	10	2004-1201	Wago	X1, X2, X10
12	91070502	Disconnect Terminal block	10	280-683	Wago	X11
13	91767111	End plate	4	2004-1292/280-326	Wago	X1, X2, X10, X11
14	91767119	End stop	3	249-117	Wago	X0, X11, F01
15	91767110	N-Terminal block	1	2006-1201/2006-1207	Wago	X0.N
16	91767113	End plate	1	2006-1292	Wago	X0
17	96481168	Sticker	1	Sticker - logo A150	Grundfos	
18	00ID9169	Aut. circuit breaker	1	CIRCUIT BREAKER 1-POL.S261-B6	ABB	F01
19	96481967	Aux. contact block	1	GV-AE20	Schneider	Q20.1
20	96481996	Transient suppressor	1	LAD-4RCU	Schneider	K22.3
21	00ID9179	Aut. circuit breaker/5.5 kW, 7.5 kW	1	CIRCUIT BREAKER 3-POL.S203-C16	ABB	Q10 (E-pump)
* 22	96481939	Manual motor starter/50 Hz/5.8 kW	1	Manual motor starter GV2-ME16 9-14A	Schneider	Q20 (S-pump)
* 23	96481971	Contactor/50 Hz/5.8 kW	1	Contactor - Type LC1-D12M7 230VTeSys	Schneider	K22 (S-pump)

* Selectable according to the related power range

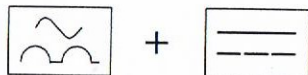
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Date	2013/10/8		Spare Parts List	=	+	Page 4
Ed.	53654					
Appr						

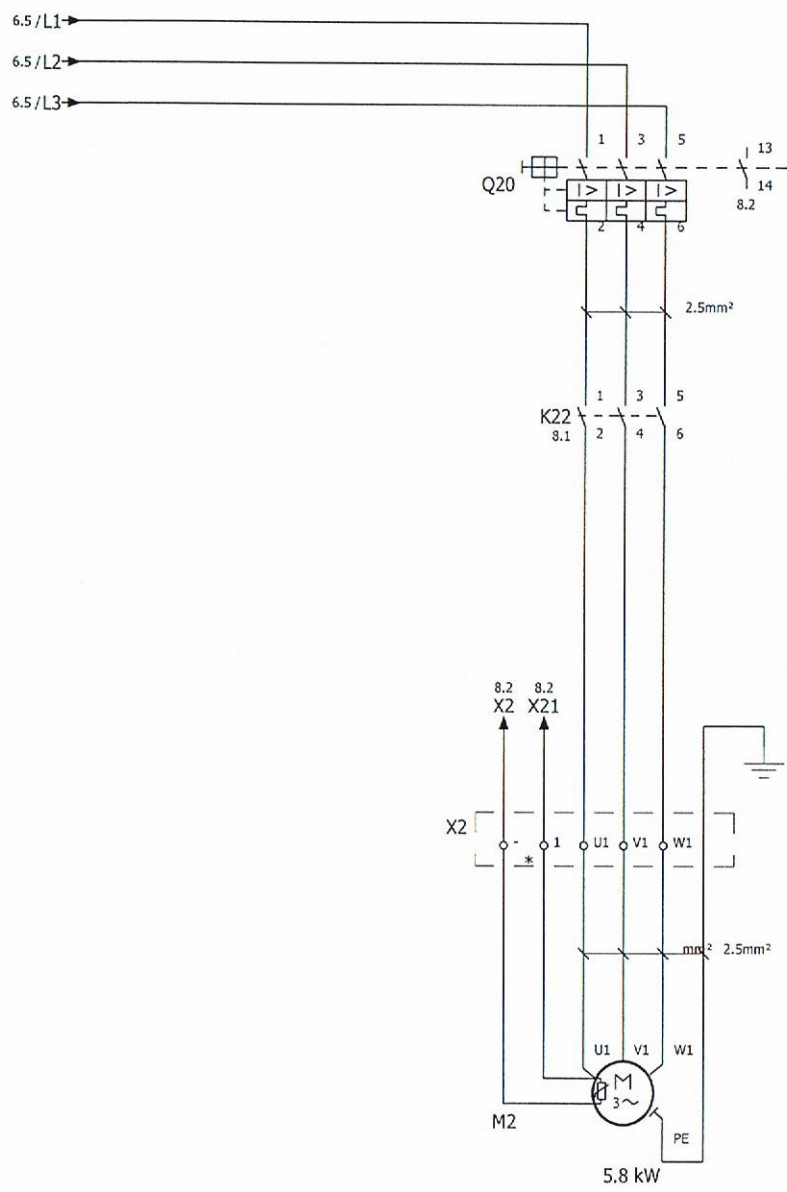




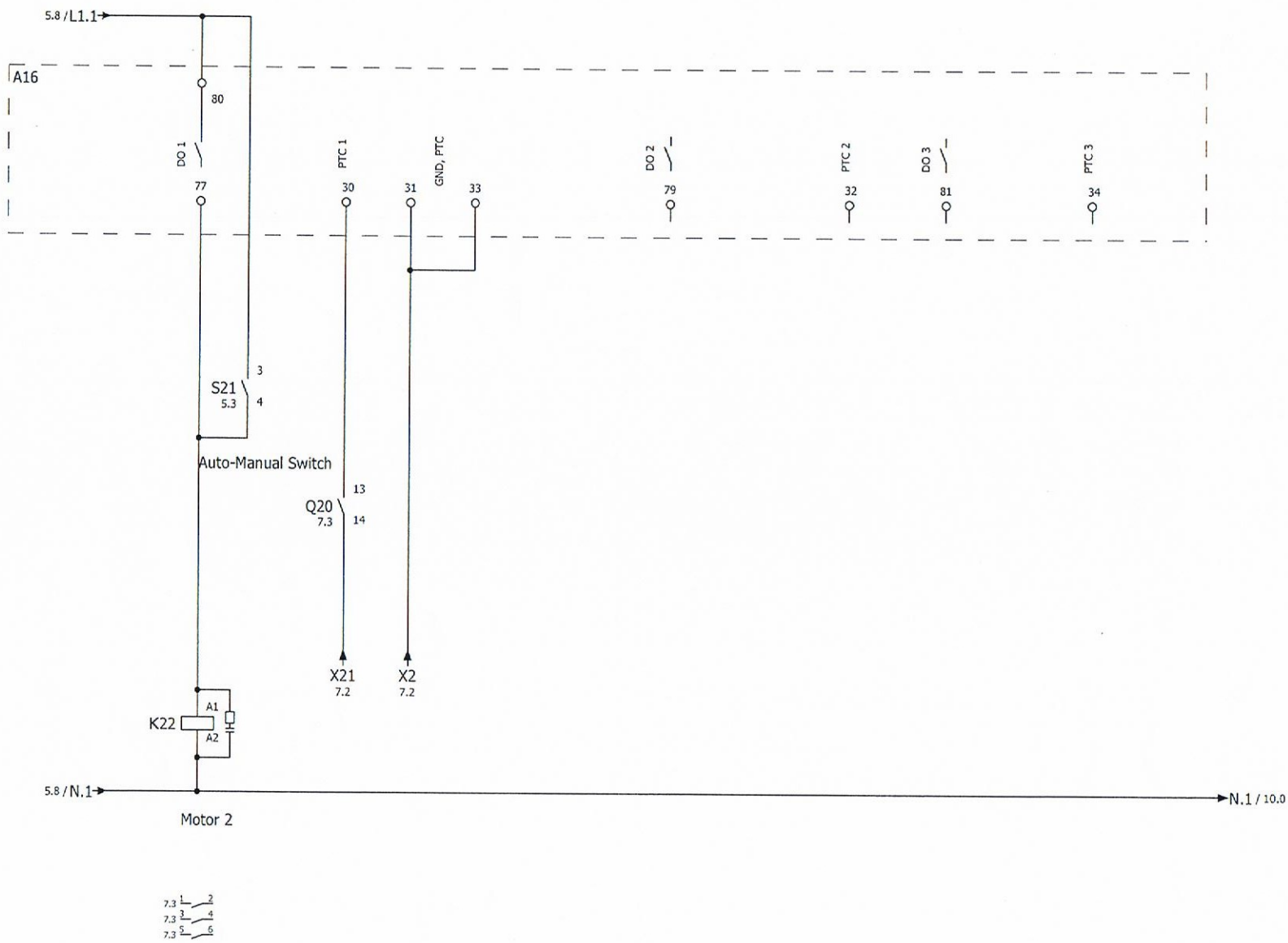
If an earth leakage current
breaker shall be installed
in the mains supply, it must
be marked







* Insert bridge if thermistor or winding protection switch is not connected



Modification	Date	Name	Design	Drawn by

Date 2011/6/13
Ed. 40728
Appr.

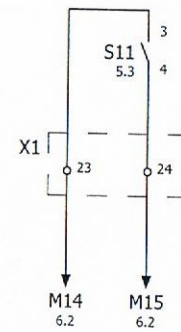


ES, DOL,SD Control Circuit Motor 2

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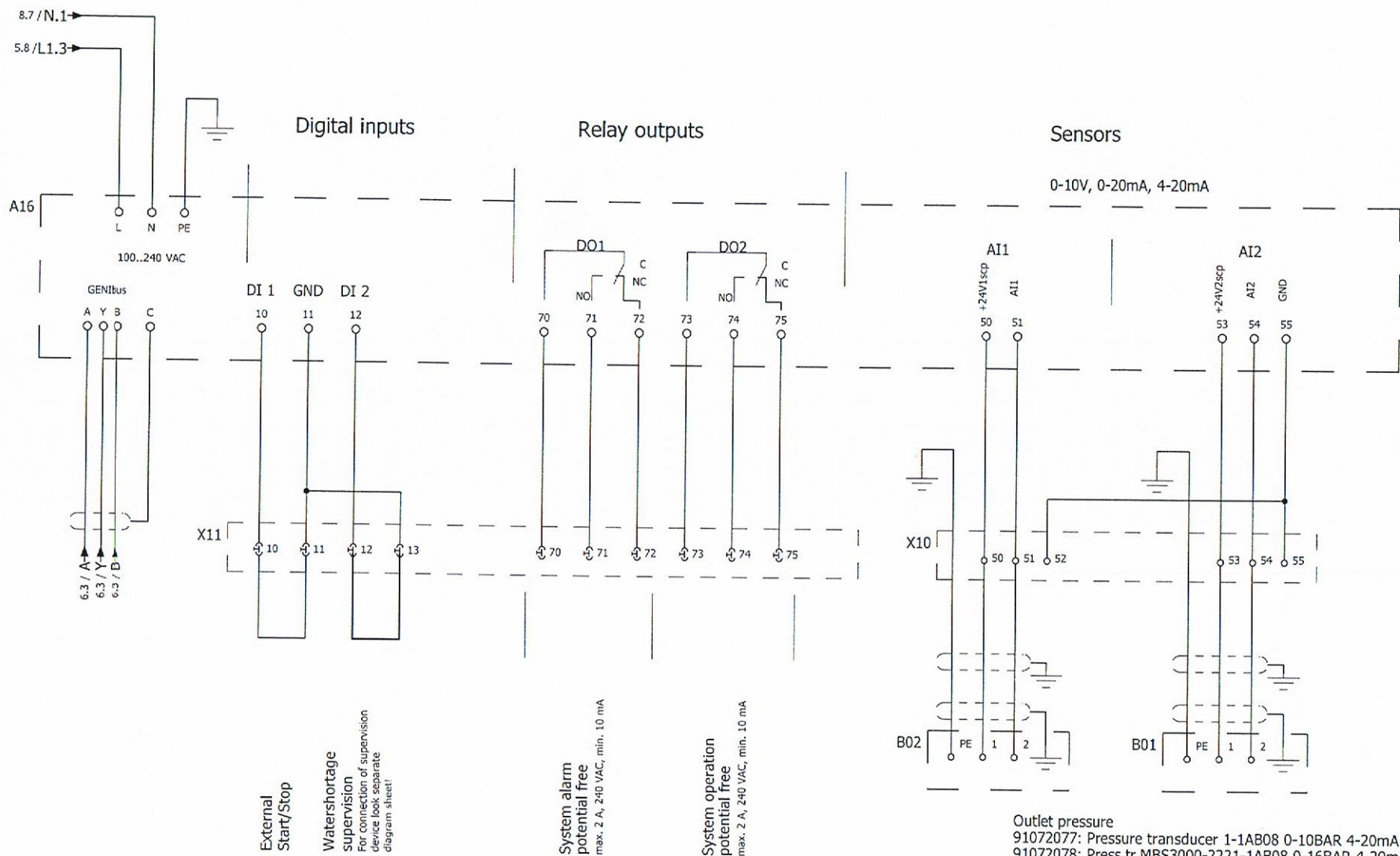
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Auto - Manual Switch



			Date	2011/6/13
			Ed.	40728
			Appr	
Modification	Date	Name	Original	Replacement of
				Replaced by





External
Start/Stop

Watershortage
supervision

For connection of supervision
device look separate
diagram sheet!

System alarm
potential free

max. 2 A, 240 VAC, min. 10 mA

System operation
potential free

max. 2 A, 240 VAC, min. 10 mA

Potential free operation
and fault

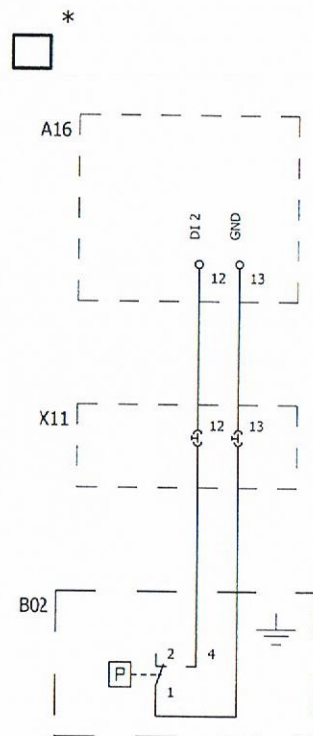
Outlet pressure
91072077: Pressure transducer 1-1AB08 0-10BAR 4-20mA
91072078: Press.tr.MBS3000-2221-1AB08 0-16BAR 4-20mA

Inlet pressure
96051726: Press.tr.MBS3000 0-1 bar 4-20 mA
97550914: MBS 1900 6 BAR

If other supervision devices are used, relate to their
specific terminal designations

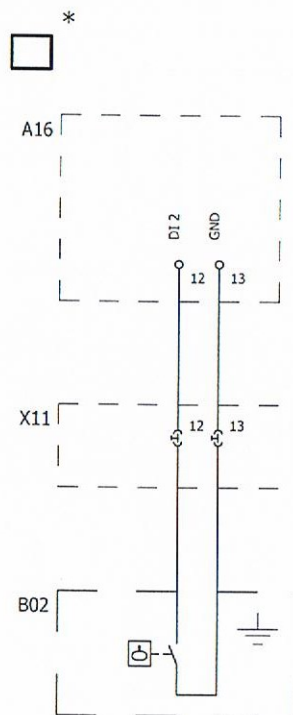
Connection of Different Water Shortage Supervision Devices

Pressure switch

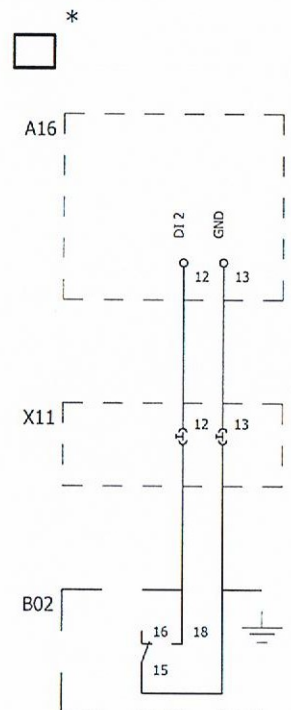


Example:
Type:
FF4.../KPI...

Float switch



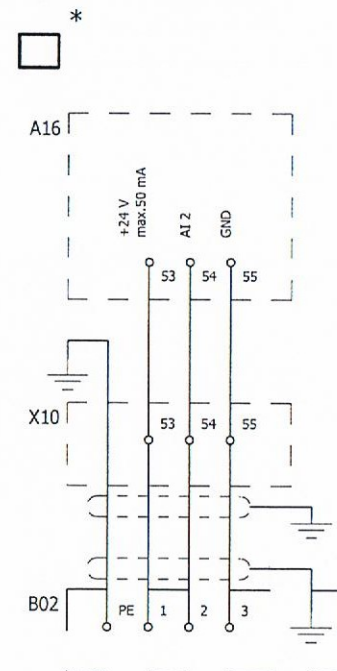
Electrode relay
extern cabinet



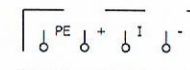
Example:
Type:
RM3-LG201MU7

Pre-pressure transmitter

4..20 mA / 0..20 mA / 0..10V



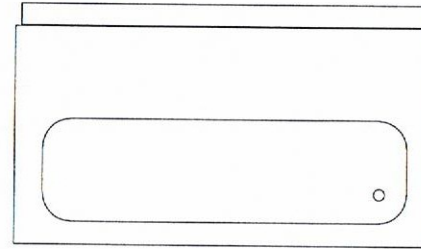
If voltage mode (0..10V), the 2 and 3 connection will be used
If current mode (0..20mA/4..20mA), the 1 and 2 connection will be used



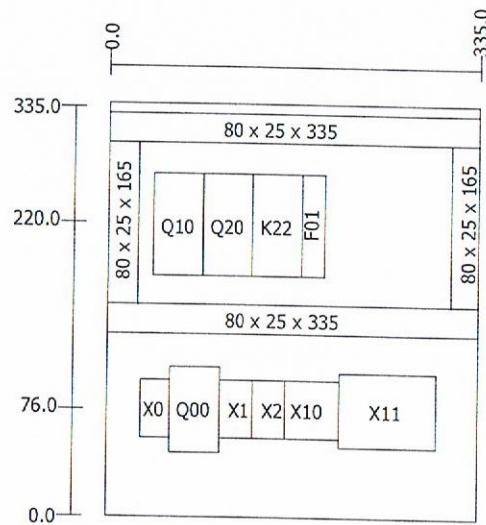
* mark if actually
installed

If other supervision devices are used, relate to their
specific terminal designations

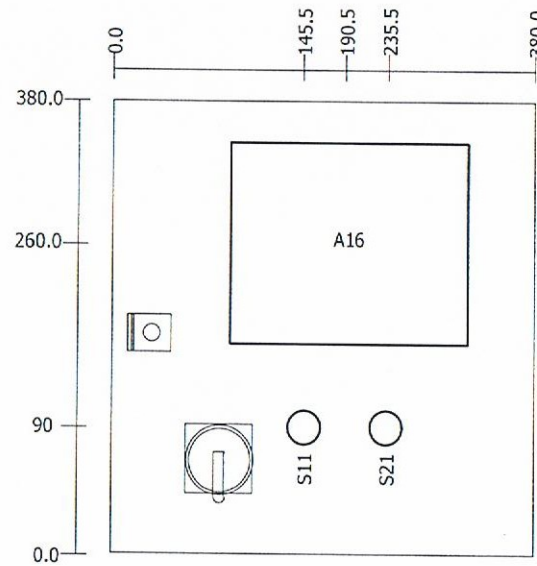
Bottom View



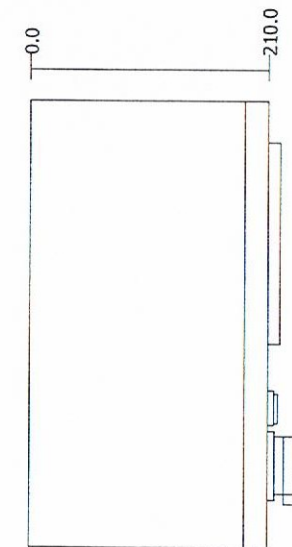
Mounting Plate



Front View



Leftside View



Tolerances : $\pm 3\text{mm}$

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Modification	Date	Name	Original	Replacement of	Replaced by	Layout 380x380	=	Page 12
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			Ed. 40728					
			Appr					