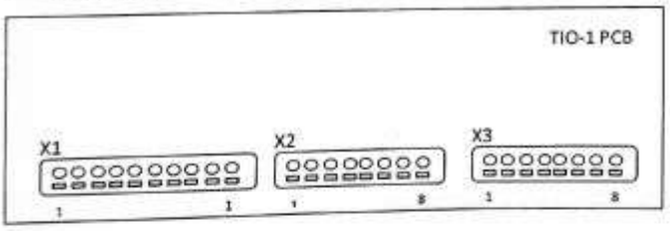
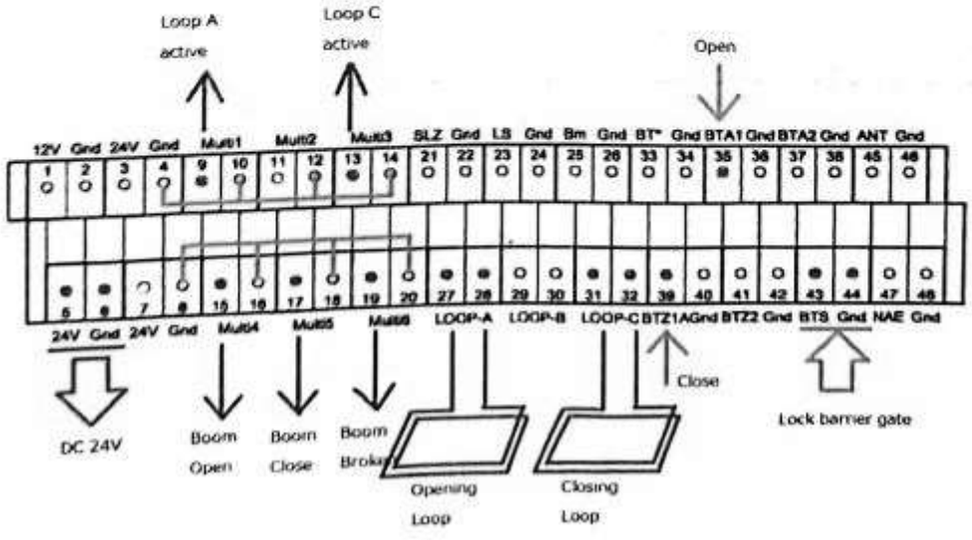
CONNECTIONS LANE TERMINAL WITH TIO-1 PCB TO XP120x/Pxxx

Function	TIO-1 PCB Terminal nr. (INPUTS)	XP120x/Pxxx Terminal number
COM + (24 Vdc)	X1-pin1	5
ARMING LOOP	X1-pin3	9
CLOSING LOOP	X1-pin4	13
BOOM OPEN	X1-pin6	15
BOOM CLOSED	X1-pin7	17

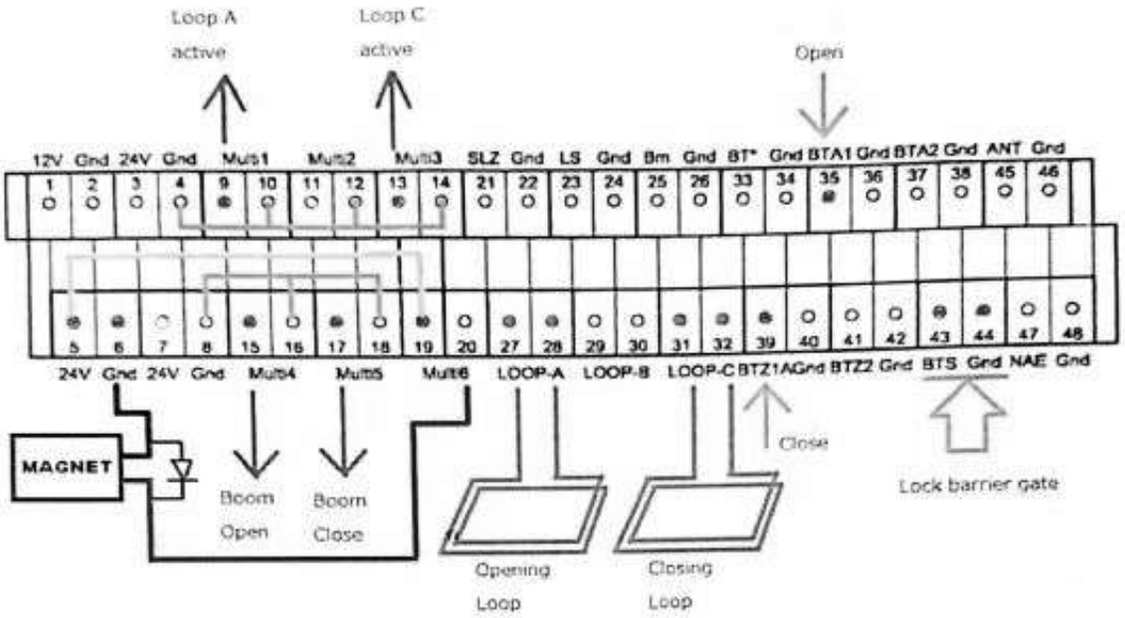
Function	Terminal nr. (OUTPUTS)	Terminal number
COM - (0 Vdc)	X2-pin4	6
OPEN BARRIER GATE	X2-pin3	35
COM - (0 Vdc)	X2-pin6	
CLOSE BARRIER GATE	X2-pin5	39
LOCK BARRIER GATE	X2-pin1	43
LOCK BARRIER GATE	X2-pin2	44
PRE-FULL/FREE (dry contact)		
PRE-FULL/FREE (dry contact)		
FULL/FREE (dry contact)		
FULL/FREE (dry contact)		
EXTERNAL COUNTING (dry contact)		
EXTERNAL COUNTING (dry contact)		

Don't forget jumper between X2-pin4 and X2-pin6.



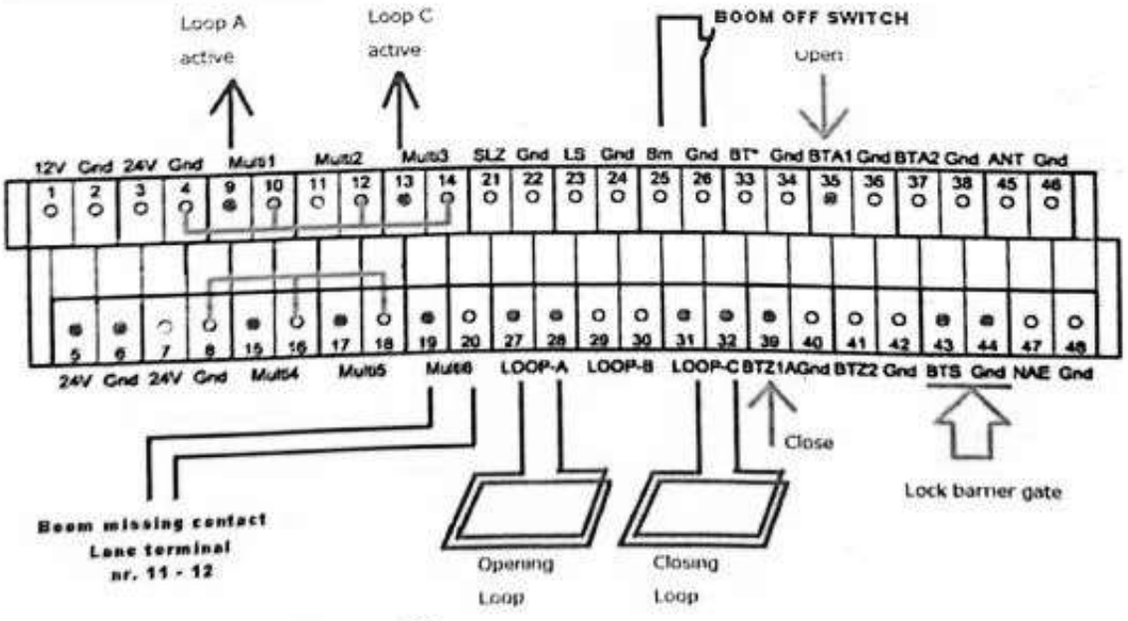


Connections electromagnet

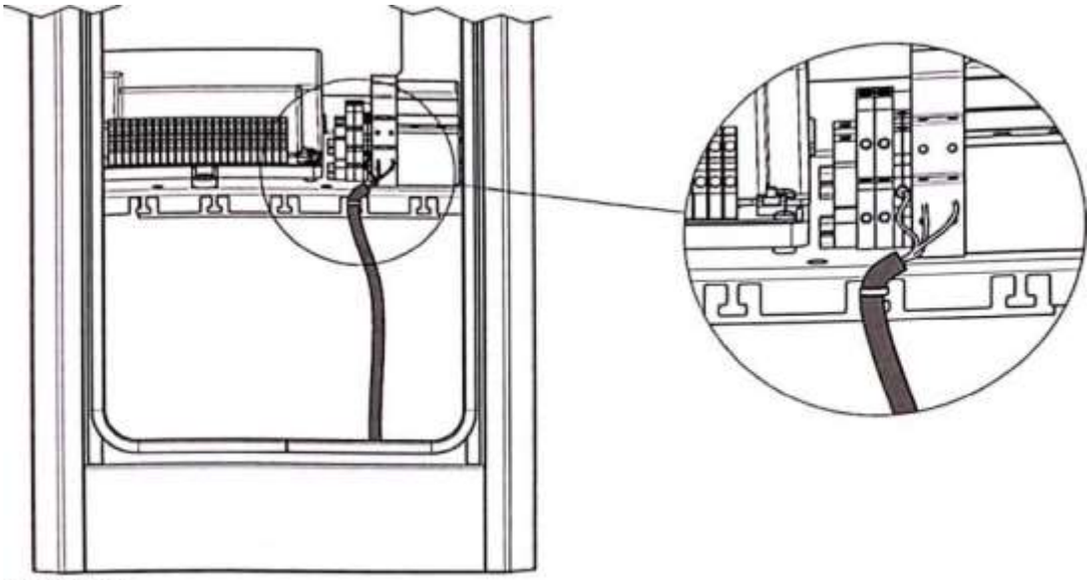


* Remove bridge between clamp 18 and 20
* Add bridge between clamp 5 (24Vdc) and 19
* Connect the electromagnet to clamp 6 (0Vdc) and 20
* Configure multi-relay 6 to "BARRIER CLOSED (electromagnet)
* Set additional function "Pre-warning before opening to 1,5s"

Connections boom off switch



* Remove bridge between clamp 18 and 20
* Remove bridge between clamps 25 and 26
* Connect the boom off switch to clamps 25 and 26
* Connect the output nrs. 19 and 20 to the lane terminal clamps 11 and 12
* Configure multi-relay 6 for "BOOM MISSING" (Amano standard setting)

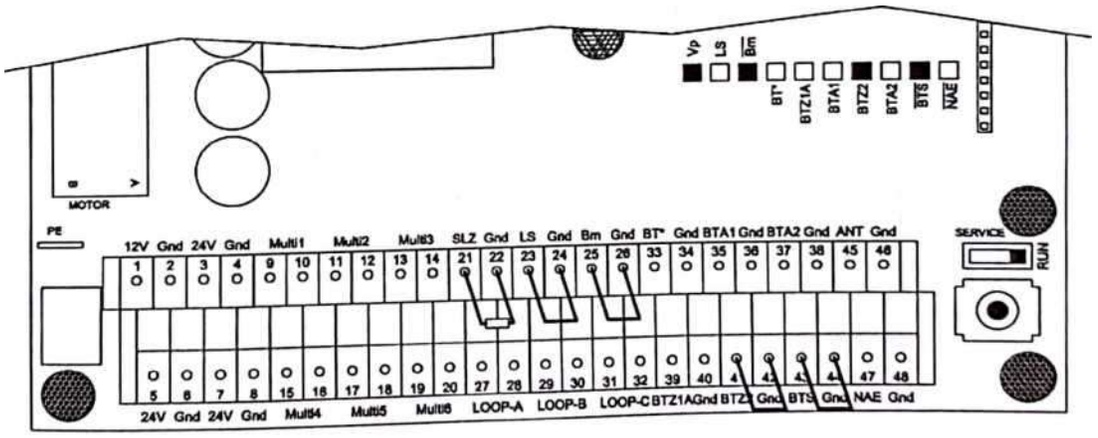


Drawing 31

Connecting the power line:

1. Lay the power line via the shortest possible way to the main switch. Make sure the power line does not have contact with any movable mechanical parts.
2. Connect the power line to the main switch and to the earth lead terminal.
3. Fasten/secure the power line by cable ties at the provided tabs.

8.3 Controller terminal rovy



Drawing 32

The following control inputs have to be bridged or occupied with contact (NC) for operation:

1.	Terminals 23 + 24	Photoelectric barrier (LS)	NC contact or bridge
2.	Terminals 25 + 26	Boom missing contact (Bm)	NC contact or bridge
3.	Terminals 41 + 42	Push button CLOSE (BTZ2)	NC contact or bridge
4.	Terminals 43 + 44	Push button STOP (BTS)	NC contact or bridge

After installing and connecting all the equipment, the following LEDs have t light:

1.	Vp	Is lit, when the supply voltage is switched on.
2.	BTZ2	Is lit, when contact B IZ2 is closed.
3.	BTS	Is lit, when contact BTS is closed.
4.	Bin.	Is lit, when the boom-missing contact is closed.
5.	Termin als 21 +	Safety contact profile CLOSE (SLZ)

Table 10

Plug	**Socket label**	**Function ~**
1	12V	Uext 12V, max. 500mA
2	Gnd	Ground
3	24V	Uext 24V, in total with terminal 5 and 7 max 1500mA
4	Gnd	Ground
5	24V	Uext 24V, in total with terminal 3 and 7 max. 1500mA
6	Gnd	Ground
7	24V	Uext 24V, in total with terminal 3 and 5 max. 1500mA
8	Gnd	Ground
9	Multil	Multi-functional relay 1, potential-free, max. 24VDC/1A
10		
11	Multi2	Multi-functional relay 2, potential-free, max. 24VDC/1A
12		
13	Multi3	Multi-functional relay 3, potential-free, max. 24VDC/1A
14		
15	Multi4	Multi-functional relay 4, potential-free, max. 24VDC/1A
16		
17	Multi5	Multi-functional relay 5, potential-free, max. 24VDC/1A
18		
19	Multi6	Multi-functional relay 6, potential-free, max. 24VDC/1A
20		
21	SLZ	Safety contact profile CLOSE, 8.2kOhm ——
22	Gnd	Ground _____ _____ -—■
23	LS	Photoelectric barrier (NC contact) ___ _____

Plug	Socket label	
~24	Gnd	function ---------- ----
25	Bm	Ground
26	Gnd	J^n-missing contact Ground
27	**LOOP-A**	Induction loop A
28		
29	**LOOP-B**	Induction loop B
30		
31	LOOP-C	Induction loop C
32		
33	BT*	Configurable input: BT or BTA3 or BTZ1B (NO contact)
34	Gnd	Ground
35	BTA1	Push button OPEN 1 (NO contact)
36	Gnd	Ground
37	BTA2	Push button OPEN 2 (NO contact)
38	Gnd	Ground
39	BTZ1A	Push button CLOSE 1A (NO contact)
40	Gnd	Ground
41	BTZ2	Push button CLOSE 2 (NC contact)
42	Gnd	Ground
43	BTS	Push button STOP (NC contact)
44	Gnd	Ground
45	ANT	Antenna
46	Gnd	Ground
47	NAE	Power failure detection (ANAE)
48	Gnd	Ground

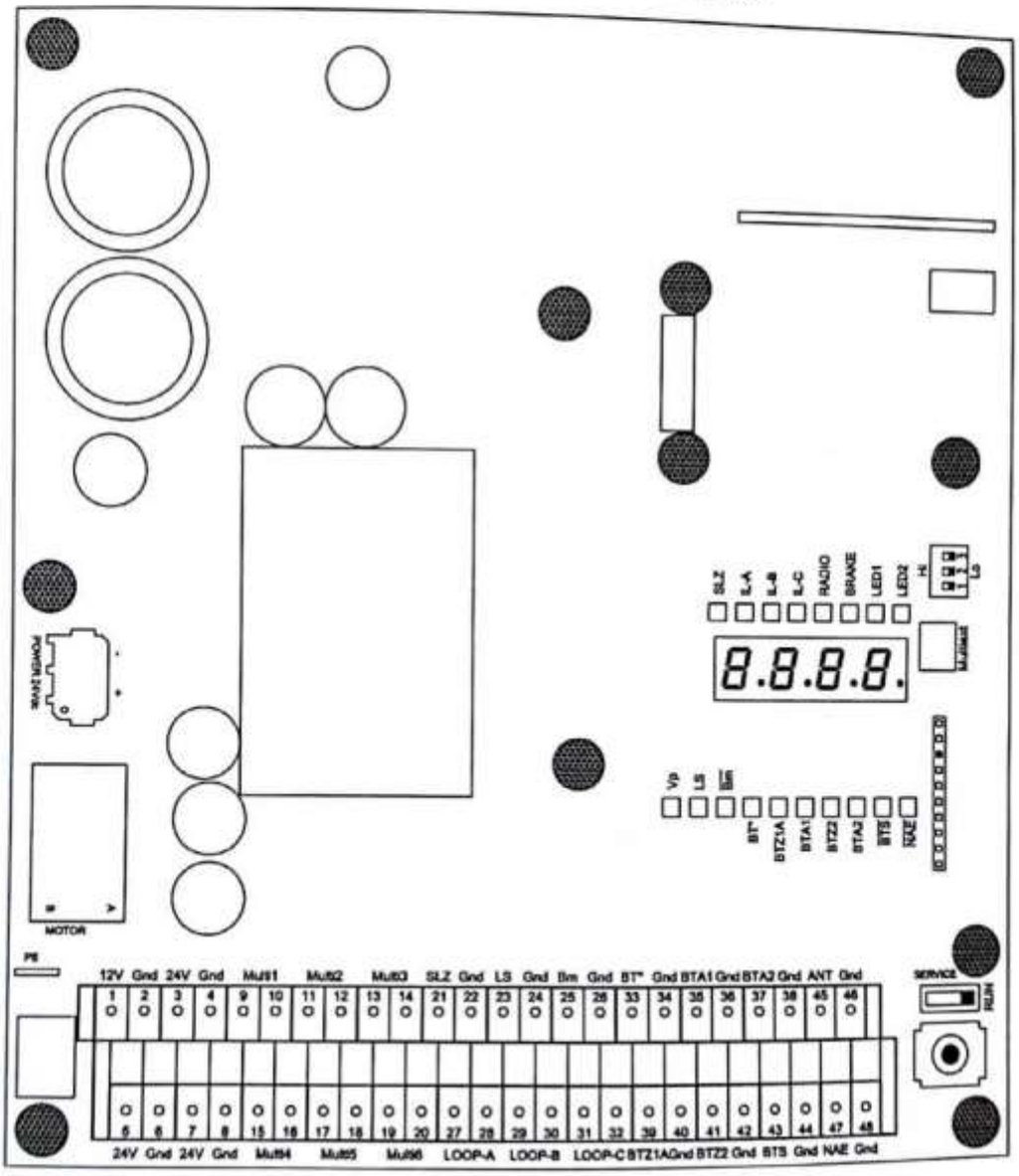
Table 11

2 Controller MO 24

2.1 Connections of MO 24

2.1.1 Connection diagram MO 24

The following drawing shows an overview of the controller.



Drawing 1

2.1.2

OUTPUT	Function
1 - 2 12V-Gnd	12Vdc, *stabilized, max. 500mA*
3-4 24V - Gnd	*24Vdc, stabilized, max. 1.500mA*
5-6 24V - Gnd	24Vdc, stabilized, max. 1.500mA
7-8 24V - Gnd	24Vdc, *stabilized, max. 1.500mA*
9 - 10 *Multi 1*	*Multi-functional* relays Multi1, Potential-free configurable.
11 - 12 Multi2	*Multi-functional* relays Multi2, *potential-free. The function is* configurable.
13-14 Multi3	Multi-functional relays *Multi3, potential-free. The function is* configurable.
15 - 16 *Multi4*	Multi-functional relays Multi4, potential-free. *The function is* configurable.
17 - 18 Multi5	Multi-functional relays *Multi5,* potential-free. The function *is* configurable.
19 - 20 *IV Multi6*	Multi-functional relays *Multi6,* potential-free. *The function is* configurable.

Table 1


MD24
V2