

Totally Integrated Automation Portal

Program blocks

Main [OB1]

Main Properties

General

Name	Main	Number	1	Type	OB
Language	LAD				

Information

Title	Hlavní program OB1	Author	xmaly6	Comment	Tento program volá námi vytvořené funkční bloky.
Family		Version	0.1	User-defined ID	

Name	Data type	Offset	Comment
▼ Temp			
OB1_EV_CLASS	Byte		Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class 1)
OB1_SCAN_1	Byte		1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
OB1_PRIORITY	Byte		Priority of OB Execution
OB1_OB_NUMBR	Byte		1 (Organization block 1, OB1)
OB1_RESERVED_1	Byte		Reserved for system
OB1_RESERVED_2	Byte		Reserved for system
OB1_PREV_CYCLE	Int		Cycle time of previous OB1 scan (milliseconds)
OB1_MIN_CYCLE	Int		Minimum cycle time of OB1 (milliseconds)
OB1_MAX_CYCLE	Int		Maximum cycle time of OB1 (milliseconds)
OB1_DATE_TIME	Date_And_Time		Date and time OB1 started

Network 1: Zavolání funkčního bloku pro kontrolu výchozích pozic

%FC1

"Default_position"

EN

ENO

Symbol	Address	Type	Comment
"Default_position"	%FC1	Block_FC	

Network 2: Zavolání funkčního bloku Feed

%FC2

"Feed"

EN

ENO

Symbol	Address	Type	Comment
"Feed"	%FC2	Block_FC	

Network 3: Zavolání funkčního bloku Transfer1

Totally Integrated Automation Portal

%FC3

Transfer1

EN

ENO

Symbol	Address	Type	Comment
Transfer1	%FC3	Block_FC	

Network 4: Zavolání funčního bloku Measurement

%FC4

Measurement

EN

ENO

Symbol	Address	Type	Comment
Measurement	%FC4	Block_FC	

Network 5: Zavolání funčního bloku Transfer2

%FC5

Transfer2

EN

ENO

Symbol	Address	Type	Comment
Transfer2	%FC5	Block_FC	

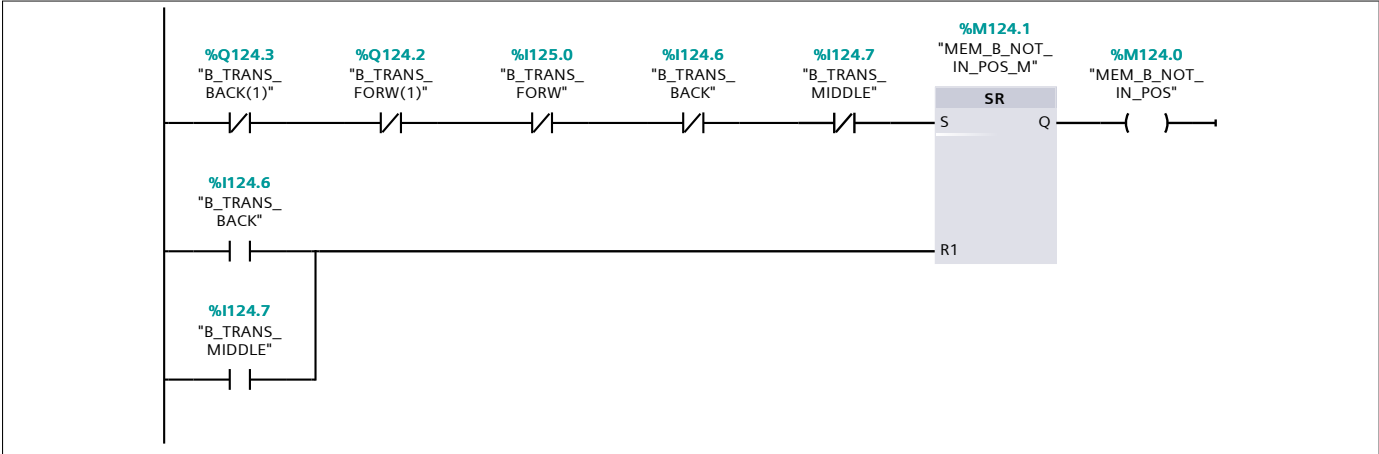
Program blocks

Default_position [FC1]

Default_position Properties					
General					
Name	Default_position	Number	1	Type	FC
Language	LAD				
Information					
Title	Výchozí pozice	Author	xmaly6	Comment	Tento funkční blok má za úkol zjistit zda všechna ramena jsou ve výchozích pozicích
Family		Version	0.1	User-defined ID	

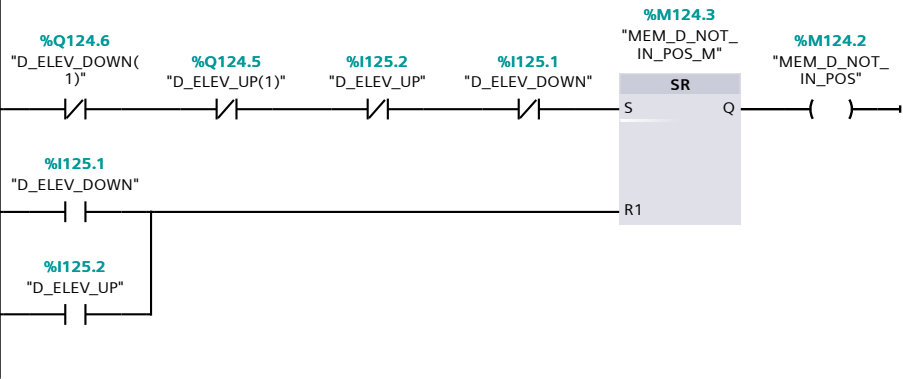
Name	Data type	Offset	Comment
Input			
Output			
InOut			
Temp			
▼ Return			
Ret_Val	Void		

Network 1: Ověření výchozí pozice podavače B



Symbol	Address	Type	Comment
"MEM_B_NOT_IN_POS_M"	%M124.1	Bool	
"MEM_B_NOT_IN_POS"	%M124.0	Bool	
"B_TRANS_BACK"	%I124.6	Bool	
"B_TRANS_MIDDLE"	%I124.7	Bool	
"B_TRANS_BACK(1)"	%Q124.3	Bool	
"B_TRANS_FORW(1)"	%Q124.2	Bool	
"B_TRANS_FORW"	%I125.0	Bool	

Network 2: Zjištění zdali se výtah D nachází ve výchozí pozici



Symbol	Address	Type	Comment
"MEM_D_NOT_IN_POS"	%M124.2	Bool	
"MEM_D_NOT_IN_POS_M"	%M124.3	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"D_ELEV_UP"	%I125.2	Bool	
"D_ELEV_DOWN(1)"	%Q124.6	Bool	
"D_ELEV_UP(1)"	%Q124.5	Bool	

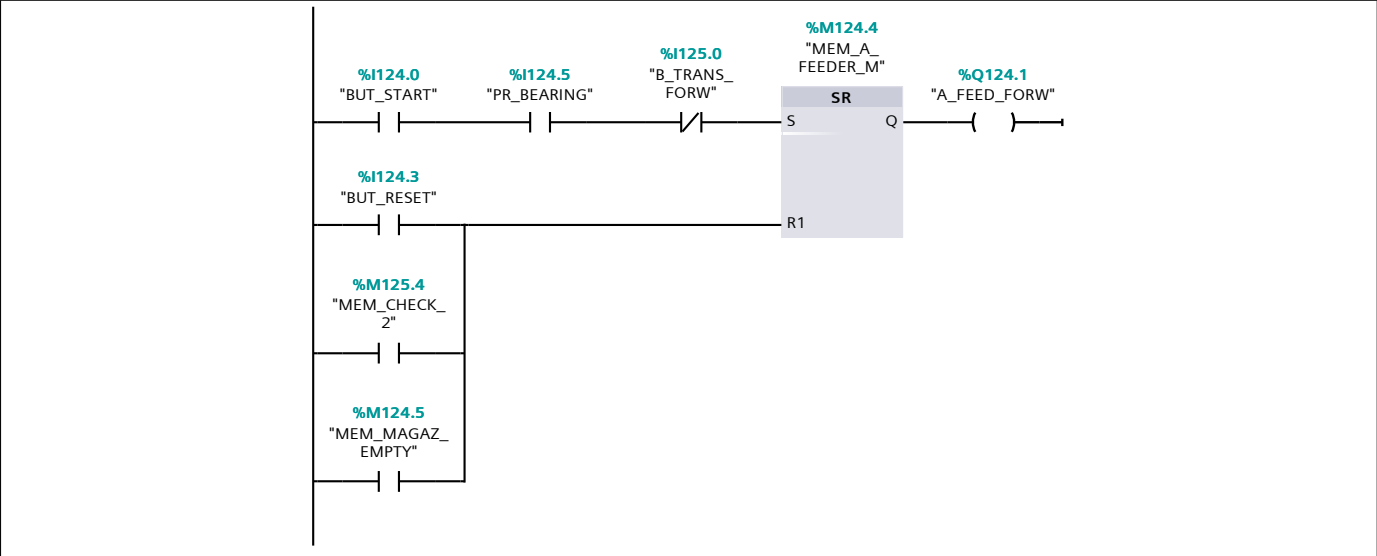
Program blocks

Feed [FC2]

Feed Properties					
General					
Name	Feed	Number	2	Type	FC
Language	LAD				
Information					
Title	Funkční blok pro podání ložiska ze zásobníku	Author	xmaly6	Comment	Tento blok má za úkol zajistit podání ložiska ze zásobníku, detekovat úspěšné podání ložiska, případně signalizovat obsluze, že je zásobník prázdný
Family		Version	0.1	User-defined ID	

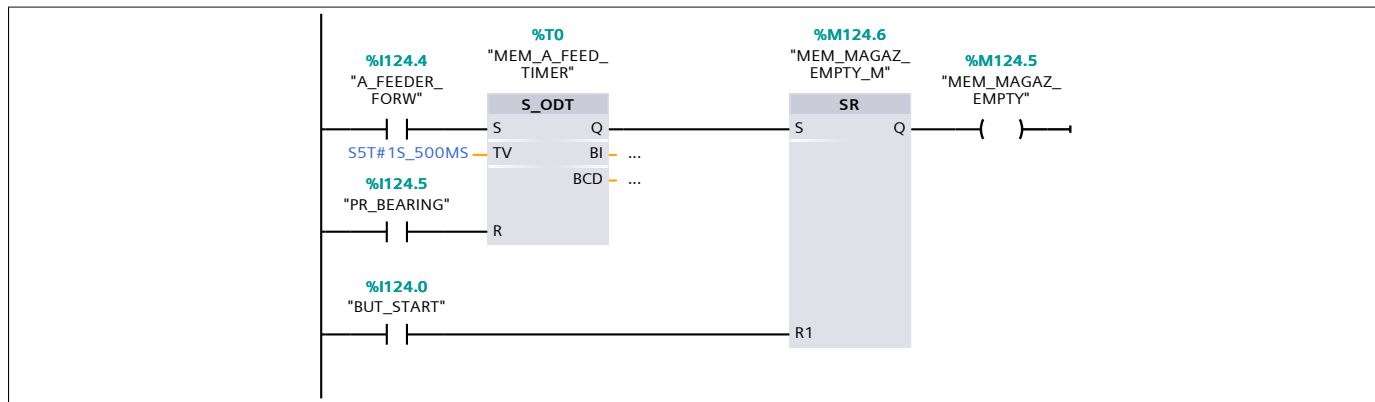
Name	Data type	Offset	Comment
Input			
Output			
InOut			
Temp			
▼ Return			
Ret_Val	Void		

Network 1: Ovládání podavače ložisek A ze zásobníku

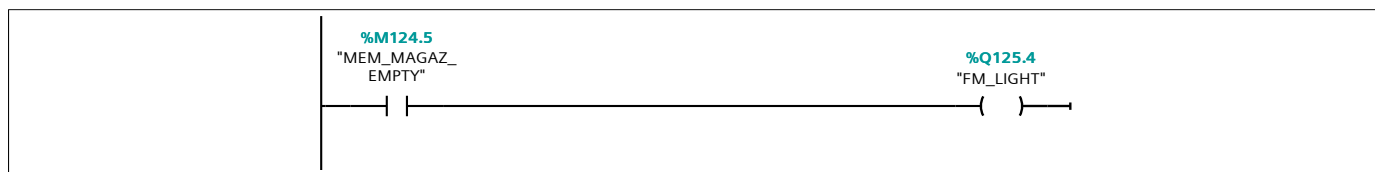


Symbol	Address	Type	Comment
"BUT_START"	%I124.0	Bool	
"BUT_RESET"	%I124.3	Bool	
"MEM_A_FEEDER_M"	%M124.4	Bool	
"A_FEED_FORW"	%Q124.1	Bool	
"PR_BEARING"	%I124.5	Bool	
"B_TRANS_FORW"	%I125.0	Bool	
"MEM_MAGAZ_EMPTY"	%M124.5	Bool	

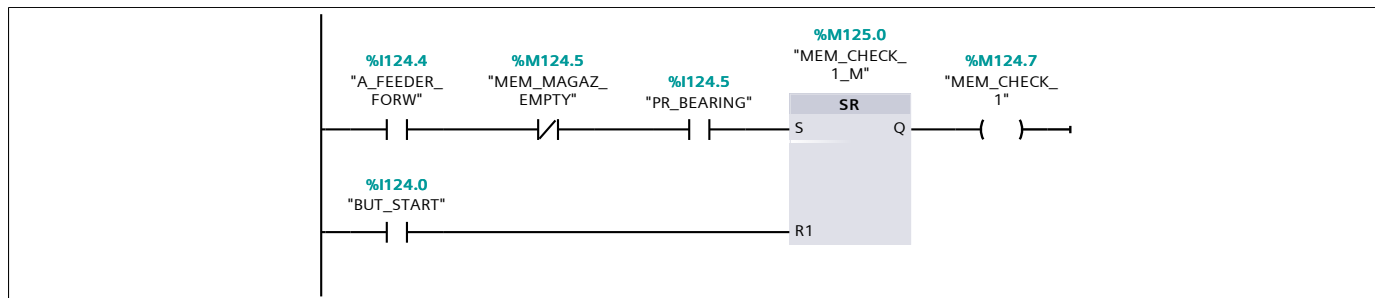
Symbol	Address	Type	Comment
"MEM_CHECK_2"	%M125.4	Bool	

Network 2: Detekce nepodání ložiska ze zásobníku

Symbol	Address	Type	Comment
"BUT_START"	%I124.0	Bool	
"PR_BEARING"	%I124.5	Bool	
"A_FEEDER_FORW"	%I124.4	Bool	
S5T#1S_500MS	S5T#1S_500MS	S5Time	
"MEM_A_FEED_TIMER"	%T0	Timer	
"MEM_MAGAZ_EMPTY"	%M124.5	Bool	
"MEM_MAGAZ_EMPTY_M"	%M124.6	Bool	

Network 3: Signalizace prázdného zásobníku pomocí FM světla

Symbol	Address	Type	Comment
"MEM_MAGAZ_EMPTY"	%M124.5	Bool	
"FM_LIGHT"	%Q125.4	Bool	

Network 4: Kontrolní bod I. signalizující podané ložisko ze zásobníku připravené pro další přenos

Totally Integrated Automation Portal																														
<table><tr><th>Symbol</th><th>Address</th><th>Type</th><th>Comment</th></tr><tr><td>"BUT_START"</td><td>%I124.0</td><td>Bool</td><td></td></tr><tr><td>"PR_BEARING"</td><td>%I124.5</td><td>Bool</td><td></td></tr><tr><td>"A_FEEDER_FORW"</td><td>%I124.4</td><td>Bool</td><td></td></tr><tr><td>"MEM_MAGAZ_EMPTY"</td><td>%M124.5</td><td>Bool</td><td></td></tr><tr><td>"MEM_CHECK_1_M"</td><td>%M125.0</td><td>Bool</td><td></td></tr><tr><td>"MEM_CHECK_1"</td><td>%M124.7</td><td>Bool</td><td></td></tr></table>	Symbol	Address	Type	Comment	"BUT_START"	%I124.0	Bool		"PR_BEARING"	%I124.5	Bool		"A_FEEDER_FORW"	%I124.4	Bool		"MEM_MAGAZ_EMPTY"	%M124.5	Bool		"MEM_CHECK_1_M"	%M125.0	Bool		"MEM_CHECK_1"	%M124.7	Bool			
Symbol	Address	Type	Comment																											
"BUT_START"	%I124.0	Bool																												
"PR_BEARING"	%I124.5	Bool																												
"A_FEEDER_FORW"	%I124.4	Bool																												
"MEM_MAGAZ_EMPTY"	%M124.5	Bool																												
"MEM_CHECK_1_M"	%M125.0	Bool																												
"MEM_CHECK_1"	%M124.7	Bool																												

Program blocks

Measurement [FC4]

Measurement Properties

General	
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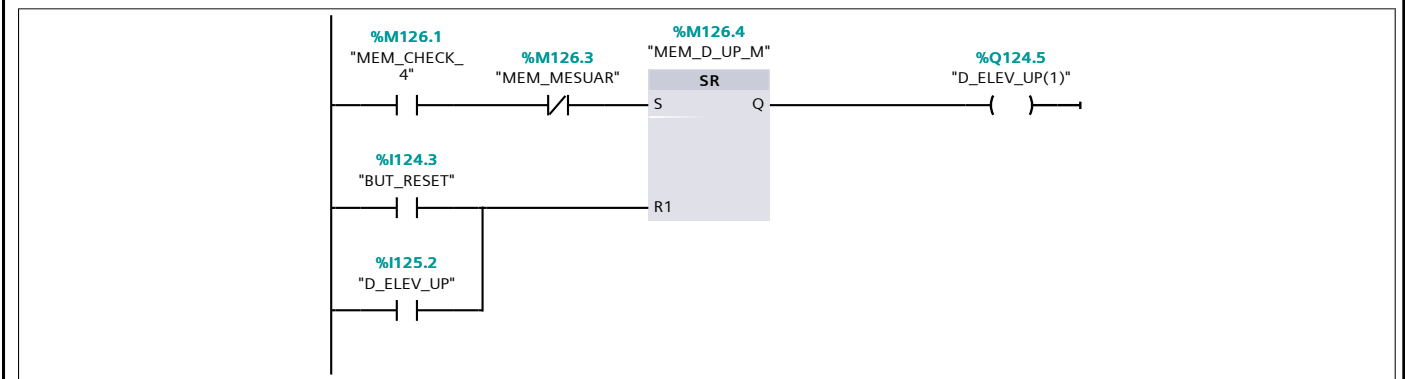
Name	Measurement	Number	4	Type	FC
Language	LAD				

Information	
1	Information
2	Information
3	Information
4	Information
5	Information
6	Information
7	Information
8	Information
9	Information
10	Information
11	Information
12	Information
13	Information
14	Information
15	Information
16	Information
17	Information
18	Information
19	Information
20	Information
21	Information
22	Information
23	Information
24	Information
25	Information
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81	Information
82	Information
83	Information
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85	Information
86	Information
87	Information
88	Information
89	Information
90	Information
91	Information
92	Information
93	Information
94	Information
95	Information
96	Information
97	Information
98	Information
99	Information
100	Information

Title	Funkční blok provádějící měření výšky ložiska	Author	xmaly6	Comment	Úkolem toho bloku je zajistit změření výšky ložiska
Family		Version		User-defined ID	

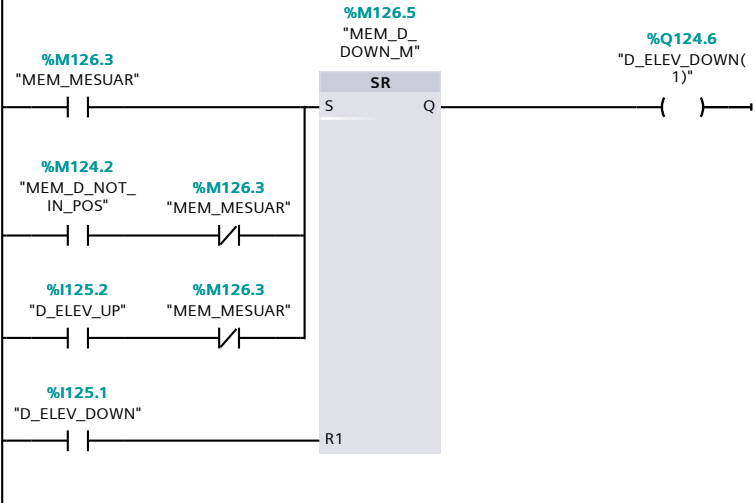
Name	Data type	Offset	Comment
Input			
Output			
InOut			
Temp			
▼ Return			
Ret_Val	Void		

Network 1: Vyjetí plošiny D nahoru



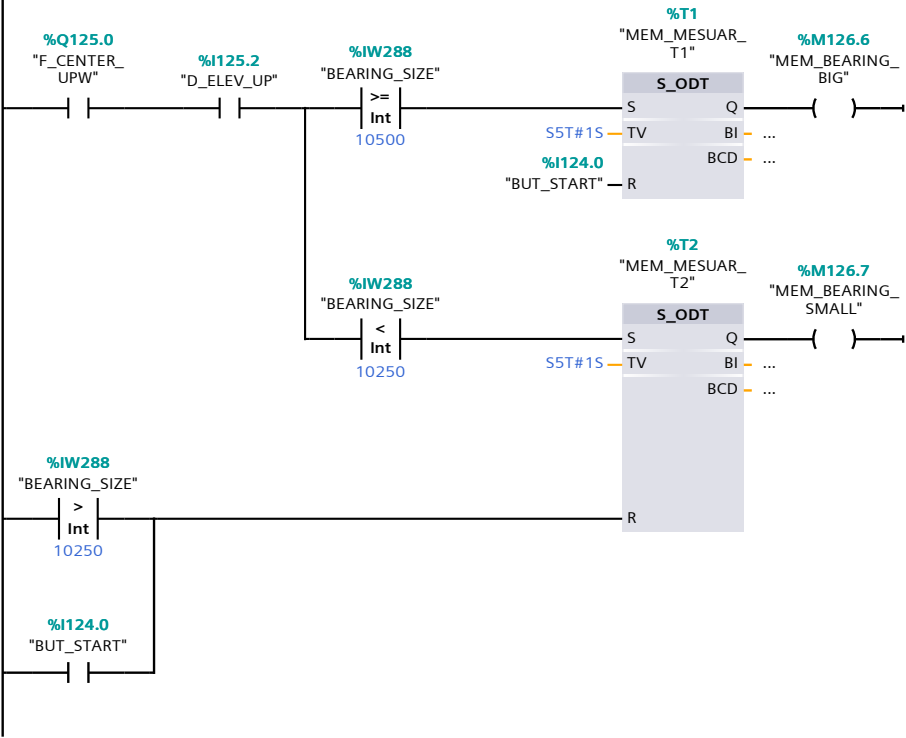
Symbol	Address	Type	Comment
"MEM_CHECK_4"	%M126.1	Bool	
"MEM_MESUAR"	%M126.3	Bool	
"BUT_RESET"	%I124.3	Bool	
"MEM_D_UP_M"	%M126.4	Bool	
"D_ELEV_UP(1)"	%Q124.5	Bool	
"D_ELEV_UP"	%I125.2	Bool	

Network 2: Sjetí plošiny D dolů



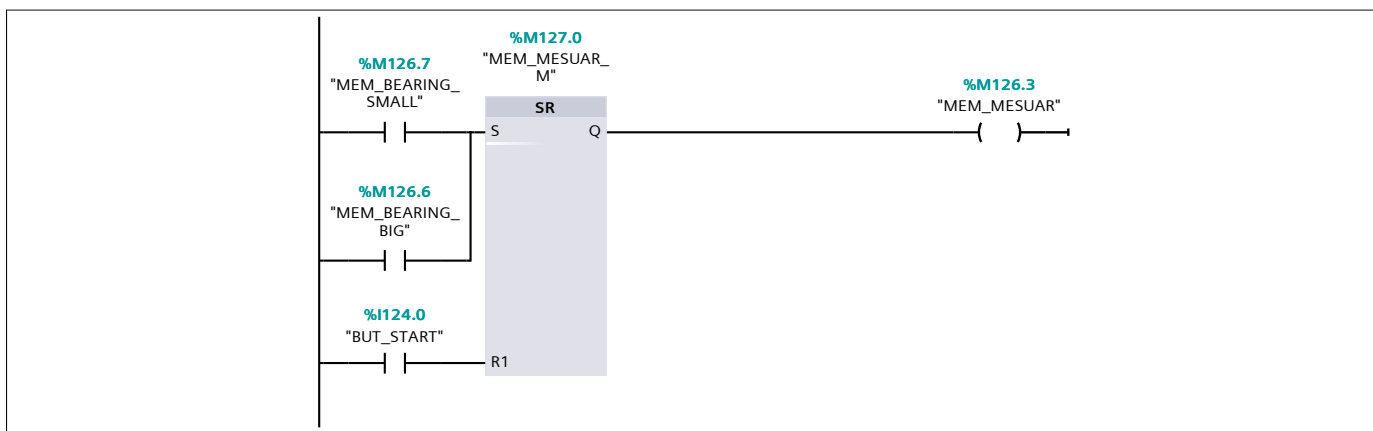
Symbol	Address	Type	Comment
"MEM_MESUAR"	%M126.3	Bool	
"D_ELEV_UP"	%I125.2	Bool	
"MEM_D_DOWN_M"	%M126.5	Bool	
"D_ELEV_DOWN(1)"	%Q124.6	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"MEM_D_NOT_IN_POS"	%M124.2	Bool	

Network 3: Změření velikosti ložiska

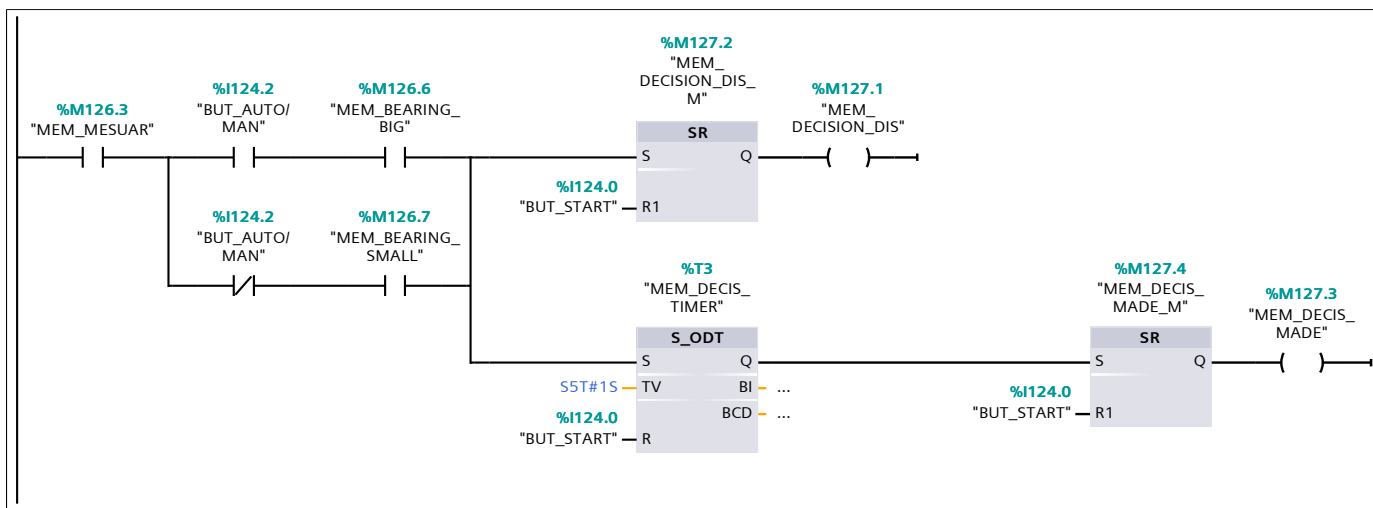


Symbol	Address	Type	Comment
"D_ELEV_UP"	%I125.2	Bool	
"BEARING_SIZE"	%IW288	Int	
"F_CENTER_UPW"	%Q125.0	Bool	

Symbol	Address	Type	Comment
"MEM_BEARING_BIG"	%M126.6	Bool	
10500	10500	Int	
10250	10250	Int	
"MEM_BEARING_SMALL"	%M126.7	Bool	
"BUT_START"	%I124.0	Bool	
S5T#1S	S5T#1S	S5Time	
"MEM_MESUAR_T1"	%T1	Timer	
"MEM_MESUAR_T2"	%T2	Timer	

Network 4: Kontrolní bod signalizující provedené měření ložiska

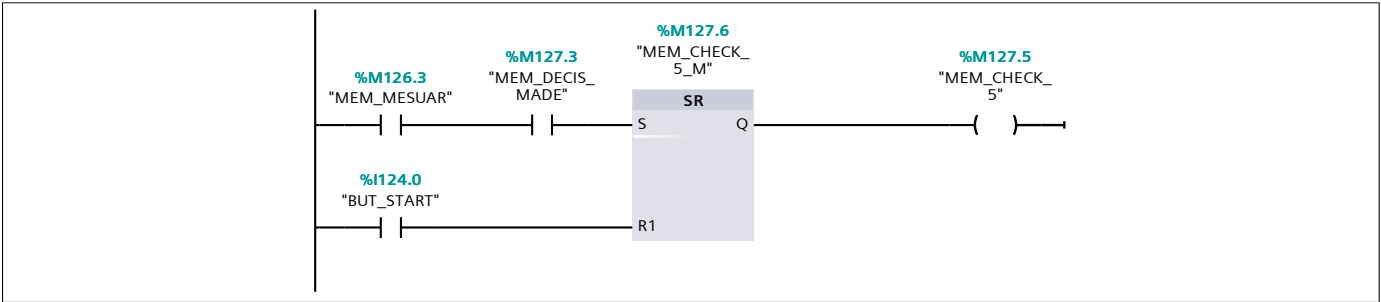
Symbol	Address	Type	Comment
"MEM_MESUAR"	%M126.3	Bool	
"MEM_BEARING_BIG"	%M126.6	Bool	
"MEM_BEARING_SMALL"	%M126.7	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_MESUAR_M"	%M127.0	Bool	

Network 5: Provede rozhodnutí zda dané ložisko vyhovuje (podle velikosti) nebo ne. To nám určuje poloha přepínače AUTO/MAN.

Symbol	Address	Type	Comment
"MEM_MESUAR"	%M126.3	Bool	

Symbol	Address	Type	Comment
"MEM_BEARING_BIG"	%M126.6	Bool	
"MEM_BEARING_SMALL"	%M126.7	Bool	
"BUT_START"	%I124.0	Bool	
S5T#1S	S5T#1S	S5Time	
"BUT_AUTO/MAN"	%I124.2	Bool	
"MEM_DECISION_DIS_M"	%M127.2	Bool	
"MEM_DECISION_DIS"	%M127.1	Bool	
"MEM_DECIS_MADE_M"	%M127.4	Bool	
"MEM_DECIS_MADE"	%M127.3	Bool	
"MEM_DECIS_TIMER"	%T3	Timer	

Network 6: Kontrolní bod V. signalizující provedení zmeření a následné zhodnocení ložiska



Symbol	Address	Type	Comment
"MEM_MESUAR"	%M126.3	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_DECIS_MADE"	%M127.3	Bool	
"MEM_CHECK_5_M"	%M127.6	Bool	
"MEM_CHECK_5"	%M127.5	Bool	

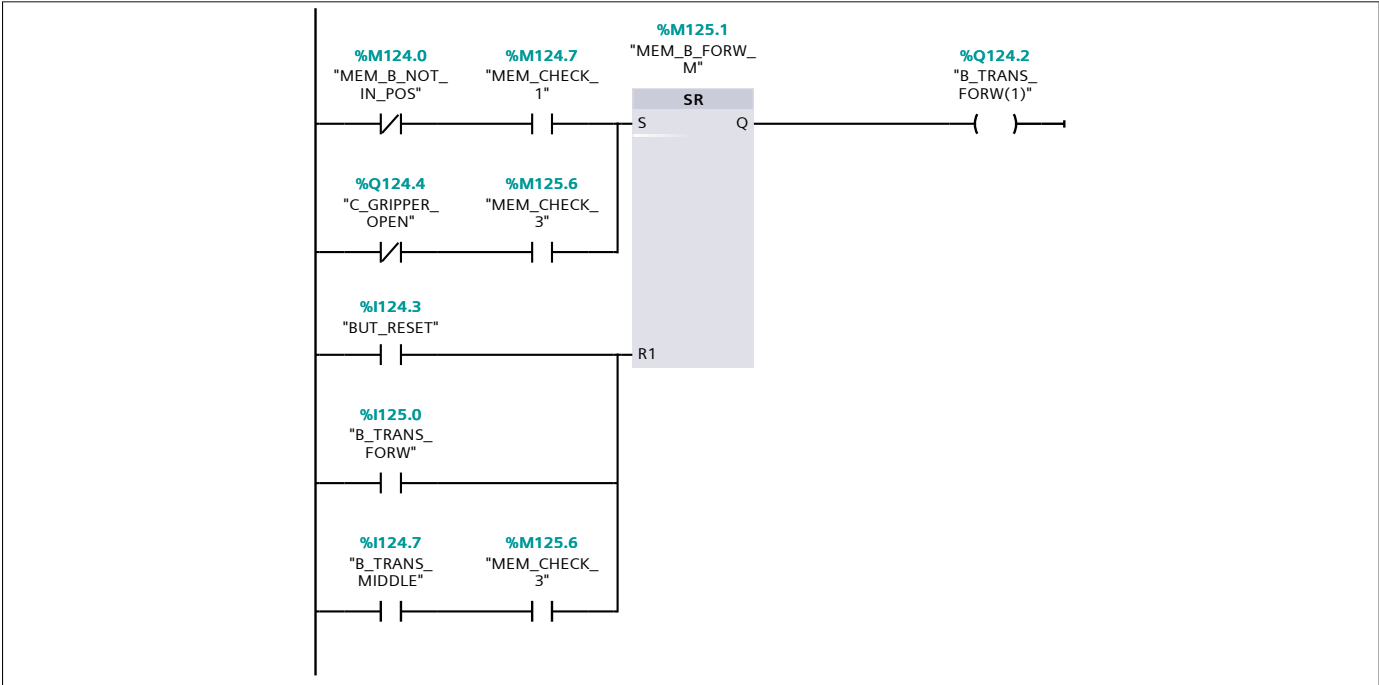
Program blocks

Transfer1 [FC3]

Transfer1 Properties					
General					
Name	Transfer1	Number	3	Type	FC
Language	LAD				
Information					
Title	Přenos ložiska na plošinu pro měření	Author	xmaly6	Comment	Tento blok zajišťuje přenos ložiska od podavače na měřící plošinu
Family		Version	0.1	User-defined ID	

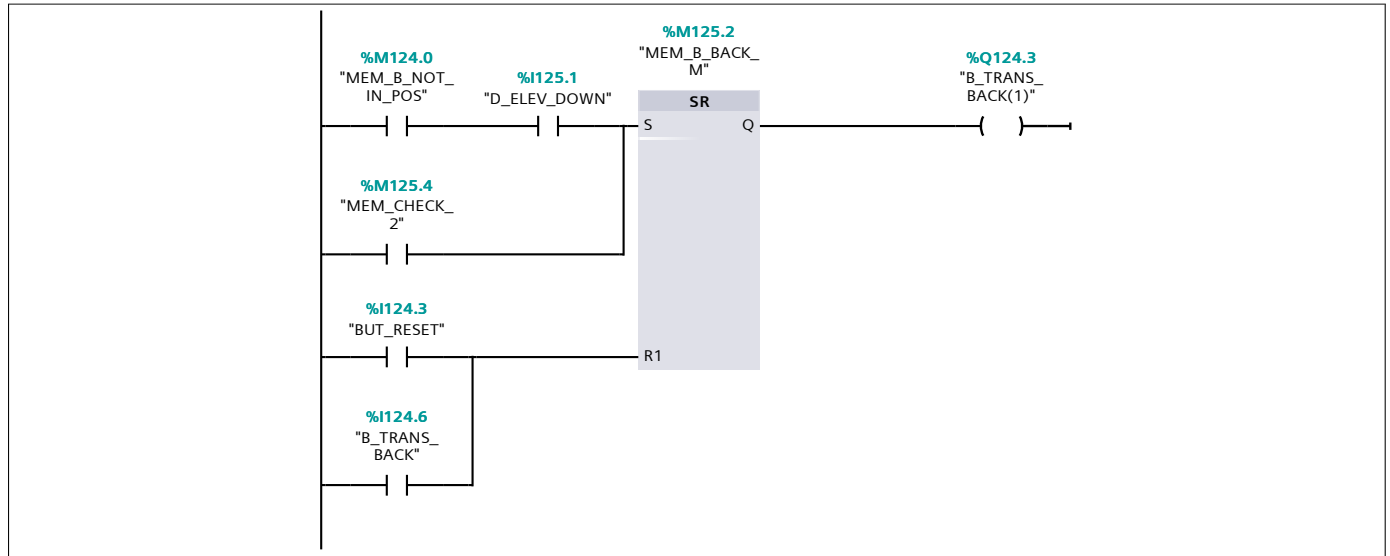
Name	Data type	Offset	Comment
Input			
Output			
InOut			
Temp			
▼ Return			
Ret_Val	Void		

Network 1: Ovládání pohybu podavače B dopředu

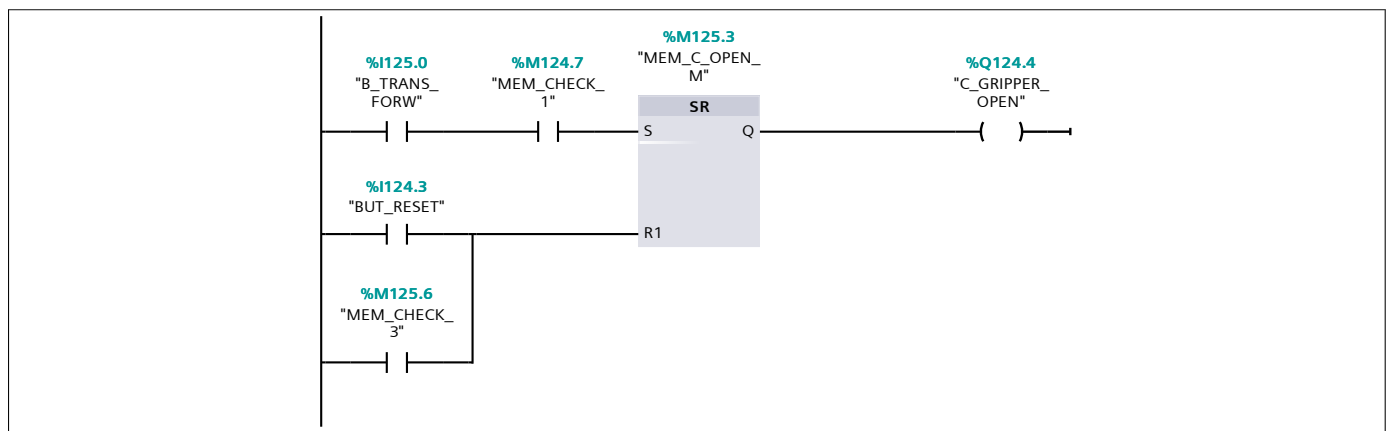


Symbol	Address	Type	Comment
"MEM_B_FORW_M"	%M125.1	Bool	
"BUT_RESET"	%I124.3	Bool	
"B_TRANS_FORW(1)"	%Q124.2	Bool	
"MEM_CHECK_1"	%M124.7	Bool	
"MEM_B_NOT_IN_POS"	%M124.0	Bool	
"B_TRANS_FORW"	%I125.0	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	

Symbol	Address	Type	Comment
"MEM_CHECK_3"	%M125.6	Bool	
"B_TRANS_MIDDLE"	%I124.7	Bool	

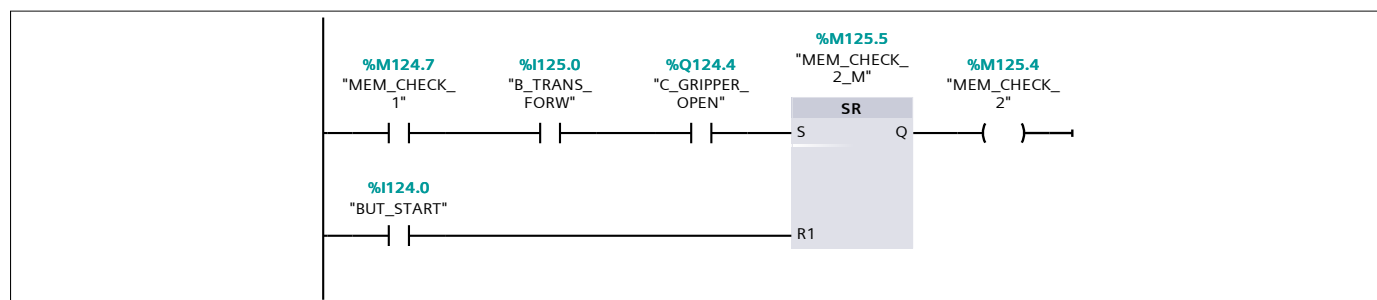
Network 2: Ovládání pohybu podavače B dozadu

Symbol	Address	Type	Comment
"BUT_RESET"	%I124.3	Bool	
"MEM_B_BACK_M"	%M125.2	Bool	
"B_TRANS_BACK(1)"	%Q124.3	Bool	
"MEM_B_NOT_IN_POS"	%M124.0	Bool	
"B_TRANS_BACK"	%I124.6	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"MEM_CHECK_2"	%M125.4	Bool	

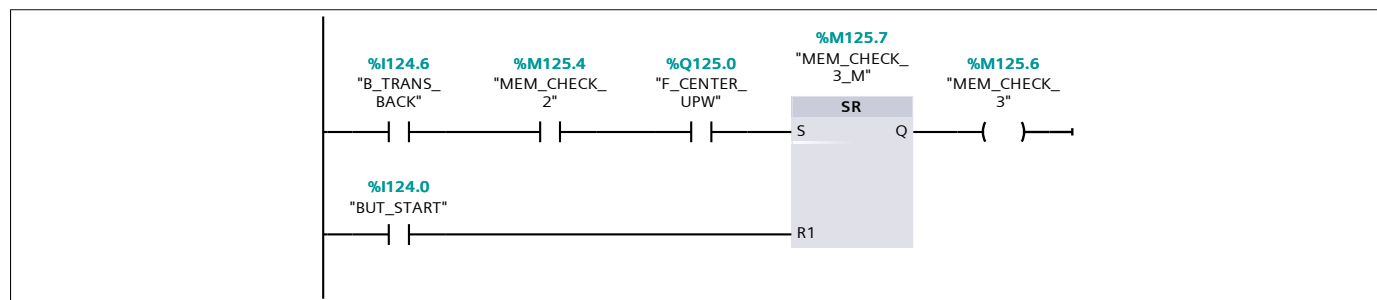
Network 3: Ovládání otevírání cvakadel C

Symbol	Address	Type	Comment
"BUT_RESET"	%I124.3	Bool	
"MEM_CHECK_1"	%M124.7	Bool	
"B_TRANS_FORW"	%I125.0	Bool	
"MEM_C_OPEN_M"	%M125.3	Bool	

Symbol	Address	Type	Comment
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"MEM_CHECK_3"	%M125.6	Bool	

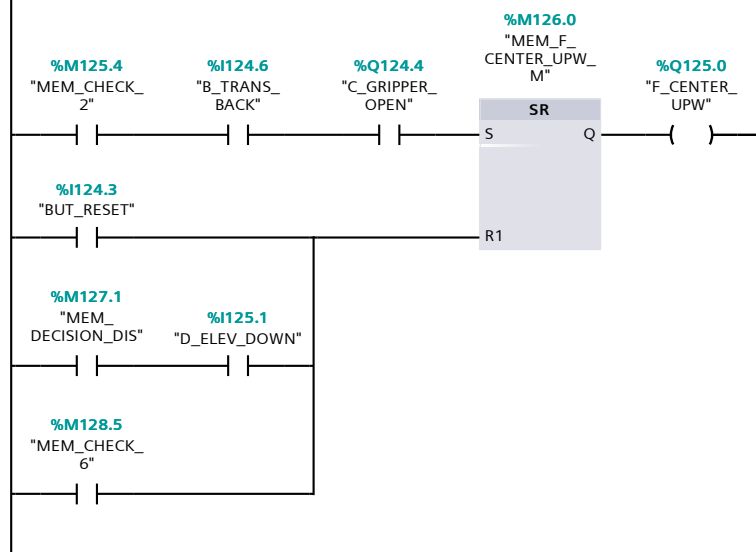
Network 4: Kontrolní bod II. signalizující uchycení podaného ložiska cvakadlem c

Symbol	Address	Type	Comment
"MEM_CHECK_1"	%M124.7	Bool	
"B_TRANS_FORW"	%I125.0	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_CHECK_2_M"	%M125.5	Bool	
"MEM_CHECK_2"	%M125.4	Bool	

Network 5: Kontrolní bod III. signalizující uchycení ložiska na plošině D

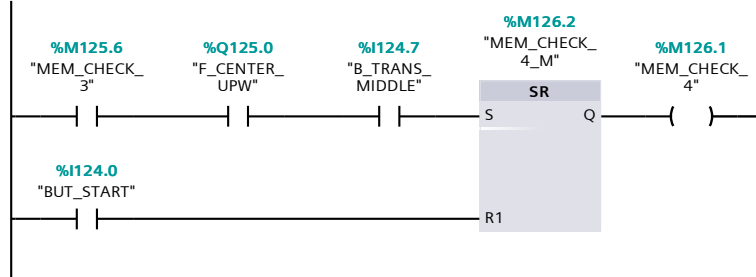
Symbol	Address	Type	Comment
"B_TRANS_BACK"	%I124.6	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_CHECK_2"	%M125.4	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"MEM_CHECK_3_M"	%M125.7	Bool	
"MEM_CHECK_3"	%M125.6	Bool	

Network 6: Ovládání tělesa F pro držení ložisek na plošině D



Symbol	Address	Type	Comment
"BUT_RESET"	%I124.3	Bool	
"B_TRANS_BACK"	%I124.6	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"MEM_CHECK_2"	%M125.4	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"MEM_F_CEN- TER_UPW_M"	%M126.0	Bool	
"MEM_DECISION_DIS"	%M127.1	Bool	
"MEM_CHECK_6"	%M128.5	Bool	

Network 7: Kontrolní bod IV. signalizující připravenost pro manipulaci plošiny D



Symbol	Address	Type	Comment
"BUT_START"	%I124.0	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"MEM_CHECK_3"	%M125.6	Bool	
"B_TRANS_MIDDLE"	%I124.7	Bool	
"MEM_CHECK_4_M"	%M126.2	Bool	
"MEM_CHECK_4"	%M126.1	Bool	

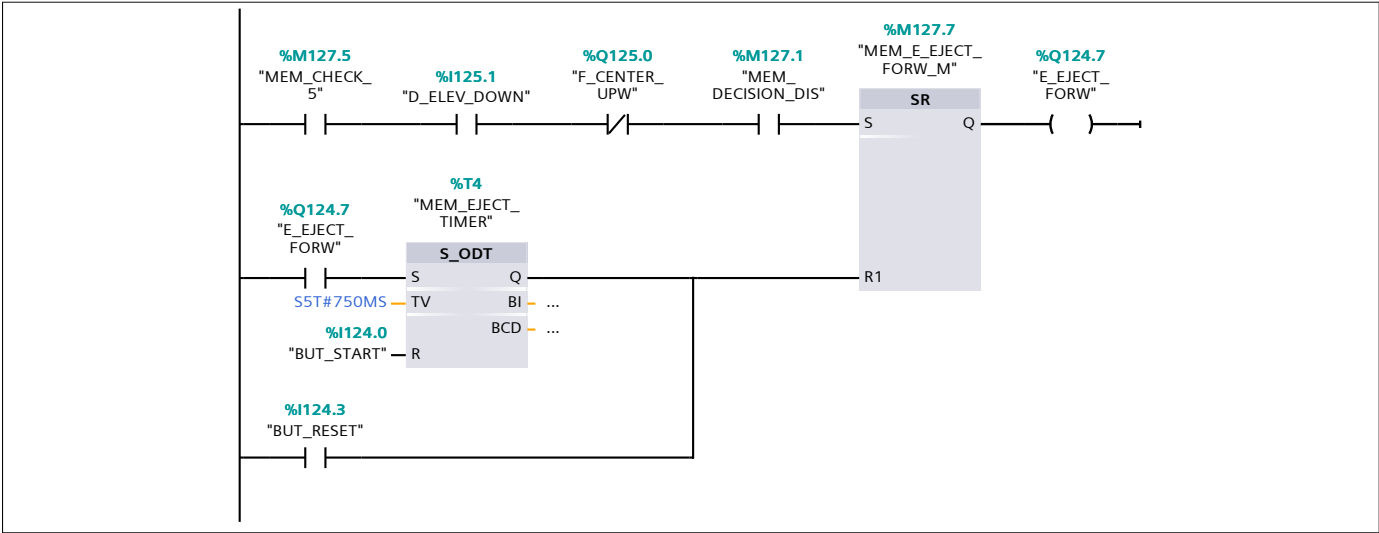
Program blocks

Transfer2 [FC5]

Transfer2 Properties					
General					
Name	Transfer2	Number	5	Type	FC
Language	LAD				
Information					
Title	Závěrečný přenos ložiska	Author	xmaly6	Comment	Tento funkční blok má za úkol buď ložisko vyloučit nebo zajistit jeho přenesení do připraveného tělesa.
Family		Version	0.1	User-defined ID	

Name	Data type	Offset	Comment
Input			
Output			
InOut			
Temp			
▼ Return			
Ret_Val	Void		

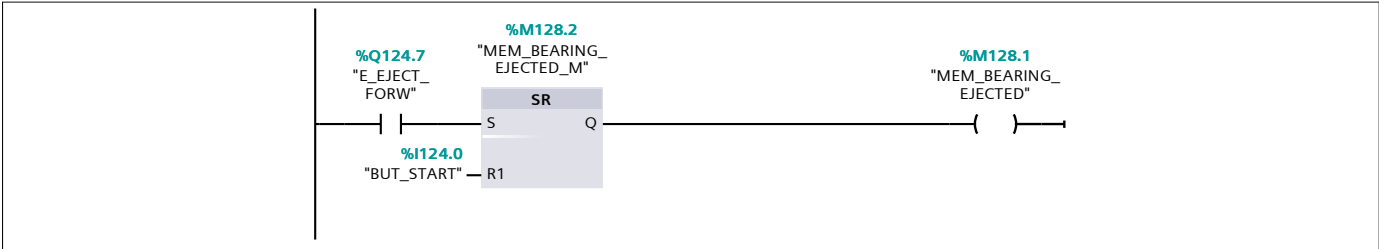
Network 1: Pokud je ložisko shledáno jako nevhodné dojde k jeho vyloučení z linky pomocí ejektoru E



Symbol	Address	Type	Comment
"MEM_CHECK_5"	%M127.5	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"MEM_E_EJECT_FORW_M"	%M127.7	Bool	
"E_EJECT_FORW"	%Q124.7	Bool	
"MEM_DECISION_DIS"	%M127.1	Bool	
"BUT_START"	%I124.0	Bool	
"BUT_RESET"	%I124.3	Bool	

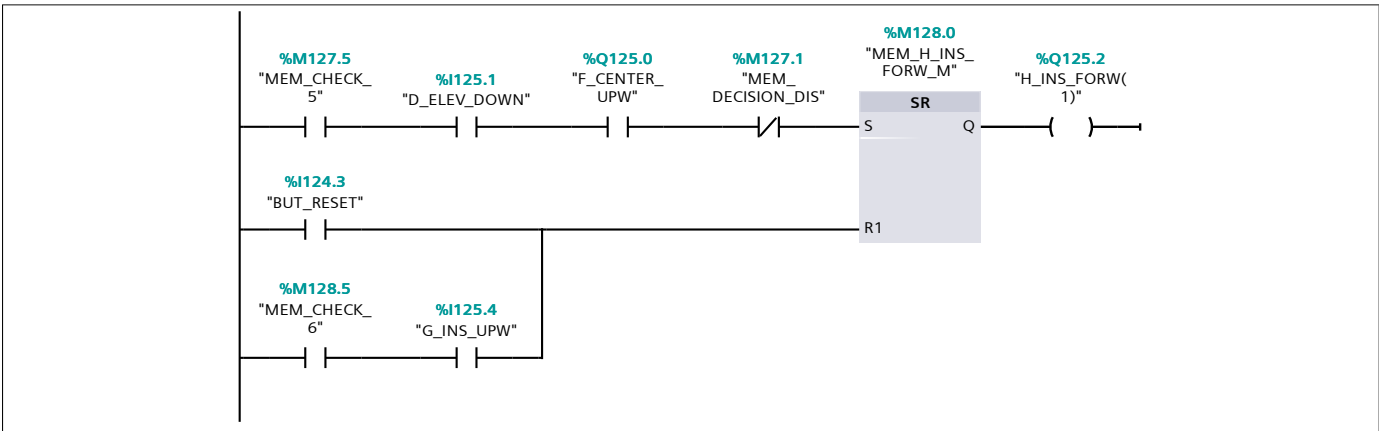
Symbol	Address	Type	Comment
S5T#750MS	S5T#750MS	S5Time	
"MEM_EJECT_TIMER"	%T4	Timer	

Network 2: Signalizace vyloučení ložiska



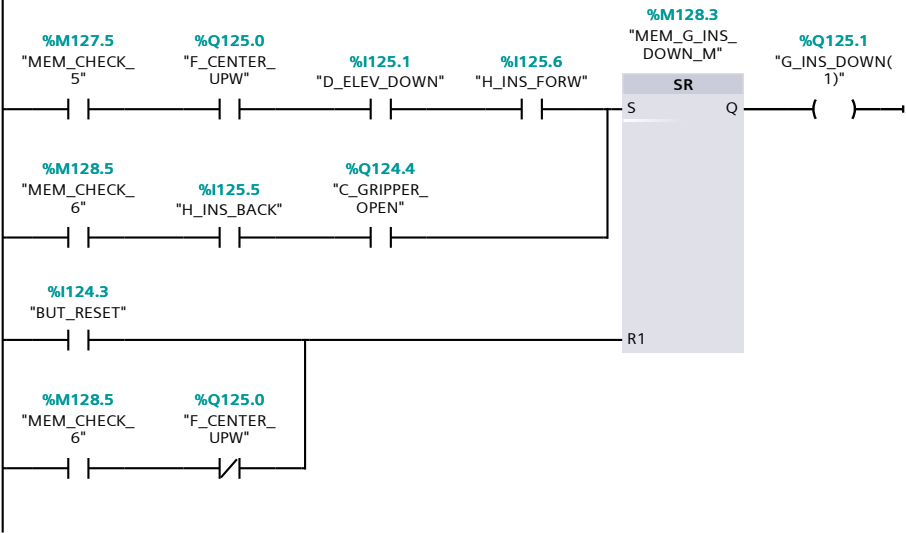
Symbol	Address	Type	Comment
"E_EJECT_FORW"	%Q124.7	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_BEARING_EJECTED_M"	%M128.2	Bool	
"MEM_BEARING_EJECTED"	%M128.1	Bool	

Network 3: Ovládání vkladáče H pro schválené ložisko



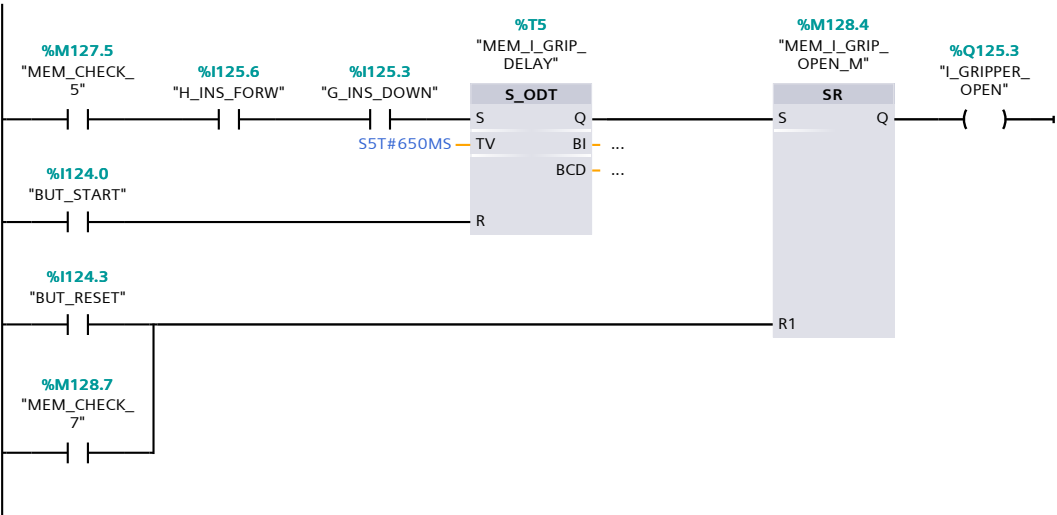
Symbol	Address	Type	Comment
"MEM_CHECK_5"	%M127.5	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"MEM_DECISION_DIS"	%M127.1	Bool	
"BUT_RESET"	%I124.3	Bool	
"MEM_H_INS_FORW_M"	%M128.0	Bool	
"H_INS_FORW(1)"	%Q125.2	Bool	
"MEM_CHECK_6"	%M128.5	Bool	
"G_INS_UPW"	%I125.4	Bool	

Network 4: Ovládání sjetí/vyjetí vkladáče G pro schálené ložisko



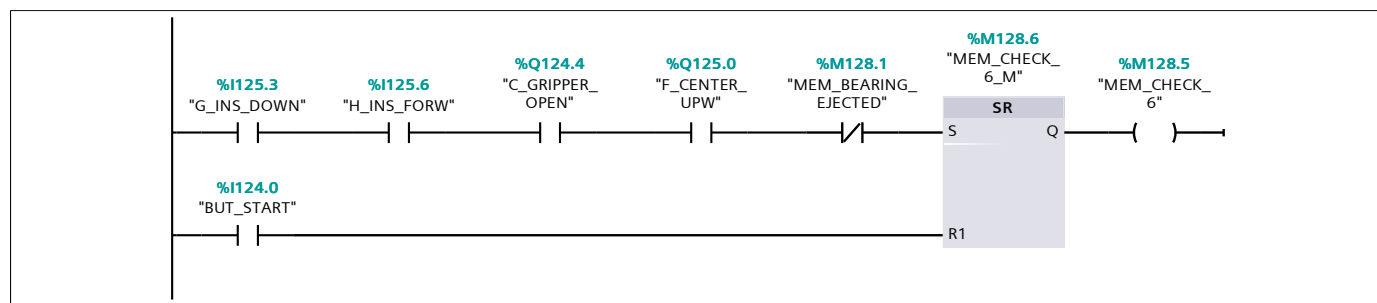
Symbol	Address	Type	Comment
"MEM_CHECK_5"	%M127.5	Bool	
"D_ELEV_DOWN"	%I125.1	Bool	
"F_CENTER_UPW"	%Q125.0	Bool	
"BUT_RESET"	%I124.3	Bool	
"H_INS_FORW"	%I125.6	Bool	
"MEM_G_INS_DOWN_M"	%M128.3	Bool	
"G_INS_DOWN(1)"	%Q125.1	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"MEM_CHECK_6"	%M128.5	Bool	
"H_INS_BACK"	%I125.5	Bool	

Network 5: Ovládání otevření cvakadel I pro uchycení ložiska

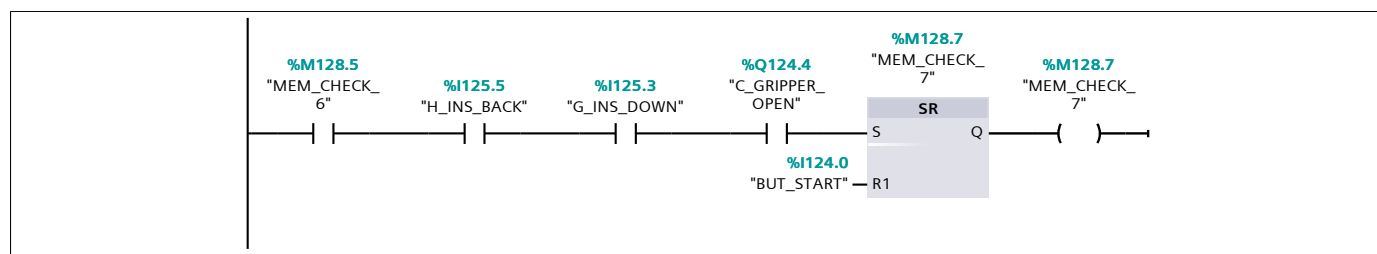


Symbol	Address	Type	Comment
"MEM_CHECK_5"	%M127.5	Bool	
"BUT_START"	%I124.0	Bool	
"BUT_RESET"	%I124.3	Bool	
"H_INS_FORW"	%I125.6	Bool	
"MEM_I_GRIP_DELAY"	%T5	Timer	

Symbol	Address	Type	Comment
S5T#650MS	S5T#650MS	S5Time	
"I_GRIPPER_OPEN"	%Q125.3	Bool	
"MEM_I_GRIP_OPEN_M"	%M128.4	Bool	
"G_INS_DOWN"	%I125.3	Bool	
"MEM_CHECK_7"	%M128.7	Bool	

Network 6: Kontrolní bod VI. signalizující uchycení ložiska přenašečem H

Symbol	Address	Type	Comment
"F_CENTER_UPW"	%Q125.0	Bool	
"BUT_START"	%I124.0	Bool	
"MEM_BEARING_EJECTED"	%M128.1	Bool	
"H_INS_FORW"	%I125.6	Bool	
"G_INS_DOWN"	%I125.3	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"MEM_CHECK_6_M"	%M128.6	Bool	
"MEM_CHECK_6"	%M128.5	Bool	

Network 7: Kontrolní bod VII. signalizující ložisko se nachází nad tělesem a je připraveno pro vložení

Symbol	Address	Type	Comment
"BUT_START"	%I124.0	Bool	
"G_INS_DOWN"	%I125.3	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"MEM_CHECK_6"	%M128.5	Bool	
"H_INS_BACK"	%I125.5	Bool	
"MEM_CHECK_7"	%M128.7	Bool	

Network 8: Signalizace vložení ložiska do tělesa a ukončení celého procesu

Totally Integrated Automation Portal

%M128.7
"MEM_CHECK_7"

%I125.4
"G_INS_UPW"

%Q124.4
"C_GRIPPER_OPEN"

%M129.2
"MEM_BEARING_INSERTED_M"

SR

%M129.1
"MEM_BEARING_INSERTED"

%I124.0
"BUT_START"

R1

S

Q

Symbol	Address	Type	Comment
"BUT_START"	%I124.0	Bool	
"C_GRIPPER_OPEN"	%Q124.4	Bool	
"G_INS_UPW"	%I125.4	Bool	
"MEM_CHECK_7"	%M128.7	Bool	
"MEM_BEARING_INSERTED_M"	%M129.2	Bool	
"MEM_BEARING_INSERTED"	%M129.1	Bool	