Programovatelné automaty Ústav automatizace a měřící techniky FEKT VUT v Brně			J _{méno} Hodák Dominik		ID 220983
			Ročník	Obor	Skupina
			3.	AMT	3.
Spolupracoval	racoval Vytvořeno dne Odevzdáno o		lne	Hodnocen	í
Vaněk Pavel	1.4.2022	25 .4. 2022			
Název úlohy Kuličky					Č. úlohy 7

Zadání

- 1. Nakreslete svoji představu, jak model dávkovače kuliček vypadá.
- Napište program pro dávkování kuliček vjazyce LAD, FBD, ST nebo v kombinacích. Využijte tvorby Subroutine, Add-On nebo kombinací. Použijte předefinovaný projekt Kulicky_BPC_PGA.ACD.
- 3. Vytvořte SCADA systém pomocí FT View ME

Popis procesu

Program po spuštění odpočítá z jednotlivých válců kuličky, přičemž počet odpočítaných kuliček z jednotlivých válců odpovídá hodnotě nastavené na číslicovém voliči. Dávkování probíhá paralelně. Dávkování je možné spustit pouze, pokud je v zásobnících dostatek kuliček a krabice je na svém místě pod válci. Plný stav kuliček je indikován snímačem v horní části každého válce. Tuto skutečnost využijte pro odlišení stavů READY (1.start) a START.

Systém se uvede do chodu prvním stisknutím tlačítka START. V tomto stavu (READY) jsou aktivovány spodní západky ve válcích a je možné naplnit válce. Po splnění podmínek naplnění a přítomnosti krabice, svítí zelené světlo a je možné spustit dávkování kuliček opětovným stiskem tlačítka START. Je nutné číslo v BCD kódu převést na binární číslo. Program lze zastavit v libovolném okamžiku tlačítkem STOP, kdy dojde k rozsvícení červeného světla – stav STOP. Dalším stisknutím tlačítka STOP se uvolní západky a zbylé kuličky se vysypou do odpadní krabice.

Pro zamezení přehřátí západek je model vybaven ventilátory, které je možné programově zapínat/vypínat. Při běhu programu budou ventilátory vždy sepnuty a budete ověřovat běh ventilátoru pomocí zpětného hlášení (simulovaný čas sepnutí je 5 s) z příslušného stykače. V případě poruchy se program zastaví (stav STOP).

Hodnotu číslicového voliče lze nastavovat v rozsahu 0 až 9. Tedy budete voliče simulovat v příslušných proměnných v Controller Tags. Aplikace signalizuje, že zadaná hodnota je mimo rozsah (AlarmL0 a AlarmH9). V tomto případě nemůžete program spustit tlačítkem START (ve stavu READY ani START). Popis modelu

Popis modelu

Model obsahuje tři válce s kuličkami, přičemž každý z nich je vybaven dvojicí západek sloužících k odpočítávání kuliček a snímačem přítomnosti kuliček v horní části válce. Ke každému válci je jeden otočný číslicový spínač (každá cifra má rozsah 0 až 9) sloužící k nastavení požadovaného počtu kuliček. Každý číslicový volič má na svém výstupu čtyři vodiče neboli čtyři bitové hodnoty, které dohromady tvoří číslo v BCD kódu. Výstupy z voliče jsou převedeny na binární signály, viz popis signálů. Pod válci se nachází krabice na kuličky, její detekce se provádí pomocí mikrospínače.

Popis aliasů

Seznam vstupních / výstupních signálů

DOD I O	F.	DCD 1 / /1 (00) #		
BCD_L_0	DI	BCD levý válec (2º) *		
BCD_L_1	DI	BCD levý válec (2¹) *		
BCD_L_2	DI	BCD levý válec (2 ²) *		
BCD_L_3	DI	BCD levý válec (2 ³) *		
BCD_M_0	DI	BCD střední válec (2º) *		
BCD_M_1	DI	BCD střední válec (2¹) *		
BCD_M_2	DI	BCD střední válec (2 ²) *		
BCD_M_3	DI	BCD střední válec (2 ³) *		
BCD_R_0	DI	BCD pravý válec (2º) *		
BCD_R_1	DI	BCD pravý válec (2¹) *		
BCD_R_2	DI	BCD pravý válec (2 ²) *		
BCD_R_3	DI	BCD pravý válec (2 ³) *		
S1	DI	Čidlo naplnění kuliček v levém válci		
S2	DI	Čidlo naplnění kuliček v středním válci		
S3	DI	Čidlo naplnění kuliček v pravém válci		
S4	DI	Čidlo přítomnosti krabice		
ZH1	DI	Zpětné hlášení od ventilátoru západek v levém válci		
ZH2	DI	Zpětné hlášení od ventilátoru západek v středním válci		
ZH3	DI	Zpětné hlášení od ventilátoru západek v pravém válci		
STOP	DI	Červené tlačítko STOP		
START	DI	Zelené tlačítko START		
No_Balls1	Číslo	Počet kuliček, kolik se má odpočítav v levém válci **		
No_Balls2	Číslo	Počet kuliček, kolik se má odpočítav v středním válci **		
No_Balls3	číslo	Počet kuliček, kolik se má odpočítav v pravém válci **		
AlarmLX	DI	Signalizace, že No_BallsX jsou menší než 0 *		
AlarmHX	DI	Signalizace, že No_BallsX jsou větší než 9 *		
C LED	DO	Červená LED		
Z LED	DO	Zelená LED		
M1U	DO	Zarážka levá horní		
M1D	DO	Zarážka levá dolní		
M2U	DO	Zarážka střední horní		
M2D	DO	Zarážka střední dolní		
M3U	DO	Zarážka pravá horní		
M3D	DO	Zarážka pravá dolní		
Ve1	DO	Spouštění ventilátoru pro levé západky		
Ve2	DO	Spouštění ventilátoru pro střední západky		
Ve3	DO	Spouštění ventilátoru pro pravé západky		
	* Cignély vy igou define vény v Controller toga			

Parametry

TOC	Doba mezi střídáním otevření a zavření horních a dolních západek (asi 1
	sekunda)
TZH	Doba simulace signálu ZH od stykačů ventilátorů (asi 5 s)
ValecX	Binární hodnota počtu kuliček v X-tém válci – NEPOUŽÍVAT !!!

^{*} Signály už jsou definovány v Controller tags.
** Proměnné už jsou definovány v Controller tags. Hodnoty simulujete v Controller Tags v rozsahu 0 až 9.

HW konfigurace

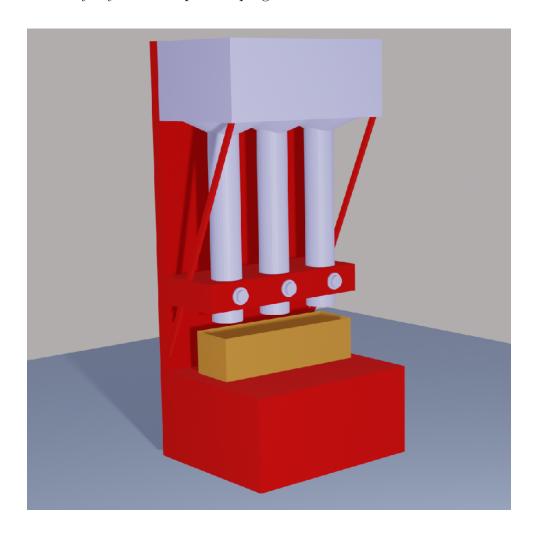
Pro HW realizaci byl použit PLC L33ERM CompactLogix 5370 firmy Rockwell Automation/Allen-Bradley. Konfigurace modulů jest uvedena v tabulce. Projekt byl odladěn pomocí nástorje Studio 5000 Logix Emulate.

Slot	Model	Popis
2	L73	Controller
3	OB16D	Digital output
4	IB16	Digital input

Popis řešení

Nákres modelu

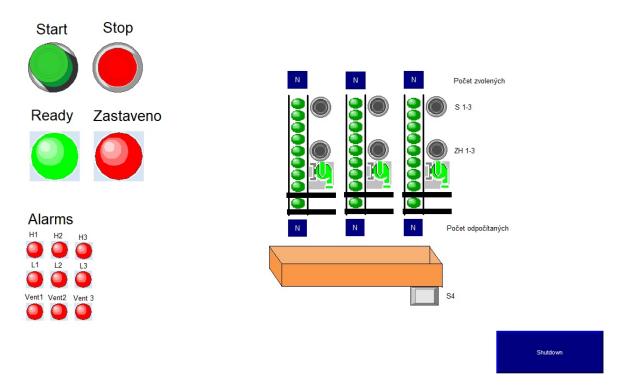
Nákres modelu byl vytvořen za pomoci programu Blender.



Vizualizace SCADA

Vizualizace obsahuje dávkovač a ovládací panel. Na ovládavcím panelu jsou tlačítka Start, Stop spolu s červenou a zelenou led. Ovladácí panel obsahuje kontrolky pro

všechny alarmy. Otočné číslicové snímače ovládací panel neobsahuje z důvodu interpretace zadání. Volba požadovaného počtu kuliček probíhá přímím nastavovaním logické hodnoty na vstupy PLC pomocí Studio 5000 Logix Emulate. Kuličky v dávkovači jsou pouze pro představu. Pro jejich pohyb by bylo potřeba úpravy kódu kterou by reálné zařízení nevyužilo. Každý válec má dva číslicové indikátory, horní pro zvolený počet kuliček, druhý ukazuje aktuální počet nadávkovaných kuliček. Dále má každý válec dvě tlačítka - pro horní snímač a zpětné hlášení pro ventilátor.



Add_on bcd_-to_-dec (FBD)

Přímo přepisuje bity jednotlivé bity BCD kódu do DINT. Jsou zde aplikovány alarmy indikující přetečení hodnoty z požadovaného rozmezí. V tomto projektu prakticky nemůže nastat alarm.l.

$Add_on \ ventilator \ (FBD)$

Kontroluje spravnou funkci ZH od stykače ventilátoru. Pokud stykač do doby **TZH** po zapnutí/vypnutí nesepne/nerozepne, funkce setuje **fault** flag. Chybový flag můžeme resetovat setováním **clr_fault**.

$Add_on \ cilinder_control \ (ST)$

Obsahuje kompletní řízení západek válce - odpočítá potřebný počet kuliček. Vstupy $cilinder_control$:

- senzor připojení senzoru snímače na vrchu válce
- num_balls DINT potřebného počtu kuliček, který se má odpočítat
- start spuštění stroje fáze plnění válců

- stop vypnutí stroje čekání na vyprazdnění válců
- activate spuštění cyklu dávkování míčků
- dose_period délka trvnání dávkování jednoho míčku

Výstupy: cilinder_control:

- zapadka_h horní západka
- zapadka_l dolní západka
- ball_cntr počet odpočítaných míčků
- ready připraveno pro cyklus dávkování (zakrytý snímač)
- run probíhající dávkování
- complete odpočítány všechny míčky
- state informační proměná stavu FSM

Parametr **dose_period** určuje periodu dávkování (jedné kuličky).

$Add_on first - scan(ST)$

Pomocná funkce add_on použitá pro inicializaci.

Main rutine (FBD)

Schéma je rozdělené na tři listy. Na prvním se věnuji kompletnímu řízení válců a spouštění fází plnění a dávkování. Druhý list se věnuje převodu BDC na dec. a ošetření alarmů. Třetí list se věnuje správné funkci ventilátorů.

Ventilátory se uvádějí do chodu pokud probíhá dávkovací cyklus. Pokud stoj stojí nebo čeká na plnění, jsou ventilátory vypnuty.

Pro nastavení počtu kuliček se předpokládá použití HW BCD voličů. Proto se provádí přiřazení hodnot přímo HW vstupů PLC.

Indikace

Podle zadání je indikován zelenou LED stav splnění všech podmínek pro splění dávkování (sepnutý **S4** a naplněny všechny válce). Pokud dojde k zastavení stroje rozsvítí se červená LED na znamení, že stroj vyčkává na opětovné stisknutí **STOP**, čímž dojde vyčištění válců do odpadní krabice. Tento stav uživatel může také opustit opětovným stiskem START, čímž započne znovu fáze naplnění válců.

Poruchy

Jediná detekovatelná porucha může být způsobená **ZH** od stykačů ventilátoru. Při chybě se setuje **fault** flag a stroj zastaví dávkování a přejde do stavu, kdy čeká na vyčištění válců. Chyba může být resetována stisknutím **STOP** talčítka.

Alarmy BCD

Pokud je detekován alarm špatné hodnoty BCD, stroj nelze spustit.

Závěr

Pro vytvoření projektu byl použit předefinovaný projekt. Jména controller tags se shodují s tabulkou zadanými. Projekt se podařilo splnit v daném rozsahu. Report projektu je přiložen na konci protokolu. Celý projekt včetně dokumentace je zpřístupněn na githabu: https://github.com/Bobik77/PGA_project

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101 AB:1756_MODULE_DINT_8Bytes:I:0	
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C:\Users\bpc_pga\Documents\Studio 5000\Projects\Kulicky_BPC_PGA.ACD

Name	Value	Data Type	Scope
AlarmH	0	BOOL	Simulace
AliasFor:	Alarmy SIM.1	BOOL	Simulace
Base Tag:	Alarmy SIM.1		
Constant	No		
External Access:	Read/Write		
	$nown\ Protection (Unknown\ Protection),\ *$	Unknown Protection(Unknown Protectio	n)
AlarmH1	0	BOOL	Kulicky_BPC_PGA
Signalizace, že No Balls1 je větší r			7
AliasFor:	Alarms.1		
Base Tag:	Alarms.1		
Constant	No		
External Access:	Read/Write		
	- *2-C2(OREF,AlarmH1),	dec,bcd_to_dec_01.alarm_H), 2-B3(BOR	$BOR_04.In4),$
2-B4(IREF,AlarmH1) AlarmH1 - Simulace/Simulace - *1)	Inknown Protection(Unknown Protection)	
AlarmH2	0	BOOL	Kulicky_BPC_PGA
Signalizace, že No_Balls2 je větší r			
AliasFor:	Alarms.3		
Base Tag:	Alarms.3		
Constant External Access:	No Read/Write		
	· *2-E2(OREF,AlarmH2), 2-B3(BOR,BO	R = 0.4 In 5 + 2 RA(IREE Alarm H2)	
2-D2(bcd to dec,bcd to dec 02.0		K_04.1n3), 2-B4(IKEF,Atarm112),	
	nknown Protection(Unknown Protection))	
AlarmH3	0	BOOL	Kulicky BPC PGA
Signalizace, že No Balls3 je větší r		BOOL	Runcky_B1 C_1 G/1
AliasFor:	Alarms.5		
Base Tag:	Alarms.5		
Constant	No		
External Access:	Read/Write		
	· *2-G2(OREF,AlarmH3), 2-B3(BOR,BO	$PR_04.In6$), 2-B4(IREF,AlarmH3),	
2-F2(bcd_to_dec,bcd_to_dec_03.a			
AlarmH3 - Simulace/Simulace - *U	Inknown Protection(Unknown Protection)	
AlarmL	0	BOOL	Simulace
AliasFor:	Alarmy_SIM.0		
Base Tag:	Alarmy_SIM.0		
Constant	No B. 1777		
External Access:	Read/Write	Habra cause Ducato eti cu (Habra cause Ducato eti ca	-1
Atarme - Simulace/Alarmy - *Onkh	own Froiection(Onknown Froiection),	Unknown Protection(Unknown Protection	1)
🖥 AlarmL1	0	BOOL	Kulicky_BPC_PGA
Signalizace, že No_Balls1 je menší	než 0		
AliasFor:	Alarms.0		
Base Tag:	Alarms.0		
Constant	No		
External Access:	Read/Write *2 C2(ORFE Alarma L1) 2 R2(had to d	as had to doe OI alarm I) 2 B2/BOD	200 04 L-1)
	**2-C2(OREF,AlarmL1), 2-B2(bca_to_al	ec,bcd_to_dec_01.alarm_L), 2-B3(BOR,1	3OK_04.1N1),
2-B4(IREF,AlarmL1)	nknown Protection(Unknown Protection))	
	nknown i rotection(Onknown i rotection)	,	
AlarmL2	0	BOOL	Kulicky_BPC_PGA
Signalizace, že No_Balls2 je menší			
AliasFor:	Alarms.2		
Base Tag:	Alarms.2		
Constant External Access:	No Read/Write		
	*2-E2(OREF,AlarmL2), 2-B3(BOR,BOF	$R = 0.4 \ln 2$) $2 - RA/(RFE Algum I 2)$	
2-D2(bcd to dec,bcd to dec 02.0		(_07.1112), 2-D7(INDF,A101111102),	
	nknown Protection(Unknown Protection)		

Kulicky BPC PGA

Kulicky_BPC_PGA (Controller)

C:\Users\bpc pga\Documents\Studio 5000\Projects\Kulicky BPC PGA.ACD

BOOL

Signalizace, že No_Balls3 je menší než 0 AliasFor: Alarms.4 Base Tag: Alarms.4 Constant No Read/Write External Access:

AlarmL3 - main FBD/main FBD - *2-G2(OREF,AlarmL3), 2-B3(BOR,BOR 04.In3), 2-B4(IREF,AlarmL3),

2-F2(bcd to dec,bcd to dec 03.alarm L)

AlarmL3 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

Alarms DINT Kulicky BPC PGA

Alarmy BCD

AlarmL3

Constant No

Read/Write External Access:

BOOL Alarms.0

Alarmy BCD

AlarmL1 - main FBD/main FBD - *2-C2(OREF,AlarmL1), 2-B2(bcd to dec,bcd to dec 01.alarm L), 2-B3(BOR,BOR 04.In1),

2-B4(IREF,AlarmL1)

AlarmL1 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

Alarms.1 **BOOL** 0

Alarmy BCD

AlarmH1 - main FBD/main FBD - *2-C2(OREF,AlarmH1), 2-B2(bcd to dec,bcd to dec 01.alarm H), 2-B3(BOR,BOR 04.In4),

2-B4(IREF,AlarmH1)

AlarmH1 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

Alarms.2 **BOOL**

Alarmy BCD

AlarmL2 - main FBD/main FBD - *2-E2(OREF,AlarmL2), 2-B3(BOR,BOR 04.In2), 2-B4(IREF,AlarmL2),

2-D2(bcd to dec,bcd to dec 02.alarm L)

AlarmL2 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

BOOL Alarms.3

Alarmy BCD

AlarmH2 - main FBD/main FBD - *2-E2(OREF, AlarmH2), 2-B3(BOR, BOR 04.In5), 2-B4(IREF, AlarmH2),

2-D2(bcd to dec,bcd to dec 02.alarm H)

AlarmH2 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

Alarms.4 **BOOL**

Alarmy BCD

AlarmL3 - main FBD/main FBD - *2-G2(OREF, AlarmL3), 2-B3(BOR, BOR, 04.In3), 2-B4(IREF, AlarmL3),

2-F2(bcd to dec,bcd to dec 03.alarm L)

AlarmL3 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

BOOL Alarms.5

Alarmy BCD

AlarmH3 - main FBD/main FBD - *2-G2(OREF,AlarmH3), 2-B3(BOR,BOR 04.In6), 2-B4(IREF,AlarmH3),

2-F2(bcd to dec,bcd to dec 03.alarm H)

AlarmH3 - Simulace/Simulace - *Unknown Protection(Unknown Protection)

Alarmy SIM DINT Simulace

Constant No

Read/Write External Access:

BOOL. Alarmy SIM.0

AlarmL - Simulace/Alarmy - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection)

Alarmy SIM.1 BOOL.

AlarmH - Simulace/Alarmy - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection)

ALM 01 ALARM Simulace

Constant No

Read/Write External Access:

ALM 01 - Simulace/Alarmy - *Unknown Protection(Unknown Protection), *Unknown Protection), *Unknown Protection(Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection(Unknown Protection(Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Prot

Protection(Unknown Protection)

BAND 01 FBD BOOLEAN AND main FBD

Constant No

External Access: Read/Write

BAND 01 (Continued)

BAND_01 - main_FBD/main_FBD - *1-B5(OREF,Z_LED), *1-E2(cilinder_control,cilinder_control_01.ready),

*1-E3(cilinder_control_cilinder_control_02.ready), *1-E5(cilinder_control_cilinder_control_03.ready), *1-G2(BAND,BAND_01),

*1-G3(IREF,S4), *1-H2(BAND,BAND 03.In1)

BAND 02 FBD BOOLEAN AND main FBD

Constant No

External Access: Read/Write

BAND 02 - main FBD/main FBD - *1-A1(OSRI,OSRI 01.OutputBit), *1-B1(BNOT,BNOT 01.Out), *1-C1(BAND,BAND 02),

*1-E2(cilinder control, cilinder control 01.start), *1-E3(cilinder control, cilinder control 02.start),

*1-E5(cilinder control,cilinder control 03.start), *1-H2(BAND,BAND 03.In2)

BAND 03 FBD BOOLEAN AND main FBD

Constant No

External Access: Read/Write

BAND 03 - main FBD/main FBD - *1-C1(BAND,BAND 02.Out), *1-E2(cilinder control,cilinder control 01.activate),

 $*1-E3 (cilinder_control_cilinder_control_02.activate), *1-E5 (cilinder_control_cilinder_control_03.activate), *1-G2 (BAND_BAND_01.Out), *1-E3 (cilinder_control_cilinder_cilinder_control_cilinder_control_cilinder_cilinder_cilinder_cilinder_cilinder_cilinder_ci$

*1-H2(BAND, BAND 03)

BCD 0 DINT Simulace

Constant No

External Access: Read/Write

BCD - Simulace/BCD - *Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection)

BCD_L_0 0 BOOL Kulicky_BPC_PGA

BCD levý válec

AliasFor: BCDX.0
Base Tag: BCDX.0
Constant No

External Access: Read/Write

BCD L 0 - main FBD/main FBD - *2-B1(OREF,BCD L 0), 2-B1(IREF,IN BCD L0), 2-B2(bcd to dec,bcd to dec 01.BCD0),

2-B2(IREF,BCD L 0)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD L 1 0 BOOL Kulicky BPC PGA

BCD levý válec

AliasFor: BCDX.1
Base Tag: BCDX.1
Constant No
External Access: Read/Write

BCD_L_1 - main_FBD/main_FBD - *2-B1(OREF,BCD_L_1), 2-B1(IREF,IN_BCD_L1), 2-B2(bcd_to_dec,bcd_to_dec_01.BCD1),

 $2-B\overline{2}(I\overline{R}EF,BCD^{T}L^{-1})$

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

■ BCD L 2 0 BOOL Kulicky_BPC_PGA

BCD levý válec

AliasFor: BCDX.2
Base Tag: BCDX.2
Constant No
External Access: Read/Write

BCD L 2 - main FBD/main FBD - *2-B1(OREF,BCD L 2), 2-B1(IREF,IN BCD L2), 2-B2(bcd to dec,bcd to dec 01.BCD2),

2-B2(IREF,BCDL2)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD_L_3 1 BOOL Kulicky_BPC_PGA

BCD levý válec

AliasFor: BCDX.3
Base Tag: BCDX.3
Constant No
External Access: Read/Write

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BCD L 3 (Continued)

BCD L 3 - main FBD/main FBD - *2-B1(OREF,BCD L 3), 2-B1(IREF,IN BCD L3), 2-B2(bcd to dec,bcd to dec 01.BCD3),

2-B2(IREF,BCD L 3)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection)

BCD M 0 **BOOL** Kulicky BPC PGA

BCD střední válec

BCDX.4 AliasFor: Base Tag: BCDX.4 Constant No External Access: Read/Write

BCD M 0 - main FBD/main FBD - *2-D1(OREF,BCD M 0), 2-D1(IREF,IN BCD M0), 2-D2(bcd to dec,bcd to dec 02.BCD0),

2-D2(IREF,BCD M 0)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

■ BCD M 1 0 BOOL Kulicky BPC PGA

BCD střední válec

AliasFor: BCDX.5 Base Tag: BCDX.5 Constant External Access: Read/Write

BCD M 1 - main FBD/main FBD - *2-D1(OREF,BCD M 1), 2-D1(IREF,IN BCD M1), 2-D2(bcd to dec,bcd to dec 02.BCD1),

2-D2(IREF,BCD M 1)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD M 2 1 BOOL. Kulicky BPC PGA

BCD střední válec

BCDX.6 AliasFor: BCDX.6 Base Tag: Constant External Access: Read/Write

BCD M 2 - main FBD/main FBD - *2-D1(OREF,BCD M 2), 2-D1(IREF,IN BCD M2), 2-D2(bcd to dec,bcd to dec 02.BCD2),

2-D2(IREF,BCD M 2)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD M 3 ■ 0 BOOL Kulicky BPC PGA

BCD střední válec

BCDX.7 AliasFor: Base Tag: BCDX.7 Constant No Read/Write External Access:

BCD M 3 - main FBD/main FBD - *2-D1(OREF,BCD M 3), 2-D1(IREF,IN BCD M3), 2-D2(bcd to dec,bcd to dec

2-D2(IREF,BCD M 3)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD R 0 0 BOOL Kulicky BPC PGA

BCD pravý válec

AliasFor: BCDX.8 Base Tag: BCDX.8 Constant No Read/Write External Access:

BCD R 0 - main FBD/main FBD - *2-G1(OREF,BCD R 0), 2-F1(IREF,IN BCD R0), 2-F2(bcd to dec,bcd to dec 03.BCD0),

2-F2(IREF,BCD R 0)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

BCD R 1 BOOL Kulicky BPC PGA

BCD pravý válec

AliasFor: BCDX.9

BCD R 1 (Continued)

BCDX.9 Base Tag: Constant No Read/Write External Access:

BCD R 1 - main FBD/main FBD - *2-G1(OREF,BCD R 1), 2-F1(IREF,IN BCD R1), 2-F2(bcd to dec,bcd to dec 03.BCD1),

2-F2(IREF,BCDR1)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown Protection)

Protection(Unknown Protection)

BCD R 2 0 **BOOL** Kulicky BPC PGA

BCD pravý válec

AliasFor: BCDX.10 Base Tag: BCDX.10 Constant No

Read/Write External Access:

BCD R 2 - main FBD/main FBD - *2-G1(OREF,BCD R 2), 2-F1(IREF,IN BCD R2), 2-F2(bcd to dec,bcd to dec 03.BCD2),

 $2-F\overline{2}(IR\overline{E}F,BCD R 2)$

 $BCDX-Simulace/Simulace-*Unknown\ Protection (Unknown\ Protection),\ *Unknown\ Protection (Unknown\ Protection),\ *Unknown\ Protection),\ *Unknown\ Protection),\ *Unknown\ Protection)$

Protection(Unknown Protection)

BCD R 3 BOOL Kulicky BPC PGA

BCD pravý válec

AliasFor: BCDX.11 Base Tag: BCDX.11 Constant Read/Write External Access:

 $BCD_R_3 - main_FBD/main_FBD - *2-G1(OREF, BCD_R_3), 2-F1(IREF, IN_BCD_R3), 2-F2(bcd_to_dec, bcd_to_dec_03.BCD3), 2-F2(bcd_to_dec, bcd_to_dec_03.BCD3), 2-F2(bcd_to_dec, bcd_to_dec_03.BCD3), 2-F2(bcd_to_dec, bcd_to_dec_03.BCD3), 2-F2(bcd_to_dec, bcd_to_dec_03.BCD3), 2-F2(bcd_to_dec_03.BCD3), 2-F2(bcd_to$

2-F2(IREF,BCD R 3)

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

Protection(Unknown Protection)

bcd to dec 01 bcd to dec main FBD

bin to dec conversion

Constant No External Access: Read/Write

bcd to dec 01 - main FBD/main FBD - *2-B2(bcd to dec,bcd to dec 01), *2-B2(IREF,BCD L 0), *2-B2(IREF,BCD L 1),

*2-B2(IREF,BCD L 2), *2-B2(IREF,BCD L 3), *2-C2(OREF,AlarmH1), *2-C2(OREF,AlarmL1), *2-C2(OREF,No Balls1)

bcd to dec 01.EnableIn BOOL.

bin to dec conversion Enable Input - System Defined Parameter

bcd to dec 01.EnableOut BOOL 1

bin to dec conversion Enable Output - System Defined Parameter

bcd to dec 01.BCD0 **BOOL**

bin to dec conversion

bcd to dec 01.BCD1 0 BOOL

bin to dec conversion

bcd to dec 01.BCD2 0 **BOOL**

bin to dec conversion

bcd to dec 01.BCD3 **BOOL**

bin to dec conversion

bcd to dec 01.dec DINT

bin to dec conversion

0 **BOOL** bcd to dec 01.alarm L

bin to dec conversion

bcd to dec 01.alarm H 0 **BOOL**

bin to dec conversion

bcd to dec 02 bcd to dec main FBD

bin to dec conversion

Constant No

Read/Write External Access:

 $bcd_to_dec_02 - main_FBD/main_FBD - *2-D2(bcd_to_dec,bcd_to_dec_02), *2-D2(IREF,BCD_M_0), *2-D2(IREF,BCD_M_1), *2-D2(IREF,BCD_M_1), *2-D2(IREF,BCD_M_1), *2-D2(IREF,BCD_M_1), *2-D2(IREF,BCD_M_1), *2-D2(IREF,BCD_M_1), *$ *2-D2(IREF,BCD M 2), *2-D2(IREF,BCD M 3), *2-E2(OREF,AlarmH2), *2-E2(OREF,AlarmL2), *2-E2(OREF,No Balls2)

bcd to dec 02.EnableIn

bin to dec conversion Enable Input - System Defined Parameter

Protection(Unknown Protection)

Kulicky_BPC_PGA (Controlle	r)
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bcd to dec 02 (Continued) bcd to dec 02.EnableOut **BOOL** bin to dec conversion Enable Output - System Defined Parameter **BOOL** bcd to dec 02.BCD0 bin to dec conversion bcd to dec 02.BCD1 0 **BOOL** bin to dec conversion bcd to dec 02.BCD2 1 **BOOL** bin to dec conversion bcd to dec 02.BCD3 0 BOOL bin to dec conversion bcd to dec 02.dec DINT bin to dec conversion **BOOL** 0 bcd to dec 02.alarm L bin to dec conversion bcd to dec 02.alarm H 0 **BOOL** bin to dec conversion bcd to dec 03 main FBD bcd to dec bin to dec conversion Constant No External Access: Read/Write bcd to dec 03 - main FBD/main FBD - *2-F2(bcd to dec,bcd to dec 03), *2-F2(IREF,BCD R 0), *2-F2(IREF,BCD R 1), *2-F2(IREF,BCD R 2), *2-F2(IREF,BCD R 3), *2-G2(OREF,AlarmH3), *2-G2(OREF,AlarmL3), *2-G2(OREF,No Balls3) bcd to dec 03.EnableIn **BOOL** bin to dec conversion Enable Input - System Defined Parameter **BOOL** bcd to dec 03.EnableOut bin to dec conversion Enable Output - System Defined Parameter bcd to dec 03.BCD0 BOOL bin to dec conversion **BOOL** bcd to dec 03.BCD1 bin to dec conversion bcd to dec 03.BCD2 0 **BOOL** bin to dec conversion bcd to dec 03.BCD3 0 **BOOL** bin to dec conversion bcd to dec 03.dec 0 DINT bin to dec conversion **BOOL** bcd to dec 03.alarm L U bin to dec conversion bcd to dec 03.alarm H 0 **BOOL** bin to dec conversion BCD1 0 DINT Simulace Constant No **External Access:** Read/Write BCD1 - Simulace/Simulace - *Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection) 0 BCD2 DINT Simulace No Constant Read/Write **External Access:** BCD2 - Simulace/Simulace - *Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection) DINT BCD3 Simulace Constant No Read/Write External Access: BCD3 - Simulace/Simulace - *Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection) BCDX 72 DINT Kulicky BPC PGA Hodnoty BCD Constant No External Access: Read/Write

BCDX - Simulace/Simulace - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection), *Unknown

2-B2(IREF,BCD L 0)

2022-04-25 20:39:25 **BCDX** (Continued) 0 **BOOL** BCDX.0 Hodnoty BCD BCD L 0 - main FBD/main FBD - *2-B1(OREF,BCD L 0), 2-B1(IREF,IN BCD L0), 2-B2(bcd to dec,bcd to dec 01.BCD0),

BCDX.1 0 **BOOL** Hodnoty BCD

BCD L 1 - main FBD/main FBD - *2-B1(OREF,BCD L 1), 2-B1(IREF,IN BCD L1), 2-B2(bcd to dec,bcd to dec 2-B2(IREF,BCD L 1)

BCDX.2 0 BOOL

Hodnoty BCD BCD L 2 - main FBD/main FBD - *2-B1(OREF,BCD L 2), 2-B1(IREF,IN BCD L2), 2-B2(bcd to dec,bcd to dec 2-B2(IREF,BCD L 2)

1 **BOOL** BCDX.3

Hodnoty BCD

BCD L 3 - main FBD/main FBD - *2-B1(OREF,BCD L 3), 2-B1(IREF,IN BCD L3), 2-B2(bcd to dec,bcd to dec 2-B2(IREF,BCD L 3)

BCDX.4 0 BOOL

Hodnoty BCD

BCD M 0 - main FBD/main FBD - *2-D1(OREF,BCD M 0), 2-D1(IREF,IN BCD M0), 2-D2(bcd to dec,bcd to dec 2-D2(IREF,BCD M 0)

BCDX.5 0 BOOL

Hodnoty BCD

BCD M 1 - main FBD/main FBD - *2-D1(OREF,BCD M 1), 2-D1(IREF,IN BCD M1), 2-D2(bcd to dec,bcd to dec 02.BCD1), 2-D2(IREF,BCD M 1)

BOOL BCDX.6

Hodnoty BCD BCD M 2 - main FBD/main FBD - *2-D1(OREF,BCD M 2), 2-D1(IREF,IN BCD M2), 2-D2(bcd to dec,bcd to dec 02.BCD2), 2-D2(IREF,BCD M 2)

BCDX.7 BOOL

Hodnoty BCD

BCD M 3 - main FBD/main FBD - *2-D1(OREF,BCD M 3), 2-D1(IREF,IN BCD M3), 2-D2(bcd to dec,bcd to dec 02.BCD3), 2-D2(IREF,BCD M 3)

BCDX.8 BOOL

Hodnoty BCD

BCD R 0 - main FBD/main FBD - *2-G1(OREF,BCD R 0), 2-F1(IREF,IN BCD R0), 2-F2(bcd to dec,bcd to dec 03.BCD0), 2-F2(IREF,BCD R 0)

BOOL BCDX.9

Hodnoty BCD

BCD R 1 - main FBD/main FBD - *2-G1(OREF,BCD R 1), 2-F1(IREF,IN BCD R1), 2-F2(bcd to dec,bcd to dec 03.BCD1), 2-F2(IREF,BCD_R_1)

BOOL BCDX.10

Hodnoty BCD

BCD R 2 - main FBD/main FBD - *2-G1(OREF,BCD R 2), 2-F1(IREF,IN BCD R2), 2-F2(bcd to dec,bcd to dec 03.BCD2), 2-F2(IREF,BCD R 2)

BCDX.11 BOOL

Hodnoty BCD

BCD R 3 - main FBD/main FBD - *2-G1(OREF,BCD_R_3), 2-F1(IREF,IN_BCD_R3), 2-F2(bcd_to_dec,bcd_to_dec_03.BCD3), 2-F2(IREF,BCD R 3)

BNOT 01 FBD BOOLEAN NOT main FBD

Constant No

Read/Write External Access:

BNOT 01 - main FBD/main FBD - *1-B1(BNOT, BNOT 01), *1-C1(BAND, BAND 02.In2), *2-B3(BOR, BOR 04.Out)

BOR 01 FBD BOOLEAN OR main FBD

Constant No

Read/Write External Access:

BOR 01 - main FBD/main FBD - *3-E1(ventilator, ventilator_01.fault), *3-E2(ventilator, ventilator_02.fault),

*3-E3(ventilator, ventilator 03.fault), *3-G1(BOR,BOR 01), *3-G1(OREF,fault)

BOR 02 FBD BOOLEAN OR main FBD

Constant No

External Access: Read/Write

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```
BOR 02 (Continued)
```

BOR 02 - main FBD/main FBD - *1-A2(OSRI,OSRI 02.OutputBit), *1-A2(OSRI,OSRI 04.OutputBit), *1-B2(BOR,BOR 02), *1-E2(cilinder control,cilinder control 01.stop), *1-E3(cilinder control,cilinder control 02.stop),

*1-E5(cilinder control,cilinder control 03.stop)

BOR 03 FBD BOOLEAN OR main FBD

Constant No

External Access: Read/Write

BOR 03 - main FBD/main FBD - *3-A2(OSRI,OSRI 05.OutputBit), *3-B1(BOR,BOR 03), *3-B2(IREF,clr fault),

*3-C1(OSRI, OSRI 03.InputBit)

BOR 04 FBD BOOLEAN OR main FBD

Constant No

Read/Write External Access:

BOR 04 - main FBD/main FBD - *1-B1(BNOT,BNOT 01.In), *2-B3(BOR,BOR 04), *2-B4(IREF,AlarmH1), *2-B4(IREF,AlarmH2),

*2-B4(IREF,AlarmH3), *2-B4(IREF,AlarmL1), *2-B4(IREF,AlarmL2), *2-B4(IREF,AlarmL3)

C LED 0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.31 Base Tag: Local:3:O.Data[0].31

Constant

External Access: Read/Write C LED - main FBD/main FBD - *1-B5(OREF,C LED), 1-A5(EQU,EQU 01.Dest)

main FBD cilinder control 01 cilinder control

rizeni zapadek valce

Constant No Read/Write External Access:

cilinder control 01 - main FBD/main_FBD - *1-A5(EQU,EQU_01.SourceA), *1-B2(BOR,BOR_02.Out), *1-C1(BAND,BAND_02.Out),

*1-D2(IREF,No Balls1), *1-D2(IREF,TOC), *1-E2(cilinder control,cilinder control 01), *1-E2(IREF,S1), *1-F2(OREF,M1D),

*1-F2(OREF,M1U), *1-G2(BAND,BAND 01.In1), *1-H2(BAND,BAND 03.Out), *3-E1(ventilator,ventilator 01.on)

cilinder control 01.EnableIn

rizeni zapadek valce Enable Input - System Defined Parameter

cilinder control 01.EnableOut 1 **BOOL**

rizeni zapadek valce Enable Output - System Defined Parameter

cilinder control 01.senzor **BOOL**

rizeni zapadek valce

cilinder control 01.num balls 8 DINT

rizeni zapadek valce cilinder control 01.start 0

BOOL

rizeni zapadek valce cilinder control 01.stop

0 BOOL rizeni zapadek valce

cilinder control 01.activate 0 **BOOL**

rizeni zapadek valce

cilinder control 01.zapadka h 0 BOOL

rizeni zapadek valce

cilinder control 01.zapadka l 0 **BOOL**

rizeni zapadek valce

cilinder control 01.ball cntr DINT 0

rizeni zapadek valce

cilinder control 01.ready 0 **BOOL**

rizeni zapadek valce

0 cilinder control 01.run BOOL

rizeni zapadek valce

cilinder control 01.dose period 2000 DINT

rizeni zapadek valce

BOOL cilinder control 01.complete 0

rizeni zapadek valce

0 DINT cilinder control 01.state

rizeni zapadek valce

main FBD cilinder_control_02 cilinder_control

cilinder_control_03.ball_cntr

0

	2.1030	is tope_pga is occarrents is tadio 2000 if rejects it affects
cilinder control 02 (Continued)		
rizeni zapadek valce		
	No	
Constant	No	
External Access:	Read/Write	
		[1-C1(BAND,BAND_02.Out), *1-D4(IREF,No_Balls2)
*1-D4(IREF,TOC), *1-E3(cilinder	· control,cilinder control 02), *1-E4(IR	EF,S2), *1-F4(OREF,M2D), *1-F4(OREF,M2U),
	$\overline{H}2(BAND,BAND^{-}03.Out)$, *3-E2(ventila	
cilinder control 02.EnableIn	1	BOOL
rizeni zapadek valce Enable Input	System Defined Darameter	BOOL
	System Defined Farameter	DOOL
cilinder_control_02.EnableOut	I	BOOL
rizeni zapadek valce Enable Outpu	t - System Defined Parameter	
cilinder_control_02.senzor	1	BOOL
rizeni zapadek valce		
cilinder control 02.num balls	4	DINT
rizeni zapadek valce	•	BIN
		Poor
cilinder_control_02.start	0	BOOL
rizeni zapadek valce		
cilinder control 02.stop	0	BOOL
rizeni zapadek valce		
cilinder_control_02.activate	0	BOOL
rizeni zapadek valce	v	Book
*	0	DOOL
cilinder_control_02.zapadka_h	0	BOOL
rizeni zapadek valce		
cilinder_control_02.zapadka_l	0	BOOL
rizeni zapadek valce		
cilinder_control_02.ball_cntr	0	DINT
rizeni zapadek valce	v	
	0	DOOL
cilinder_control_02.ready	0	BOOL
rizeni zapadek valce		
cilinder_control_02.run	0	BOOL
rizeni zapadek valce		
cilinder control 02.dose period	2000	DINT
rizeni zapadek valce	2000	
	0	DOOL
cilinder_control_02.complete	0	BOOL
rizeni zapadek valce		
cilinder_control_02.state	0	DINT
rizeni zapadek valce		
1		
cilinder control 03		cilinder control main FBD
		enmaci_control main_1 bb
rizeni zapadek valce	N	
Constant	No	
External Access:	Read/Write	
cilinder_control_03 - main_FBD/n	nain_FBD - *1-B2(BOR,BOR_02.Out),	1-C1(BAND,BAND_02.Out), *1-D5(IREF,No_Balls3)
*1-D6(IREF,TOC), *1-E5(cilinder	control,cilinder control 03), *1-E5(IR	EF,S3), *1-F5(OREF,M3D), *1-F5(OREF,M3U),
*1-G2(BAND.BAND 01.In3). *1-	$\overline{H}2(BAND,BAND^{-}03.Out)$, *3-E3(ventila	tor.ventilator 03.on)
cilinder control 03.EnableIn	1 - // - /	BOOL
rizeni zapadek valce Enable Input	System Defined Parameter	Book
	1	BOOL
cilinder_control_03.EnableOut		DOOL
rizeni zapadek valce Enable Outpu	t - System Defined Parameter	
cilinder_control_03.senzor	1	BOOL
rizeni zapadek valce		
	0	DINT
cilinder_control_03.num_balls	0	DINT
cilinder_control_03.num_balls rizeni zapadek valce		
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start	0	DINT BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce	0	BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop		
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce	0	BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce	0 0	BOOL BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate	0	BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate rizeni zapadek valce	0 0 0	BOOL BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate rizeni zapadek valce cilinder_control_03.zapadka_h	0 0	BOOL BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate rizeni zapadek valce cilinder_control_03.zapadka_h rizeni zapadek valce	0 0 0	BOOL BOOL BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate rizeni zapadek valce cilinder_control_03.zapadka_h rizeni zapadek valce cilinder_control_03.zapadka_l	0 0 0	BOOL BOOL
cilinder_control_03.num_balls rizeni zapadek valce cilinder_control_03.start rizeni zapadek valce cilinder_control_03.stop rizeni zapadek valce cilinder_control_03.activate rizeni zapadek valce cilinder_control_03.zapadka_h rizeni zapadek valce	0 0 0	BOOL BOOL BOOL

DINT

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cilinder control 03 (Continued)

rizeni zapadek valce

0 **BOOL** cilinder control 03.ready

rizeni zapadek valce

cilinder control 03.run 0 **BOOL**

rizeni zapadek valce

cilinder control_03.dose_period 2000 DINT

rizeni zapadek valce

cilinder control 03.complete **BOOL**

rizeni zapadek valce

cilinder control 03.state 0 DINT

rizeni zapadek valce

0 **BOOL** clr_fault Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.14 Local:3:I.Data[1].14 Base Tag:

Constant No External Access: Read/Write

clr fault - main FBD/main FBD - 3-B1(BOR,BOR 03.In1), 3-B2(IREF,clr fault) IN_BCD_R3 - main_FBD/main_FBD - 2-F1(IREF,IN_BCD_R3), 2-G1(OREF,BCD_R_3)

EQU 01 FBD COMPARE main FBD

Constant No

Read/Write External Access: EQU 01 - main FBD/main FBD - *1-A5(EQU, EQU 01), *1-A6(IREF, 6), *1-B5(OREF, C LED),

*1-E2(cilinder_control,cilinder_control_01.state)

fault 16#0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.14 Local:3:O.Data[0].14 Base Tag:

Constant No Read/Write External Access:

fault - main FBD/main FBD - *3-G1(OREF,fault), 1-A2(OSRI,OSRI 04.InputBit), 1-A3(IREF,fault), 3-G1(BOR,BOR 01.Out)

0 Hodnota DINT Simulace

No Constant Read/Write External Access:

Hodnota - Simulace/Alarmy - *Unknown Protection(Unknown Protection), *Unknown Protection(Unknown Protection)

Hodnota - Simulace/BCD - *Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection), Unknown

Protection (Unknown Protection), Unknown Protection (Unknown Protection)

IN BCD L0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.3 Base Tag: Local:3:I.Data[1].3

Constant No External Access: Read/Write

IN BCD L0 - main_FBD/main_FBD - 2-B1(IREF,IN_BCD_L0), 2-B1(OREF,BCD_L_0)

IN BCD L1 BOOL Kulicky_BPC_PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.4 Base Tag: Local:3:I.Data[1].4

Constant

Read/Write External Access:

IN BCD L1 - main FBD/main FBD - 2-B1(IREF,IN BCD L1), 2-B1(OREF,BCD L 1)

IN BCD L2 **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.5 Base Tag: Local:3:I.Data[1].5

Constant No

C:\Users\bpc pga\Documents\Studio 5000\Projects\Kulicky BPC PGA.ACD

IN BCD L2 (Continued)

Read/Write External Access:

IN BCD L2 - main FBD/main FBD - 2-B1(IREF,IN_BCD_L2), 2-B1(OREF,BCD_L_2)

IN BCD L3 **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.6 Base Tag: Local:3:I.Data[1].6

Constant No Read/Write External Access:

IN BCD L3 - main FBD/main FBD - 2-B1(IREF,IN BCD L3), 2-B1(OREF,BCD L 3)

IN BCD M0 **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.7 Base Tag: Local:3:I.Data[1].7

Constant Read/Write External Access:

IN_BCD_M0 - main_FBD/main_FBD - 2-D1(IREF,IN_BCD_M0), 2-D1(OREF,BCD_M_0)

Kulicky_BPC_PGA IN BCD M1 **BOOL**

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.8 Base Tag: Local:3:I.Data[1].8

Constant Read/Write External Access:

IN BCD M1 - main FBD/main FBD - 2-D1(IREF,IN BCD M1), 2-D1(OREF,BCD M 1)

IN BCD M2 BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.9 Local:3:I.Data[1].9 Base Tag:

Constant No Read/Write External Access:

IN BCD M2 - main FBD/main FBD - 2-D1(IREF,IN BCD M2), 2-D1(OREF,BCD M 2)

IN BCD M3 **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.10 Base Tag: Local:3:I.Data[1].10

Constant No

External Access: Read/Write

IN BCD M3 - main FBD/main FBD - 2-D1(IREF,IN BCD M3), 2-D1(OREF,BCD M 3)

IN BCD R0 0 **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.11 Local:3:I.Data[1].11 Base Tag:

No Constant Read/Write External Access:

IN BCD R0 - main FBD/main FBD - 2-F1(IREF,IN BCD R0), 2-G1(OREF,BCD R 0)

IN BCD R1 0 BOOL Kulicky_BPC_PGA

NEPOUŽÍVAT!!!

SIM Iputs Data.12 AliasFor: Base Tag: Local:3:I.Data[1].12

Constant No

External Access: Read/Write

IN BCD R1 - main FBD/main FBD - 2-F1(IREF,IN BCD R1), 2-G1(OREF,BCD R 1)

IN BCD R2 0 **BOOL** Kulicky_BPC_PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Iputs Data.13 Local:3:I.Data[1].13 Base Tag:

2022-04-25 20:39:26 C:\Users\bpc pga\Documents\Studio 5000\Projects\Kulicky BPC PGA.ACD IN BCD R2 (Continued) Constant No Read/Write External Access: IN BCD R2 - main FBD/main FBD - 2-F1(IREF,IN BCD R2), 2-G1(OREF,BCD R 2) IN BCD R3 0 **BOOL** Kulicky BPC PGA NEPOUŽÍVAT!!! AliasFor: SIM Iputs Data.14 Base Tag: Local:3:I.Data[1].14 Constant No Read/Write External Access: IN BCD R3 - main FBD/main FBD - 2-F1(IREF,IN BCD R3), 2-G1(OREF,BCD R 3) clr fault - main FBD/main FBD - 3-B1(BOR,BOR 03.In1), 3-B2(IREF,clr fault) Local:3:I AB:1756 MODULE DINT 8Bytes:I:0 Kulicky BPC PGA NEPOUŽÍVAT!!! Constant No External Access: Read/Write Local:3:I.Data DINT NEPOUŽÍVAT!!! Local:3:I.Data[0] DINT NEPOUŽÍVAT!!! Local:3:I.Data[1] 583 DINT NEPOUŽÍVAT!!! 0 Local:3:I.Data[1].3 **BOOL** NEPOUŽÍVAT!!! IN_BCD_L0 - main_FBD/main_FBD - 2-B1(IREF,IN_BCD_L0), 2-B1(OREF,BCD_L_0) Local:3:I.Data[1].4 BOOL NEPOUŽÍVAT!!! IN BCD L1 - main FBD/main FBD - 2-B1(IREF,IN BCD L1), 2-B1(OREF,BCD L 1) Local:3:I.Data[1].5 BOOL NEPOUŽÍVAT!!! IN BCD L2 - main FBD/main FBD - 2-B1(IREF,IN BCD L2), 2-B1(OREF,BCD L 2) Local:3:I.Data[1].6 NEPOUŽÍVAT!!! IN BCD L3 - main FBD/main FBD - 2-B1(IREF,IN BCD L3), 2-B1(OREF,BCD L 3) Local:3:I.Data[1].7 BOOL NEPOUŽÍVAT!!! IN BCD M0 - main FBD/main FBD - 2-D1(IREF,IN BCD M0), 2-D1(OREF,BCD M 0) Local:3:I.Data[1].8 BOOL. NEPOUŽÍVAT!!! IN BCD M1 - main FBD/main FBD - 2-D1(IREF,IN_BCD_M1), 2-D1(OREF,BCD_M_1) Local:3:I.Data[1].9 NEPOUŽÍVAT!!! IN BCD M2 - main FBD/main FBD - 2-D1(IREF,IN BCD M2), 2-D1(OREF,BCD M 2) Local:3:I.Data[1].10 BOOL NEPOUŽÍVAT!!! IN_BCD_M3 - main_FBD/main_FBD - 2-D1(IREF,IN_BCD_M3), 2-D1(OREF,BCD_M_3) Local:3:I.Data[1].11 BOOL. NEPOUŽÍVAT!!! IN_BCD_R0 - $main_FBD/main_FBD$ - 2- $F1(IREF,IN_BCD_R0)$, 2- $G1(OREF,BCD_R_0)$ Local:3:I.Data[1].12 0 BOOL NEPOUŽÍVAT!!! IN BCD R1 - main FBD/main FBD - 2-F1(IREF,IN BCD R1), 2-G1(OREF,BCD R 1) Local:3:I.Data[1].13 NEPOUŽÍVAT!!! IN BCD R2 - main FBD/main FBD - 2-F1(IREF,IN BCD R2), 2-G1(OREF,BCD R 2) Local:3:I.Data[1].14 0 BOOL NEPOUŽÍVAT!!!

BOOL

clr fault - main FBD/main FBD - 3-B1(BOR,BOR 03.In1), 3-B2(IREF,clr fault) IN BCD R3 - main FBD/main FBD - 2-F1(IREF,IN BCD R3), 2-G1(OREF,BCD R 3)

0

Local:3:I.Data[1].16

NEPOUŽÍVAT!!!

```
Local:3:I (Continued)
   ZH1 - main FBD/main FBD - 3-E1(IREF,ZH1), 3-E1(ventilator, ventilator 01.zh)
 Local:3:I.Data[1].17
   NEPOUŽÍVAT!!!
   ZH2 - main FBD/main FBD - 3-E2(IREF,ZH2), 3-E2(ventilator, ventilator 02.zh)
                                  0
                                                                      BOOL
 Local:3:I.Data[1].18
   NEPOUŽÍVAT!!!
   ZH3 - main_FBD/main_FBD - 3-E3(IREF,ZH3), 3-E3(ventilator,ventilator_03.zh)
Local:3:0
                                                                      AB:1756 MODULE DINT 4Bytes:O:0
                                                                                                          Kulicky BPC PGA
   NEPOUŽÍVAT!!!
   Constant
                                  No
                                  Read/Write
   External Access:
 Local:3:O.Data
                                                                      DINT
   NEPOUŽÍVAT!!!
                                  0
                                                                      DINT
 Local:3:O.Data[0]
   NEPOUŽÍVAT!!!
                                  0
                                                                      BOOL
 Local:3:O.Data[0].0
   NEPOUŽÍVAT!!!
   MIU - main FBD/main FBD - *1-F2(OREF,MIU), 1-E2(cilinder control, cilinder control 01.zapadka h)
 Local:3:O.Data[0].1
                                                                      BOOL
   NEPOUŽÍVAT!!!
   M2U - main FBD/main FBD - *1-F4(OREF,M2U), 1-E3(cilinder control, cilinder control 02.zapadka h)
 Local:3:O.Data[0].2
                                                                      BOOL
   NEPOUZIVAT!!!
   M3U - main FBD/main FBD - *1-F5(OREF,M3U), 1-E5(cilinder control, cilinder control 03.zapadka h)
                                                                      BOOL
 Local:3:O.Data[0].14
   NEPOUŽÍVAT!!!
   fault - main FBD/main FBD - *3-G1(OREF,fault), 1-A2(OSRI,OSRI 04.InputBit), 1-A3(IREF,fault), 3-G1(BOR,BOR 01.Out)
 Local:3:O.Data[0].15
                                                                      BOOL
   NEPOUŽÍVAT!!!
   Z LED - main FBD/main FBD - *1-B5(OREF, Z LED), 1-G2(BAND, BAND 01.Out)
 Local:3:O.Data[0].16
                                                                      BOOL
   NEPOUŽÍVAT!!!
   M1D - main FBD/main FBD - *1-F2(OREF,M1D), 1-E2(cilinder control,cilinder control 01.zapadka l)
 Local:3:O.Data[0].17
                                                                      BOOL
   NEPOUŽÍVAT!!!
   M2D - main FBD/main FBD - *1-F4(OREF,M2D), 1-E3(cilinder control,cilinder control 02.zapadka l)
 Local:3:O.Data[0].18
                                                                      BOOL
   NEPOUŽÍVAT!!!
   M3D - main FBD/main FBD - *1-F5(OREF,M3D), 1-E5(cilinder control, cilinder control 03.zapadka l)
 Local:3:O.Data[0].19
   NEPOUŽÍVAT!!!
   Ve1 - main FBD/main FBD - *3-F1(OREF, Ve1), 3-E1(ventilator, ventilator 01.vent)
 Local:3:O.Data[0].20
   NEPOUŽÍVAT!!!
   Ve2 - main FBD/main FBD - *3-F2(OREF, Ve2), 3-E2(ventilator, ventilator 02.vent)
                                  0
 Local:3:O.Data[0].21
                                                                      BOOL
   NEPOUŽÍVAT!!!
   Ve3 - main FBD/main FBD - *3-F3(OREF, Ve3), 3-E3(ventilator, ventilator 03.vent)
 Local:3:O.Data[0].31
   NEPOUŽÍVAT!!!
   C LED - main FBD/main FBD - *1-B5(OREF,C LED), 1-A5(EQU,EQU 01.Dest)
                                                                      BOOL
                                                                                                          Kulicky BPC PGA
   NEPOUŽÍVAT!!!
   AliasFor:
                                  SIM Outputs Data.16
   Base Tag:
                                  Local:3:O.Data[0].16
   Constant
                                  Read/Write
   External Access:
   M1D - main FBD/main FBD - *1-F2(OREF,M1D), 1-E2(cilinder control,cilinder control 01.zapadka l)
M1U
                                  0
                                                                      BOOL
                                                                                                          Kulicky_BPC_PGA
```

M1U (Continued) NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.0 Local:3:O.Data[0].0

Base Tag: Constant External Access: Read/Write

M1U - main FBD/main FBD - *1-F2(OREF,M1U), 1-E2(cilinder_control,cilinder_control_01.zapadka h)

■ M2D BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.17 Base Tag: Local:3:O.Data[0].17

Constant

Read/Write External Access:

M2D - main FBD/main FBD - *1-F4(OREF,M2D), 1-E3(cilinder control,cilinder control 02.zapadka l)

■ M2U **BOOL** Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.1 Base Tag: Local:3:O.Data[0].1

Constant External Access: Read/Write

M2U - main FBD/main FBD - *1-F4(OREF,M2U), 1-E3(cilinder control, cilinder control 02.zapadka h)

■ M3D BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.18 Local:3:O.Data[0].18 Base Tag:

No Constant

Read/Write External Access:

M3D - main FBD/main FBD - *1-F5(OREF,M3D), 1-E5(cilinder control, cilinder control 03.zapadka l)

■ M3U BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM Outputs Data.2 Base Tag: Local:3:O.Data[0].2

Constant No External Access: Read/Write

M3U - main FBD/main FBD - *1-F5(OREF,M3U), 1-E5(cilinder control, cilinder control 03.zapadka h)

No_Balls1 0 DINT Kulicky BPC PGA

Počet kuliček, kolik se má odpočítav v levém válci Constant No Read/Write External Access:

No Balls1 - main FBD/main FBD - *2-C2(OREF,No Balls1), 1-D2(IREF,No Balls1), 1-E2(cilinder control,cilinder control 01.num balls),

2-B2(bcd to dec,bcd to dec 01.dec)

No Balls 1 - Simulace/Simulace - Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection)

■ No_Balls2 DINT Kulicky BPC PGA

Počet kuliček, kolik se má odpočítav v středním válci

Constant No

Read/Write External Access:

No Balls2 - main FBD/main FBD - *2-E2(OREF,No Balls2), 1-D4(IREF,No Balls2), 1-E3(cilinder control,cilinder control 02.num balls),

2-D2(bcd to dec,bcd to dec 02.dec)

No Balls2 - Simulace/Simulace - Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection)

No Balls3 DINT Kulicky BPC PGA

Počet kuliček, kolik se má odpočítav v pravém válci

Constant No

Read/Write External Access:

No Balls3 - main FBD/main FBD - *2-G2(OREF,No Balls3), 1-D5(IREF,No Balls3), 1-E5(cilinder control, cilinder control 03.num balls),

2-F2(bcd to dec,bcd to dec 03.dec)

No Balls3 - Simulace/Simulace - Unknown Protection(Unknown Protection), Unknown Protection(Unknown Protection)

OSRI 01 FBD ONESHOT main FBD

Constant No

Read/Write External Access:

OSRI 01 - main FBD/main FBD - *1-A1(IREF,START), *1-A1(OSRI,OSRI 01), *1-C1(BAND,BAND 02.In1)

OSRI 02 FBD ONESHOT main FBD

Constant No

External Access: Read/Write

OSRI 02 - main FBD/main FBD - *1-A2(IREF,STOP), *1-A2(OSRI,OSRI 02), *1-B2(BOR,BOR 02.In1)

OSRI 03 FBD ONESHOT main FBD

Constant No

External Access: Read/Write

OSRI 03 - main FBD/main FBD - *3-B1(BOR,BOR 03.Out), *3-C1(OSRI,OSRI 03), *3-E1(ventilator, ventilator 01.clr fault),

*3-E2(ventilator, ventilator 02.clr fault), *3-E3(ventilator, ventilator 03.clr fault)

OSRI_04 FBD ONESHOT main FBD

Constant No

External Access: Read/Write

OSRI 04 - main FBD/main FBD - *1-A2(OSRI,OSRI 04), *1-A3(IREF,fault), *1-B2(BOR,BOR 02.In2)

OSRI 05 FBD ONESHOT main FBD

Constant No

Read/Write **External Access:**

OSRI 05 - main FBD/main FBD - *3-A2(IREF,STOP), *3-A2(OSRI,OSRI 05), *3-B1(BOR,BOR 03.In2)

■ S1 BOOL Kulicky BPC PGA

snimac L

No Constant

Read/Write External Access:

S1 - main_FBD/main_FBD - 1-E2(cilinder_control,cilinder_control_01.senzor), 1-E2(IREF,S1)

■ S2 BOOL Kulicky BPC PGA

snimac M

Constant No

External Access: Read/Write

S2 - main FBD/main FBD - 1-E3(cilinder control, cilinder control 02.senzor), 1-E4(IREF,S2)

■ S3 0 **BOOL** Kulicky BPC PGA

snimac R No Constant

Read/Write External Access:

S3 - main FBD/main FBD - 1-E5(cilinder control, cilinder control 03.senzor), 1-E5(IREF,S3)

■ S4 BOOL Kulicky BPC PGA

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Constant No

Read/Write External Access:

S4 - main FBD/main FBD - 1-G2(BAND,BAND 01.In4), 1-G3(IREF,S4)

SIM_Iputs_Data DINT 16#0000 0247 Kulicky BPC PGA

Použití simulovaných vstupů

AliasFor: Local:3:I.Data[1] Base Tag: Local:3:I.Data[1]

Constant No External Access:

Read/Write SIM Iputs Data.3 **BOOL**

Použití simulovaných vstupů

IN BCD L0 - main FBD/main FBD - 2-B1(IREF,IN BCD L0), 2-B1(OREF,BCD L 0)

SIM Iputs Data.4

Použití simulovaných vstupů

IN BCD L1 - main FBD/main FBD - 2-B1(IREF,IN BCD L1), 2-B1(OREF,BCD L 1)

SIM Iputs Data.5 BOOL

Použití simulovaných vstupů

```
SIM Iputs Data (Continued)
   IN BCD L2 - main FBD/main FBD - 2-B1(IREF,IN_BCD_L2), 2-B1(OREF,BCD_L_2)
 SIM Iputs Data.6
                                                                     BOOL
   Použití simulovaných vstupů
   IN BCD L3 - main FBD/main FBD - 2-B1(IREF,IN BCD L3), 2-B1(OREF,BCD L 3)
 SIM Iputs Data.7
                                                                     BOOL
   Použití simulovaných vstupů
   IN BCD M0 - main FBD/main FBD - 2-D1(IREF,IN BCD M0), 2-D1(OREF,BCD M 0)
 SIM Iputs Data.8
   Použití simulovaných vstupů
   IN BCD M1 - main FBD/main FBD - 2-D1(IREF,IN BCD M1), 2-D1(OREF,BCD M 1)
 SIM Iputs Data.9
   Použití simulovaných vstupů
   IN BCD M2 - main FBD/main FBD - 2-D1(IREF,IN BCD M2), 2-D1(OREF,BCD M 2)
 SIM Iputs Data.10
   Použití simulovaných vstupů
   IN BCD M3 - main FBD/main FBD - 2-D1(IREF,IN BCD M3), 2-D1(OREF,BCD M 3)
 SIM Iputs Data.11
                                                                     BOOL
   Použití simulovaných vstupů
   IN BCD R0 - main FBD/main FBD - 2-F1(IREF,IN BCD R0), 2-G1(OREF,BCD R 0)
 SIM Iputs Data.12
   Použití simulovaných vstupů
   IN BCD R1 - main FBD/main FBD - 2-F1(IREF,IN BCD R1), 2-G1(OREF,BCD R 1)
 SIM Iputs Data.13
                                                                     BOOL
   Použití simulovaných vstupů
   IN BCD R2 - main FBD/main FBD - 2-F1(IREF,IN BCD R2), 2-G1(OREF,BCD R 2)
 SIM Iputs Data.14
                                                                     BOOL
   Použití simulovaných vstupů
   clr fault - main FBD/main FBD - 3-B1(BOR,BOR 03.In1), 3-B2(IREF,clr fault)
   IN_BCD_R3 - main_FBD/main_FBD - 2-F1(IREF,IN_BCD_R3), 2-G1(OREF,BCD_R_3)
 SIM Iputs Data.16
                                                                     BOOL
   Použití simulovaných vstupů
   ZH1 - main FBD/main_FBD - 3-E1(IREF,ZH1), 3-E1(ventilator,ventilator_01.zh)
 SIM Iputs Data.17
                                                                     BOOL
   Použití simulovaných vstupů
   ZH2 - main FBD/main FBD - 3-E2(IREF,ZH2), 3-E2(ventilator, ventilator 02.zh)
 SIM Iputs Data.18
                                                                     BOOL
   Použití simulovaných vstupů
   ZH3 - main_FBD/main_FBD - 3-E3(IREF,ZH3), 3-E3(ventilator,ventilator_03.zh)
SIM Outputs Data
                                  16#0000 0000
                                                                     DINT
                                                                                                         Kulicky_BPC_PGA
   Použití simulovaných výstupů
   AliasFor:
                                  Local:3:O.Data[0]
                                  Local:3:O.Data[0]
   Base Tag:
   Constant
                                  No
   External Access:
                                  Read/Write
 SIM Outputs Data.1
                                                                     BOOL
   Použití simulovaných výstupů
   M2U - main FBD/main FBD - *1-F4(OREF,M2U), 1-E3(cilinder control,cilinder control 02.zapadka h)
 SIM Outputs Data.2
                                                                     BOOL
   Použití simulovaných výstupů
   M3U - main FBD/main_FBD - *1-F5(OREF,M3U), 1-E5(cilinder_control,cilinder_control_03.zapadka_h)
 SIM Outputs Data.14
                                  0
                                                                     BOOL
   Použití simulovaných výstupů
   fault - main FBD/main FBD - *3-G1(OREF,fault), 1-A2(OSRI,OSRI 04.InputBit), 1-A3(IREF,fault), 3-G1(BOR,BOR 01.Out)
 SIM Outputs Data.15
                                                                     BOOL
   Použití simulovaných výstupů
   Z LED - main FBD/main FBD - *1-B5(OREF,Z LED), 1-G2(BAND,BAND 01.Out)
 SIM Outputs Data.16
                                  0
                                                                     BOOL
   Použití simulovaných výstupů
   M1D - main FBD/main FBD - *1-F2(OREF,M1D), 1-E2(cilinder control,cilinder control 01.zapadka l)
 SIM Outputs Data.17
   Použití simulovaných výstupů
   M2D - main FBD/main_FBD - *1-F4(OREF,M2D), 1-E3(cilinder_control,cilinder_control_02.zapadka_l)
```

SIM Outputs Data (Continued) 0 **BOOL** SIM Outputs Data.18 Použití simulovaných výstupů M3D - main FBD/main FBD - *1-F5(OREF,M3D), 1-E5(cilinder control,cilinder control 03.zapadka l) SIM Outputs Data.19 Použití simulovaných výstupů Ve1 - main FBD/main FBD - *3-F1(OREF, Ve1), 3-E1(ventilator, ventilator 01.vent) SIM Outputs Data.20 Použití simulovaných výstupů Ve2 - main FBD/main FBD - *3-F2(OREF, Ve2), 3-E2(ventilator, ventilator 02.vent) SIM Outputs Data.21 Použití simulovaných výstupů Ve3 - main FBD/main FBD - *3-F3(OREF, Ve3), 3-E3(ventilator, ventilator 03.vent) SIM Outputs Data.31 Použití simulovaných výstupů C LED - main FBD/main FBD - *1-B5(OREF,C LED), 1-A5(EQU,EQU 01.Dest) **■** START 0 BOOL. Kulicky BPC PGA Constant No External Access: Read/Write START - main FBD/main FBD - 1-A1(IREF,START), 1-A1(OSRI,OSRI 01.InputBit) STOP 0 BOOL Kulicky BPC PGA Constant No Read/Write External Access: STOP - main FBD/main FBD - 1-A2(IREF,STOP), 1-A2(OSRI,OSRI 02.InputBit), 3-A2(IREF,STOP), 3-A2(OSRI,OSRI 05.InputBit) **■** TOC 1000 DINT Kulicky BPC PGA Constant No Read/Write External Access: TOC - main FBD/main FBD - 1-D2(IREF,TOC), 1-D4(IREF,TOC), 1-D6(IREF,TOC), 1-E2(cilinder control,cilinder control 01.dose period), 1-E3(cilinder control, cilinder control 02.dose period), 1-E5(cilinder control, cilinder control 03.dose period) **■ TZH** 5000 DINT Kulicky BPC PGA Constant No External Access: Read/Write TZH - main FBD/main FBD - 3-E1(ventilator, ventilator 01.max delay), 3-E2(IREF, TZH), 3-E2(IREF, TZH), 3-E2(ventilator, ventilator 02.max delay), 3-E3(IREF,TZH), 3-E3(ventilator, ventilator 03.max delay) ■ Ve1 BOOL Kulicky BPC PGA NEPOUŽÍVAT!!! AliasFor: SIM Outputs Data.19 Base Tag: Local:3:O.Data[0].19 Constant No Read/Write External Access: Ve1 - main FBD/main FBD - *3-F1(OREF, Ve1), 3-E1(ventilator, ventilator 01.vent) BOOL Kulicky BPC PGA NEPOUŽÍVAT!!! AliasFor: SIM Outputs Data.20 Base Tag: Local:3:O.Data[0].20 Constant No Read/Write External Access: Ve2 - main FBD/main FBD - *3-F2(OREF, Ve2), 3-E2(ventilator, ventilator 02.vent) BOOL Kulicky BPC PGA NEPOUŽÍVAT!!! AliasFor: SIM Outputs Data.21 Base Tag: Local:3:O.Data[0].21 Constant Read/Write External Access: Ve3 - main FBD/main FBD - *3-F3(OREF, Ve3), 3-E3(ventilator, ventilator 03.vent) main_FBD ventilator_01 ventilator

ventilator 03.fault

rizeni ventilatoru

0

2022-04-25 20:39:28 C:\Users\bpc pga\Documents\Studio 5000\Projects\Kulicky BPC PGA.ACD ventilator 01 (Continued)

rizeni ventilatoru Constant No Read/Write External Access: ventilator 01 - main FBD/main FBD - *1-E2(cilinder control, cilinder control 01.run), *3-C1(OSRI, OSRI 03.OutputBit), *3-E1(IREF,ZH1), *3-E1(ventilator,ventilator 01), *3-E2(IREF,TZH), *3-F1(OREF,Ve1), *3-G1(BOR,BOR 01.In1) ventilator 01.EnableIn BOOL rizeni ventilatoru Enable Input - System Defined Parameter **BOOL** ventilator 01.EnableOut rizeni ventilatoru Enable Output - System Defined Parameter ventilator 01.on BOOL 0 rizeni ventilatoru ventilator 01.zh 0 BOOL rizeni ventilatoru ventilator 01.clr fault 0 **BOOL** rizeni ventilatoru 0 **BOOL** ventilator 01.fault rizeni ventilatoru ventilator 01.vent 0 **BOOL** rizeni ventilatoru ventilator 01.max delay 5000 DINT rizeni ventilatoru ventilator 02 ventilator main FBD rizeni ventilatoru Constant No Read/Write External Access: ventilator 02 - main FBD/main FBD - *1-E3(cilinder control, cilinder control 02.run), *3-C1(OSRI, OSRI 03.OutputBit), *3-E2(IREF, TZH), *3-E2(IREF,ZH2), *3-E2(ventilator, ventilator 02), *3-F2(OREF, Ve2), *3-G1(BOR,BOR 01.In2) ventilator_02.EnableIn **BOOL** rizeni ventilatoru Enable Input - System Defined Parameter **BOOL** ventilator 02.EnableOut 1 rizeni ventilatoru Enable Output - System Defined Parameter ventilator 02.on **BOOL** rizeni ventilatoru ventilator 02.zh 0 **BOOL** rizeni ventilatoru 0 ventilator 02.clr fault **BOOL** rizeni ventilatoru ventilator 02.fault 0 **BOOL** rizeni ventilatoru ventilator 02.vent BOOL rizeni ventilatoru ventilator 02.max delay 5000 DINT rizeni ventilatoru ventilator 03 ventilator main FBD rizeni ventilatoru Constant No Read/Write External Access: ventilator 03 - main FBD/main FBD - *1-E5(cilinder control, cilinder control 03.run), *3-C1(OSRI, OSRI 03.OutputBit), *3-E3(IREF, TZH), *3-E3(IREF,ZH3), *3-E3(ventilator,ventilator_03), *3-F3(OREF,Ve3), *3-G1(BOR,BOR_01.In3) ventilator 03.EnableIn BOOL rizeni ventilatoru Enable Input - System Defined Parameter ventilator 03.EnableOut BOOL rizeni ventilatoru Enable Output - System Defined Parameter ventilator 03.on BOOL rizeni ventilatoru 0 **BOOL** ventilator 03.zh rizeni ventilatoru 0 ventilator 03.clr fault BOOL rizeni ventilatoru

BOOL

ventilator 03 (Continued)

ventilator_03.vent 0

rizeni ventilatoru

ventilator 03.max delay 5000 DINT

rizeni ventilatoru

I Z LED 0 BOOL Kulicky_BPC_PGA

BOOL

NEPOUŽÍVAT !!!

AliasFor: SIM_Outputs_Data.15
Base Tag: Local:3:O.Data[0].15

Constant No

External Access: Read/Write Z LED - main FBD/main FBD - *1-B5(OREF, Z LED), 1-G2(BAND, BAND 01.Out)

ZH1 0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT!!!

AliasFor: SIM_Iputs_Data.16
Base Tag: Local:3:I.Data[1].16

Constant No External Access: Read/Write

ZH1 - main_FBD/main_FBD - 3-E1(IREF,ZH1), 3-E1(ventilator, ventilator_01.zh)

■ ZH2 0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT !!!

AliasFor: SIM_Iputs_Data.17
Base Tag: Local:3:I.Data[1].17

Constant No.

External Access: Read/Write

ZH2 - main_FBD/main_FBD - 3-E2(IREF,ZH2), 3-E2(ventilator,ventilator_02.zh)

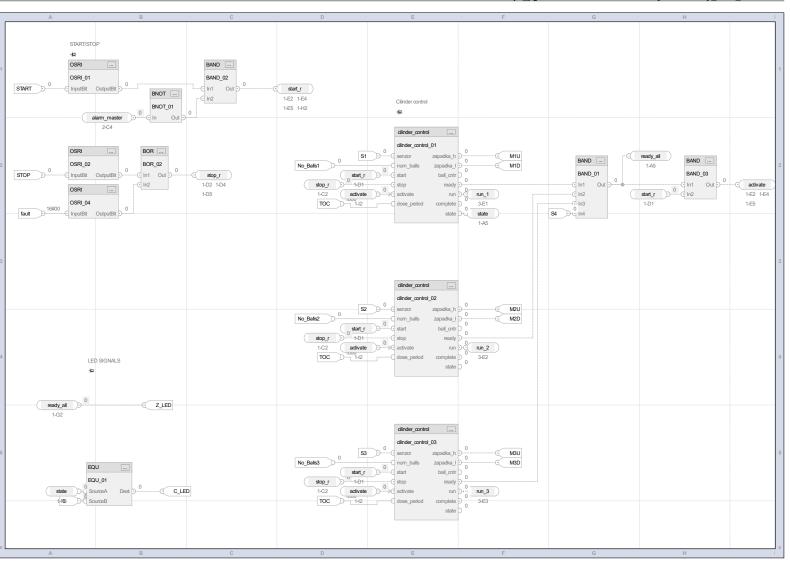
■ ZH3 0 BOOL Kulicky BPC PGA

NEPOUŽÍVAT !!!

AliasFor: SIM_Iputs_Data.18
Base Tag: Local:3:I.Data[1].18

Constant No External Access: Read/Write

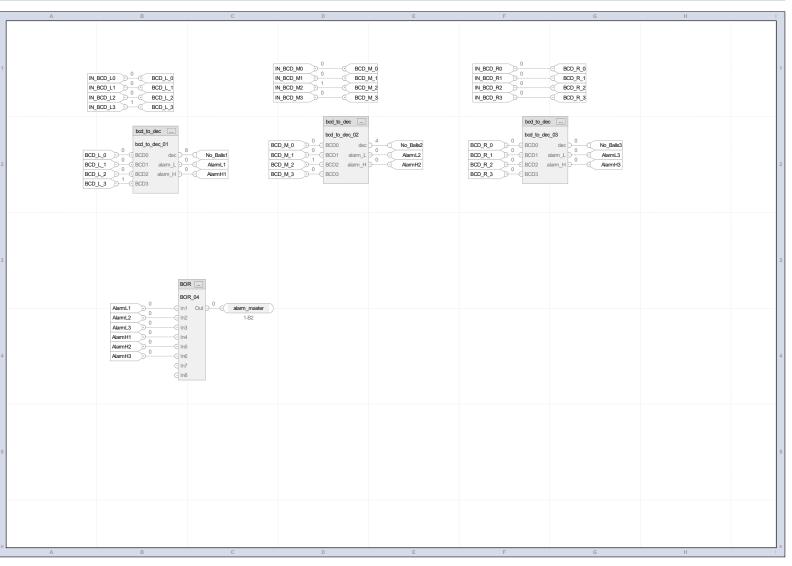
ZH3 - main_FBD/main_FBD - 3-E3(IREF,ZH3), 3-E3(ventilator,ventilator_03.zh)



Logix Designer

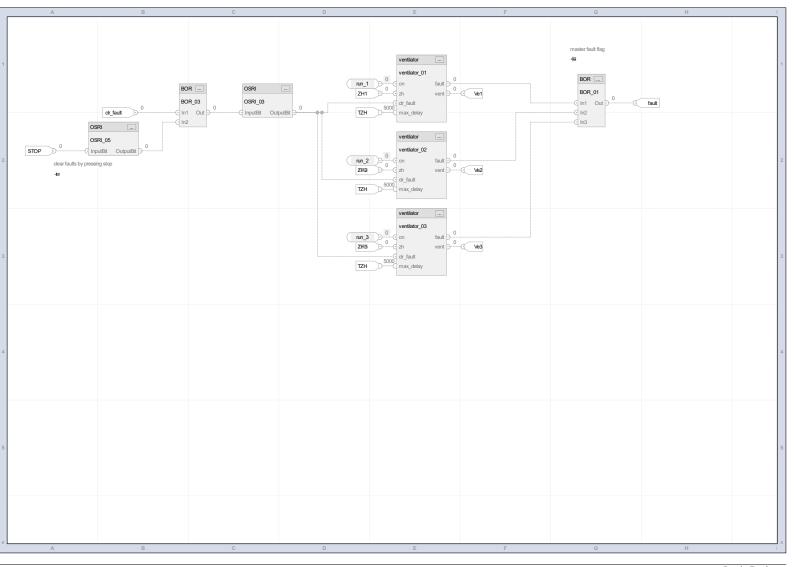
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2 of 3 total sheets in routine - bcd and alarms



Logix Designer

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Alarmy - Routine Listing (Source Not Available)
Kulicky_BPC_PGA:Simulace:Simulace
Routine Listing (Source Not Available)

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Unable to print the Routine: Source not available

BCD - Routine Listing (Source Not Available)
Kulicky_BPC_PGA:Simulace:Simulace
Routine Listing (Source Not Available)

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Unable to print the Routine: Source not available

Simulace - Routine Listing (Source Not Available)
Kulicky_BPC_PGA:Simulace:Simulace
Routine Listing (Source Not Available)

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Unable to print the Routine: Source not available

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Data Context: bcd_to_dec <definition>

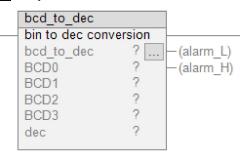
Signature Listing

🖶 bcd_to_dec v1.0

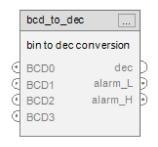
bin to dec conversion

Available Languages

📕 Relay Ladder



🚹 Function Block



Structured Text bcd to dec();

Parameters

Required	Name	Data Type	Usage	Description
X	bcd_to_dec	bcd_to_dec	InOut	bin to dec conversion
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
	BCD0	BOOL	Input	
	BCD1	BOOL	Input	
	BCD2	BOOL	Input	
	BCD3	BOOL	Input	
	dec	DINT	Output	
	alarm_L	BOOL	Output	
	alarm_H	BOOL	Output	

Extended Description

Execution

Condition Description

EnableIn is true

Revision v1.0 Notes

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Name	Default	Data Type	Scope
alarm H	0	BOOL	bcd to dec
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	E2(OREF,alarm H), 1-D2(GRT,GRT 01.	Dast	
alarm_11 - bca_to_dec/Logic - 1-	E2(OKEF, atarm_11), 1-D2(OK1, OK1_01)	.Desi)	
alaum I	0	BOOL	bcd_to_dec
alarm_L		BOOL	ocd_to_dec
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
alarm_L - bcd_to_dec/Logic - *1-1	$E2(OREF, alarm_L), 1-D1(LES, LES_01.D)$	Dest)	
BCD0	0	BOOL	bcd_to_dec
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
BCD0 - bcd to dec/Logic - 1-B1(1	IREF.BCD0), 1-B1(OREF.dec.0)		
Debo cea_to_ace, bogie 1 D1(1	1121,2 02 0), 1 21(0121,000.0)		
BCD1	0	BOOL	bcd to dec
Usage:	Input Parameter	BOOL	oou_to_uee
	No		
Required: Visible:			
	Yes		
External Access:	Read/Write		
BCD1 - bcd_to_dec/Logic - 1-B1(I	IREF,BCD1), 1-B1(OREF,dec.1)		
DCD3	0	DOOL	1.14.4.1
BCD2	0	BOOL	bcd_to_dec
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
BCD2 - bcd_to_dec/Logic - 1-B1(I	IREF,BCD2), 1-B1(OREF,dec.2)		
BCD3	0	BOOL	bcd_to_dec
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
BCD3 - bcd to dec/Logic - 1-B2(1			
BCD3 - Oca_to_acc/Logic - 1-B2(1	TREE (BCD3), 1-B2(OREI (acc.3)		
dec	0	DINT	bcd_to_dec
Usage:	Output Parameter		550_15_050
Required:	No		
Visible:	Yes		
External Access:	Read Only	C A DOMBEL A DOMBEL	,
`	S,LES_01.SourceA), 1-D2(GRT,GRT_01.		ec)
dec.0	0	BOOL	
dec.0 - bcd_to_dec/Logic - *1-B1(<i>OREF,dec.0), 1-B1(IREF,BCD0)</i>		
dec.1	0	BOOL	
dec.1 - bcd_to_dec/Logic - *1-B1(OREF,dec.1), 1-B1(IREF,BCD1)		
dec.2	0	BOOL	
dec.2 - bcd to dec/Logic - *1-B1(OREF,dec.2), 1-B1(IREF,BCD2)		
dec.3	0	BOOL	
dec.3 - bcd_to_dec/Logic - *1-B2(OREE.dec.3), 1-B2(IREE.BCD3)		
1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	,,, - ==(-1.22,2020)		

bcd_to_dec Instruction Definition - Local Tag Listing

Kulicky_BPC_PGA:Add-On Instructions:bcd_to_dec

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Data Context: bcd_to_dec <definition>

bcd_to_dec

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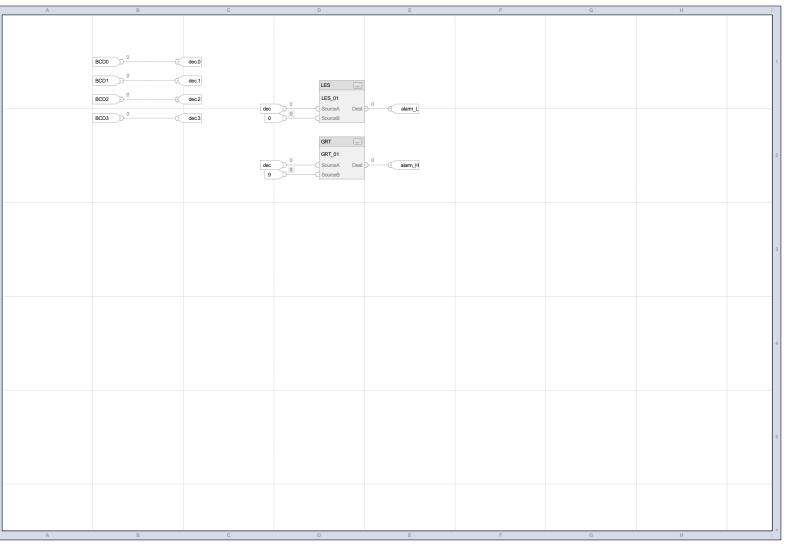
Name Default Scope bcd_to_dec Data Type FBD COMPARE GRT 01 Local Tag Usage: External Access: None GRT_01 - bcd_to_dec/Logic - *1-D2(GRT,GRT_01), *1-D2(IREF,9), *1-D2(IREF,dec), *1-E2(OREF,alarm_H)

FBD_COMPARE

LES_01 Usage: Local Tag External Access: None

LES_01 - bcd_to_dec/Logic - *1-D1(LES,LES_01), *1-D2(IREF,0), *1-D2(IREF,dec), *1-E2(OREF,alarm_L)

bcd_to_dec Instruction Definition - Logic Routine
Kulicky_BPC_PGA:Add-On Instructions:bcd_to_dec:Logic
1 of 1 total sheets in routine
Data Context: bcd_to_dec <definition>



Logix Designer

☐ cilinder_control v1.0

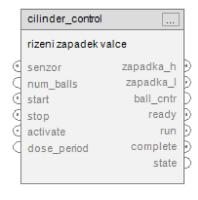
rizeni zapadek valce

Available Languages

📘 Relay Ladder



🛂 Function Block



Structured Text cilinder_control();

Parameters

Required	Name	Data Type	Usage	Description
X	cilinder_control	cilinder_control	InOut	rizeni zapadek valce
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
	senzor	BOOL	Input	
	num_balls	DINT	Input	
	start	BOOL	Input	
	stop	BOOL	Input	
	activate	BOOL	Input	
	zapadka_h	BOOL	Output	
	zapadka_l	BOOL	Output	
	ball_cntr	DINT	Output	
	ready	BOOL	Output	
	run	BOOL	Output	
	dose_period	DINT	Input	
	complete	BOOL	Output	
	state	DINT	Output	
			_	

Add-On Instructions - Instruction Definition
Kulicky_BPC_PGA:Add-On Instructions
Data Context: cilinder_control <definition>

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Extended Description

Execution

Condition

Description

EnableIn is true rizeni zapadek valce

Revision v1.0 Notes

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Name	Default	Data Type	Scope
ball entr	0	DINT	cilinder_control
Usage:	Output Parameter	21.11	• • • • • • • • • • • • • • • • • • •
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	ol/Logic - #69, #70, *#48, *#69, *#99		
ban_chir - chinaer_contro	1/Logic - 1107, 11/0, 11/10, 11/0, 11/0		
complete	0	BOOL	cilinder_control
Usage:	Output Parameter	BOOL	emmaer_control
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	ol/Logic - *#100, *#49, *#6, *#72		
complete - citinaer_contro	11/L0gic - 1#100, 1#49, 1#0, 1#/2		
dose menied	1000	DINT	oilindan aantral
dose_period		DINI	cilinder_control
Usage:	Input Parameter		
Required: Visible:	No Yes		
External Access:	Read/Write		
dose_period - cilinder_cor	ntrol/Logic - #20, *#19		
	5	DINT	212 1 4 1
num_balls	5	DINT	cilinder_control
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
num_balls - cilinder_contr	rol/Logic - #70		
_	•	D. 0.4	
ready	0	BOOL	cilinder_control
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
ready - cilinder_control/Lo	ogic - #46, *#12, *#14, *#7		
run	0	BOOL	cilinder_control
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
run - cilinder_control/Log	ic - *#40, *#45, *#5, *#54, *#96		
senzor	0	BOOL	cilinder_control
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
senzor - cilinder_control/L	Logic - #11		
start	0	BOOL	cilinder_control
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
start - cilinder_control/Log	gic - #102, #41, #46		
	•	D.D. III	
state	0	DINT	cilinder_control
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
state - cilinder_control/Log	gic - *#108		

cilinder_control Instruction Definition - Parameter Listing

Kulicky_BPC_PGA:Add-On Instructions:cilinder_control

Data Type Size: 120 byte (s) Data Context: cilinder control <definition>

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cilinder control

stop

Usage: Input Parameter

Required: No Visible: Yes Read/Write External Access:

stop - cilinder_control/Logic - #27

BOOL cilinder_control zapadka_h

BOOL

Usage: Output Parameter

Required: No Visible: Yes

Read/Write External Access:

 $zapadka_h$ - $cilinder_control/Logic$ - *#3, *#38, *#43, *#52, *#62, *#76, *#85, *#94

BOOL cilinder_control zapadka 1

Output Parameter Usage:

Required: No Visible: Yes External Access: Read/Write

zapadka_l - cilinder_control/Logic - *#39, *#4, *#44, *#53, *#63, *#77, *#86, *#95

cilinder_control Instruction Definition - Local Tag Listing
Kulicky_BPC_PGA:Add-On Instructions:cilinder_control
Data Context: cilinder_control <definition>

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Name	Default	Data Type	Scope
_force_cleaning	0	BOOL	cilinder_control
Usage:	Local Tag		
External Access:	None		
_force_cleaning - cilinder_co	ontrol/Logic - #97, *#29, *#31		
_state	0	DINT	cilinder_control
Usage:	Local Tag		
External Access:	None		
_state - cilinder_control/Logi	ic - #108, #11, #28, #36, *#103	, *#106, *#2, *#32, *#41, *#47, *#59, *#68, *#	<i>#71,</i> * <i>#82,</i> * <i>#91,</i> * <i>#98</i>
tim1		FBD_TIMER	cilinder control
Usage:	Local Tag	_	_
External Access:	None		
_tim1 - cilinder_control/Logi	c - *#22		
tim1.TimerEnable	0	BOOL	
tim1.TimerEnable - cilinder	control/Logic - *#55, *#57, *#	#64, *#66, *#78, *#80, *#87, *#89	
_tim1.PRE	0	DINT	
tim1.PRE - cilinder control	/Logic - *#20		
_tim1.Reset	0	BOOL	
	l/Logic - *#21, *#23, *#58, *#6	67, *#81, *#90	
_tim1.DN	0	BOOL	
_tim1.DN - cilinder_control/l	Logic - #56, #65, #79, #88		
tim2		FBD_TIMER	cilinder control
Usage:	Local Tag	-	_
External Access:	None		
tim2 - cilinder control/Logi	c - *#24		
tim2.Reset	0	BOOL	
tim2.Reset - cilinder_contro	l/Logic - *#25		

```
1 if S:FS then //init.
       _state := 0; //idle
 2
 3
       zapadka_h := 0;
4
       zapadka_1 := 0;
       run := 0;
       complete := 0;
6
7
       ready := 0;
8 end_if;
9
10 ///READY signaů
11 if(senzor and _state=1) then
       ready := 1;
12
13 else
14
       ready :=0;
15 end_if;
16
17 ///TIMERS
18 //casovac davkovani
19 dose_period := 2000;
20 _tim1.PRE := dose_period/4;
21 _tim1.Reset := S:FS;
22 TONR( tim1);
23 _tim1.Reset := 0;
24 TONR(_tim2);
25 _tim2.Reset := 0;
26
27 if stop then
       if _state = 6 then
28
29
           _force_cleaning :=1; //second stop press
30
31
           _force_cleaning:=0;
32
           _state := 6; //cleaning
       end if;
33
34 end_if;
35
36 case _state of
37
       0: //idle
           zapadka_h :=0;
39
           zapadka_l :=0;
40
           run :=0;
41
           if start then _state:=1; end_if;
42
       1: // plneni valce
43
           zapadka_h :=0;
44
           zapadka_l :=1;
45
           run :=0;
           if start and ready then
47
               _state:=2; //start cycle
               ball_cntr :=0; //reset cntr
48
49
               complete :=0; //clear flag
50
           end_if;
51
       2: //zavreno_1
52
           zapadka_h :=1;
53
           zapadka_l :=1;
54
           run :=1;
55
           tim1.TimerEnable :=1;
56
           if _tim1.DN then
57
               _tim1.TimerEnable :=0;
               _tim1.Reset :=1;
58
```

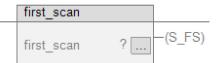
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```
59
                 _state :=3;
 60
            end if;
 61
        3: //vypadnuti kulicky
 62
            zapadka_h :=1;
 63
            zapadka 1 :=0;
 64
            _tim1.TimerEnable :=1;
            if _tim1.DN then
 65
                _tim1.TimerEnable :=0;
 66
                _tim1.Reset :=1;
 67
 68
                 _state :=4;
                ball_cntr := ball_cntr+1;
 69
                if ball_cntr >= num_balls then
 70
 71
                     state :=1; //konec cyklu
 72
                     complete :=1;
 73
                 end_if;
 74
            end_if;
 75
        4: //zavreno_2
 76
            zapadka_h :=1;
 77
            zapadka_l :=1;
 78
            _tim1.TimerEnable :=1;
 79
            if _tim1.DN then
 80
                 tim1.TimerEnable :=0;
 81
                 _tim1.Reset :=1;
                 state :=5;
 82
            end_if;
 83
 84
        5: //vpadnuti kulicky
 85
            zapadka_h :=0;
 86
            zapadka_l :=1;
 87
             _tim1.TimerEnable :=1;
 88
            if _tim1.DN then
 89
                 _tim1.TimerEnable :=0;
 90
                _tim1.Reset :=1;
 91
                 state :=2;
 92
            end if:
 93
        6: //cleaning - waiting
 94
            zapadka_h :=0;
 95
            zapadka_l :=1;
            run:=0;
 97
            if _force_cleaning then //manual or automat cleaning
                 _state := 0; //idle state
 98
 99
                 ball_cntr :=0;
100
                complete :=0;
101
            end_if;
102
            if start then
                 _state:=1; //cancel cleaning by pressing start
103
            end if;
105
        else
106
            _state :=0;
107 end_case;
108 state :=_state;
109
110
```

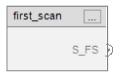
🗄 first_scan v1.0

Available Languages

📋 Relay Ladder



Function Block



Structured Text first_scan();

Parameters

Required	Name	Data Type	Usage	Description
X	first_scan	first_scan	InOut	
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
	S_FS	BOOL	Output	

Extended Description

Execution

Condition Description

EnableIn is true

Revision v1.0 Notes

first_scan Instruction Definition - Parameter Listing

Kulicky_BPC_PGA:Add-On Instructions:first_scan
Data Type Size: 4 byte (s)
Data Context: first_scan <definition>

Name

Visible:

 S_FS - $first_scan/Logic$ - *#1

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Data Type BOOL Scope first_scan Default S_FS
Usage:
Required: 0 Output Parameter No Yes Read Only External Access:

first_scan Instruction Definition - Local Tag Listing
Kulicky_BPC_PGA:Add-On Instructions:first_scan
Data Context: first_scan <definition>

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Name No Tags Exist Default Data Type Scope

first_scan Instruction Definition - Logic Routine
Kulicky_BPC_PGA:Add-On Instructions:first_scan:Logic
Total number of lines in routine: 1
Data Context: first_scan <definition>

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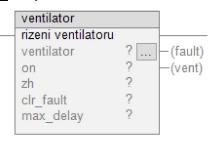
1 S_FS:= S:FS;

🗄 ventilator v1.0

rizeni ventilatoru

Available Languages

📕 Relay Ladder



🚹 Function Block



Structured Text ventilator();

Parameters

Required	Name	Data Type	Usage	Description
X	ventilator	ventilator	InOut	rizeni ventilatoru
	EnableIn EnableOut on zh clr_fault fault vent max_delay	BOOL BOOL BOOL BOOL BOOL BOOL DINT	Input Output Input Input Input Output Output Input	

Extended Description

Execution

Condition Description

EnableIn is true

Revision v1.0 Notes

Default

Scope

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Name

Data Context:	ventilator <definition></definition>

clr fault	0	BOOL	ventilator
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	1-E2(BOR,BOR_02.In2), 1-E3(IRE	F,clr_fault)	
fault	0	BOOL	ventilator
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
fault - ventilator/Logic - *1-	F2(OREF,fault), 1-F2(SETD,SETD_	01.Out)	
max delay	5000	DINT	ventilator
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
		2(IREF,max delay), 1-C2(TONR,TO	ONR 02.PRE), 1-C3(IREF,max delay)
_ ,	,	,	_ , , , , , ,
on	0	BOOL	ventilator
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	TREF,on), 1-B1(TONR,TONR_01.Tin	nerEnable), 1-B2(BNOT,BNOT_01.	In), 1-B2(IREF,on), 1-B3(IREF,on),
1-C1(OREF,vent)			
vent	0	BOOL	ventilator
Usage:	Output Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write		
	C1(OREF,vent), 1-B1(IREF,on)		
1	0	poor	.e.
zh	0	BOOL	ventilator
Usage:	Input Parameter		
Required:	No		
Visible:	Yes		
External Access:	Read/Write	II I DA DIVOTTOVOTI DA TILITA	2 (TD FF 1)
zh - ventilator/Logic - 1-B1(TONR,TONR_01.Reset), 1-B2(IREF,	zh), 1-B3(BNOT,BNOT_02.In), 1-B.	B(IREF,zh)

Data Type

Kulicky_BPC_PGA:Add-On Instructions:ventilator

Data Context: ventilator <definition>

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Name Default Data Type Scope
BNOT 01 FBD BOOLEAN NOT ventilator

Usage: Local Tag
External Access: None

BNOT 01 - ventilator/Logic - *1-B2(BNOT,BNOT 01), *1-B3(IREF,on), *1-C2(TONR,TONR 02.TimerEnable)

BNOT 02 FBD BOOLEAN NOT ventilator

Usage: Local Tag
External Access: None

BNOT 02 - ventilator/Logic - *1-B3(BNOT,BNOT 02), *1-B3(IREF,zh), *1-C2(TONR,TONR 02.Reset)

BOR 01 FBD BOOLEAN OR ventilator

Usage: Local Tag
External Access: None

BOR 01 - ventilator/Logic - *1-B1(TONR, TONR 01.DN), *1-C2(TONR, TONR 02.DN), *1-D1(BOR, BOR 01), *1-F2(SETD, SETD 01.Set)

BOR 02 FBD BOOLEAN OR ventilator

Usage: Local Tag External Access: None

BOR 02 - ventilator/Logic - *1-D2(first scan, first scan 01.S FS), *1-E2(BOR,BOR 02), *1-E3(IREF,clr fault), *1-F2(SETD,SETD 01.Reset)

first scan 01 first scan ventilator

Usage: Local Tag
External Access: None

first scan 01 - ventilator/Logic - *1-D2(first scan,first scan 01), *1-E2(BOR,BOR 02.In1)

first scan 01.EnableIn 1 BOOL

Enable Input - System Defined Parameter

first scan 01.EnableOut 0 BOOL

Enable Output - System Defined Parameter

SETD 01 DOMINANT SET ventilator

Usage: Local Tag
External Access: None

SETD 01 - ventilator/Logic - *1-D1(BOR,BOR 01.Out), *1-E2(BOR,BOR 02.Out), *1-F2(OREF,fault), *1-F2(SETD,SETD 01)

TONR 01 FBD TIMER ventilator

Usage: Local Tag
External Access: None

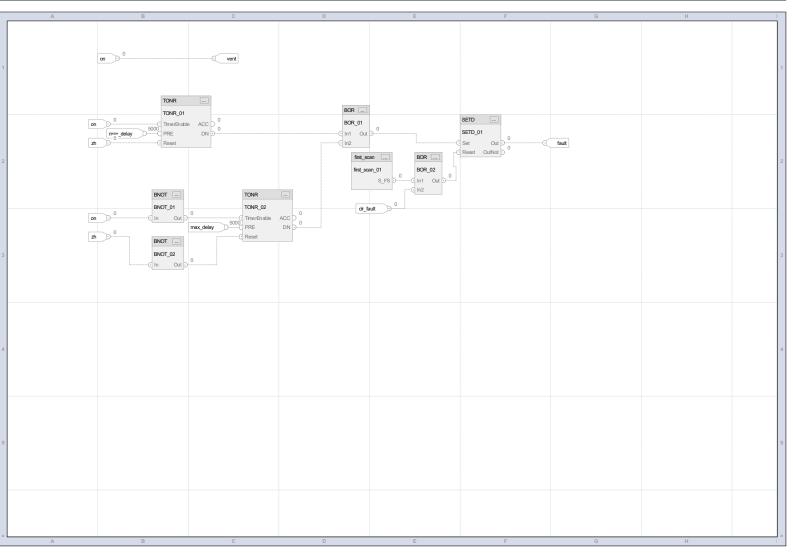
 $TONR_01 - ventilator/Logic - *1-B1(TONR, TONR_01), *1-B2(IREF, max_delay), *1-B2(IREF, on), *1-B2(IREF, zh), *1-D1(BOR, BOR_01.In1) + (APP - APP - A$

TONR 02 FBD TIMER ventilator

Usage: Local Tag
External Access: None

 $TONR_02 - ventilator/Logic - *1-B2(BNOT,BNOT_01.Out), *1-B3(BNOT,BNOT_02.Out), *1-C2(TONR,TONR_02), *1-C3(IREF,max_delay), *1-C3(IREF,max_delay), *1-C3(IREF,m$

*1-D1(BOR,BOR 01.In2)



Logix Designer

Value

Style

Data type Name: bcd_to_dec

Description:

Name

bin to dec conversion

Size: 36 byte(s)

EnableIn		BOOL	Decimal	
Enable Input - System Def				
External Access:	Read Only			
EnableOut	g 15	BOOL	Decimal	
Enable Output - System D				
External Access:	Read Only			
BCD0		BOOL	Decimal	
External Access:	Read/Write			
BCD1		BOOL	Decimal	
External Access:	Read/Write			
BCD2		BOOL	Decimal	
External Access:	Read/Write			
BCD3		BOOL	Decimal	
External Access:	Read/Write	5002	200	
dec		DINT	Decimal	
External Access:	Read Only	DIIVI	Decimal	
alarm L		BOOL	Decimal	
External Access:	Read/Write	Book	Domini	
alarm_H		BOOL	Decimal	
External Access:	Read/Write	BOOL	Decimal	
i e				

Data Type

Data type Name: cilinder_control

Description: rizeni zapadek valce

Size: 120 byte(s)

Name	Value	Data Type	Style	
EnableIn		BOOL	Decimal	
Enable Input - System Defined				
External Access:	Read Only			
EnableOut		BOOL	Decimal	
Enable Output - System Define	ed Parameter	B00E	Booman	
External Access:	Read Only			
senzor	D 1/37/ :	BOOL	Decimal	
External Access:	Read/Write			
num_balls		DINT	Decimal	
External Access:	Read/Write			
		Door	D : 1	
start External Access:	Read/Write	BOOL	Decimal	
External Access.	Kead/ Wille			
stop		BOOL	Decimal	
External Access:	Read/Write			
activate		BOOL	Decimal	
External Access:	Read/Write	BOOL	Decimal	
2	110000 11110			
zapadka_h		BOOL	Decimal	
External Access:	Read/Write			
zapadka_l		BOOL	Decimal	
External Access:	Read/Write	2002	2	
ball_cntr	D 1/377 :	DINT	Decimal	
External Access:	Read/Write			
ready		BOOL	Decimal	
External Access:	Read/Write			
		DOOL	Davim 1	
run External Access:	Read/Write	BOOL	Decimal	
External recess.	Read/ Wille			
dose_period		DINT	Decimal	
External Access:	Read/Write			
complete		BOOL	Decimal	
External Access:	Read/Write	BOOL	Decimal	
	·			
state	D 1/777.1	DINT	Decimal	
External Access:	Read/Write			

first_scan - Add-On-Defined Data Type Kulicky_BPC_PGA (Controller)

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Data type Name: first_scan

Description:

Size: 4 byte(s)

Name	Value	Data Type	Style	
EnableIn		BOOL	Decimal	
Enable Input - System Defin	ed Parameter			
External Access:	Read Only			
EnableOut		BOOL	Decimal	
Enable Output - System Defi	ined Parameter			
External Access:	Read Only			
S_FS		BOOL	Decimal	
External Access:	Read Only			

Data type Name: ventilator

Description: rizeni ventilatoru

Size: 172 byte(s)

Name	Value	Data Type	Style
EnableIn	· muc	BOOL	Decimal
Enable Input - System Defined Para	meter		
External Access:	Read Only		
EnableOut		BOOL	Decimal
Enable Output - System Defined Par			
External Access:	Read Only		
on		BOOL	Decimal
External Access:	Read/Write		
zh		BOOL	Decimal
External Access:	Read/Write		
clr_fault		BOOL	Decimal
External Access:	Read/Write		
fault		BOOL	Decimal
External Access:	Read/Write		
vent		BOOL	Decimal
External Access:	Read/Write		
max_delay		DINT	Decimal
External Access:	Read/Write		

Local

1756 Backplane, 1756-A17 : Local Modules

Local: [2] Emulate 5570 Kulicky_BPC_PGA

Type: Emulate 5570 Studio 5000® Logix Parent:

EmulateTM Controller

Vendor: Rockwell Automation/Allen-Bradley Vendor ID:

Slot:2Electronic Keying:Exact MatchRevision:33.11Status:StandbyModule Fault:OfflineInhibit FlagOff

1 Local: [3] 1756-MODULE SIM_I_O

Type: 1756-MODULE Generic 1756 Module Parent: Local Vendor: Rockwell Automation/Allen-Bradley Vendor ID: 1

Slot:3Electronic Keying:DisabledRevision:1.1Status:StandbyModule Fault:OfflineInhibit FlagOff

Use Unicast: No

Module Defined Value Data Type Configuration Tag

Local:3:C AB:1756 MODULE:C:0

.Data SINT[400]

Kulicky BPC PGA

mair	ı_F	BD

main FBD

Simulace **Simulace**

Alarmy

Routine Listing (Source Not Available) ________24 Simulace

Add-On Instruction Signature Listing

Add-On Instructions

bcd to dec

Parameter Listing _______30 Instruction Definition 33 cilinder control

Parameter Listing 35 Local Tag Listing 37 Logic Routine 38 first scan

ventilator

Module Properties

Logix Designer