ogram blocks in [OB1] Properties eral lee Main Number 1 Type OB Language LAD shering Automatic mation	Totally Inte Automatior	Troitai									
in [OB1] Properties eral e											
Properties aral te Main Number 1 Type OB Language LAD thering Automatic "Main Program Sweep (Cy- cle)" tion 0.1 User-defined ID Type OB Language LAD Comment Family Family Comment Family Comment Initial Call Bool Initial call of this OB Remanence Bool FTrue, if remanent data are available Type OB Language LAD Family Family Comment Initial Call General Solution S	ogram	blocks									
le Main Number 1 Type 0B Language LAD Abbring Automatic ***Transport of the Comment of the Comm	in [OB	1]									
Number 1 Type OB Language LAD Number 1 Type OB Language LAD Number Main Program Sweep (Cy- cle)* Ion 0.1 User-defined ID Number Data type Default value Comment Initial_Call Bool Initial call of this OB Remanence Bool =True, if remanent data are available Number True, if remanent data are available Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number Number		es									
"Main Program Sweep (Cycle)" ion 0.1 User-defined ID Default value Comment Initial_Call Bool Initial call of this OB Remanence Bool = True, if remanent data are available work 1: LED que avisa sobre a pressão no tanque separador	ne		1	Number	1		Туре	ОВ	Language	LAD	
"Main Program Sweep (Cycle)" Joser-defined ID The put Initial_Call Bool Initial call of this OB Remanence Bool — True, if remanent data are available The put The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are available The put Book True, if remanent data are availa		Automatic									
ion 0.1 User-defined ID le Data type Default value Comment Initial_Call Bool Initial call of this OB Remanence Bool = True, if remanent data are available constant	2	"Main Program S	Sweep (Cy-	Author			Comment		Family		
Data type Default value Comment Input Initial_Call Bool Remanence Bool Femp Constant Work 1: LED que avisa sobre a pressão no tanque separador **FC18** "Logica conjunta" Comment Comment Initial call of this OB —True, if remanent data are available —True, i	sion			Jser-defined I	ID						
Initial_Call Bool Initial call of this OB Remanence Bool =True, if remanent data are available constant work 1: LED que avisa sobre a pressão no tanque separador ##FC18 "Logica conjunta"		0.1				Dofault value		Commont			
Initial_Call Remanence Bool True, if remanent data are available constant work 1: LED que avisa sobre a pressão no tanque separador %FC18 "Logica conjunta"				рата туре		Detault value		Comment			
constant work 1: LED que avisa sobre a pressão no tanque separador **FC18** "Logica conjunta"		all		Bool							
work 1: LED que avisa sobre a pressão no tanque separador %FC18 "Logica conjunta"	Remane			Bool				=True, if remane	nt data are available		
work 1: LED que avisa sobre a pressão no tanque separador %FC18 "Logica conjunta"											
%FC18 "Logica conjunta"		LED que avisa		ssão no tor	2010 600	rador					
"Logica conjunta"	work 1:	LED que avisa	sobre a pre	55a0 110 tai	ique sepa	arauor					
"Logica conjunta"					%FC1	19					
					"Logica cor	njunta"					
				EN		ENO —		-			
				<u> </u>							
ı											
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iona valvula eneral	as - MS1 Properties							
ame	Aciona valvulas - MS1	Number 1		Туре	FC	Language	LAD	
umbering formation	Automatic							
le	0.1	Author User-defined ID		Comment		Family		
rsion	0.1		D - f l l		C			
me Input		Data type	Default value		Comment			
Output InOut								
Temp								
Constant								
Return	valvulas - MS1	Void						
	Válvula on/off da entra							
					"Variaveis"." Valvulas ON - MS1"			
					(s)——			

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Variaveis [DB1]

Variaveis Prope	rties						
General							
Name	Variaveis	Number	1	Туре	DB	Language	DB
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					
	0.1			Comment		Family	

a	Data type	Start value	Potoin	Accessible	\\/ri+	Vicible in	Satnaint	Supar	n/i	Comment
e	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	able	Visible in HMI engi- neering	Setpoint	Super sion	rVI-	Comment
Static										
Valvulas ON - MS1	Bool	false	False	True	True	True	False			
n	Int	0	False	True	True	True	False			
MS1	Bool	false	False	True	True	True	False			
Estado anterior - MS1	Bool	false	False	True	True	True	False			
Pisca LED1	Bool	false	False	True	True	True	False			
Inadmissivel	Bool	false	False	True	True	True	False			
Emergencia	Bool	false	False	True	True	True	False			
Reset delay 1	Bool	false	False	True	True	True	False			
Decisao automatica	Bool	true	False	True	True	True	False			
VC ON	Bool	false	False	True	True	True	False			
Reset delay VC 1	Bool	false	False	True	True	True	False			
Aciona compressores	Bool	false	False	True	True	True	False			
Reset delay VC 2	Bool	false	False	True	True		False			
Desliga compressores	Bool	false	False	True	True		False			
MS2	Bool	false	False	True	True		False			
Estado anterior - MS2	Bool	false	False	True	True		False			
Aciona VD2	Bool	false	False	True	True		False			
Transiciona etapa	Bool	false	False	True	True		False			
VD2 ON	Bool	false	False	True	True		False			
Desliga VD2	Bool	false	False	True	True		False			
Tempo estourado	Bool	false	False	True	True		False			
EB iniciada	Bool	false	False	True	True		False			
Verifica T igual TA	Bool	false	False	True	True		False			
Verifica PN e PSF6	Bool	false	False	True	True		False			
Estado anterior VD2	Bool	false	False	True	True		False			
EB	Bool	false	False	True	True		False			
EC	Bool	false	False	True	True		False			
EC iniciada	Bool	false	False	True	True		False			
Verifica PN e PNIim	Bool	false	False	True	True		False			
Aciona VC e compressores	Bool	false	False	True	True		False			
Desliga VC e compressores	Bool	false	False	True	True		False			
- · ·	Bool	false	False	True	True		False			
Estado anterior VC e comp	Bool	false	False	True	True		False			
VC e compressores ON		false			True		False			
Pisca LED3	Bool		False	True						
Decide etapa	Bool	false	False	True	True		False			
Etapa pausada	Bool	false	False	True	True		False			
Estado anterior BP	Bool	false	False	True	True		False			
BP toggled	Bool	false	False	True	True		False			
VD1 ON	Bool	false	False	True	True		False			
Reset delay VD1 VD2 VC	Bool	false	False	True	True		False			
T inadmissivel	Bool	false	False	True	True		False			
Pisca LED3 aux	Bool	false	False	True	True		False			
Realiza EB	Bool	false	False	True	True		False			
Realiza EC	Bool	false	False	True	True		False			
LED1 - Piscar	Bool	false	False	True	True		False			
LED1 - Continuo	Bool	false	False	True	True		False			
LED1 - Desligar	Bool	false	False	True	True		False			
Nao desliga BD	Bool	false	False	True	True		False			
Nao desliga BE	Bool	false	False	True	True		False			
Nao desliga Inad P	Bool	false	False	True	True		False			
Nao desliga Inad PS	Bool	false	False	True	True		False			
Nao desliga Inad PN	Bool	false	False	True	True		False			
Estado anterior - Emergencia	Bool	false	False	True	True	True	False			
Estado anterior - Toggle Inad P	Bool	false	False	True	True	True	False			
Estado anterior - Toggle Inad PS	Bool	false	False	True	True	True	False			
Estado anterior - Toggle Inad PN	Bool	false	False	True	True		False			
Toggle Emergencia	Bool	false	False	True	True	True	False			
	Bool	false	False	True	True		False			

Totally Integrated Automation Portal								
me	Data type	Start value	Retain	UA/Web API	Writ- Visible in able HMI engifrom neering HMI/ OPC UA/ Web API	Setpoint	Supervi- sion	Comment
Toggle Inad PS Toggle Inad PN	Bool Bool	false false	False False	True True	True True True True	False False		

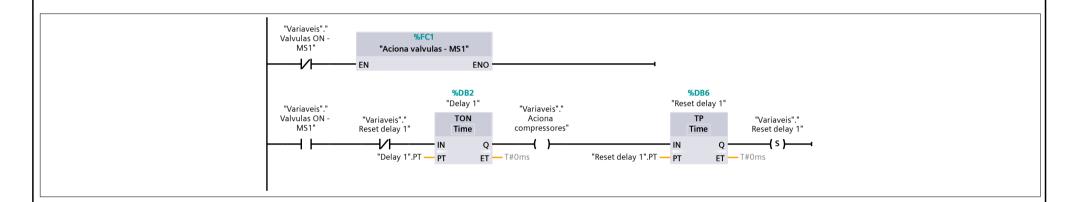
neral me mbering ormation e rsion me	Desliga valvulas - MS1						
ormation e rsion me		Number 2		Туре	FC	Language	LAD
e rsion me	Automatic					,, ,	
ne		Author		Comment		Family	
	0.1	User-defined ID					
nput		Data type	Default value		Comment		
Output							
nOut Гетр							
Constant							
Return	a Laula a MC1	Void					
	valvulas - MS1 Válvula on/off da entra						
					"Variaveis"." Valvulas ON - MS1" (R)		

Verifica valvulas 1 [FC3]

Verifica valvulas	s 1 Properties						
General							
Name	Verifica valvulas 1	Number	3	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input				
Output				
InOut				
Temp				
Constant				
▼ Return				
Verifica valvulas 1	Void			

Network 1:



neral me	Verifica valvulas 2	Number 4		Туре	FC	Language	LAD
mbering ormation	Automatic						
e rsion	0.1	Author User-defined ID		Comment		Family	
me		Data type	Default value		Comment		
Input Output							
InOut Temp							
Constant							
Return							
	valvulas 2	Void					
work 1:							
		"Variaveis" Valvulas ON	%FC2				
		MS1"	"Desliga valvulas	: - MS1" ENO			

Name	essores Properties			-	T.C.	-	l. a.c.
Numbering Information	Aciona compressores Automatic	Number 5		Туре	FC	Language	LAD
Title Version	0.1	Author User-defined ID		Comment		Family	
	0.1		Default value		Comment		
Name Input		Data type	Default value		Comment		
Output							
InOut							
Temp Constant							
▼ Return							
Aciona co	ompressores	Void					
letwork 1: (Compressor 1						
	·						
					%Q0.4 "C1"		
					(s)——		
					%Q0.5 "C2"		
					(s)		
					%O0 6		
					%Q0.6 "C3" (S) ——		
					(3)		
		l					
		"Variaveis".MS			Estado anterior - MS1"		
			"Variaveis"." Estado anterior -	ADD	"Variaveis"." Estado anterior -		
		"Variaveis".MS	2 MS2" A	LAUTO (INT) ENO	Estado anterior - MS2"		
			"Variaveis".n — IN1	OUT — "Variaveis".n			
			3 <u> </u>	: a			
					"Variaveis"." Aciona		
					compressores"		
					(,		
		I					

Author Comment Family	Work 2: Author Comment Family	Muthor Comment Family Author Comment Family	SUB Auto (Int) EN ENO OUT "Variaveis".n	Comment %Q0.4 "C1" {R} %Q0.5 "C2" {R} %Q0.6 "C3" {R}	-	
e Data type Default value Comment Designation Designa	e Data type Default value Comment put Data type Default value Comment put	e Data type Default value Comment pupt	SUB Auto (Int) EN ENO OUT "Variaveis".n	Comment %Q0.4 "C1" {R} %Q0.5 "C2" {R} %Q0.6 "C3" {R}	-	
Aput but put to the property of the property o	Aput but but but but but but but but but b	Aput but put to the property of the property o	SUB Auto (Int) EN ENO UT "Variaveis".n	"Variaveis"." Pesliga compressores"	1	
work 2:	butput emp constant Pesliga compressores Void work 1: Compressor 1 Suparity (F)	work 2: SUB National Street National Stre	Auto (Int) EN ENO Variaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
emp onstant eturn Desliga compressores Void work 1: Compressor 1 #00.4 **CT* R) **COS* *	emp onstant veturn Desliga compressores Void work 1: Compressor 1 **OO.4 **CT** R **OO.5 **CC** R **OO.6 * **OO.6 **CC** R **OO.6 *	emp onstant eturn Desliga compressores Void work 1: Compressor 1 **GO.4 **CT* **IR **GO.5 **CC* **IR **GO.6 **CC* **IR **GO.6 **CC* **IR **IR **IR **IR **IR **IR **I	Auto (Int) EN ENO Variaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
onstant eturn Desliga compressores Void work 1: Compressor 1 **Op.4 **C1* **(R)	Desliga compressores Void Desliga compressores Void Work 1: Compressor 1 Superior of the compressor of the compres	onstant eturn Desliga compressores Work 1: Compressor 1	Auto (Int) EN ENO Variaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
Desliga compressores Work 1: Compressor 1 **Control (R) **Contr	Work 1: Compressor 1 SQD4 CT CT CT CT CT CT CT C	Desliga compressores Work 1: Compressor 1 **Q0.4 **C1* **(R) **Q0.5 **C2* **(R) **Q0.6 **C3* **(R) **Variaveis*.n	Auto (Int) EN ENO Variaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
work 1: Compressor 1	work 1: Compressor 1	work 1: Compressor 1	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
Work 2: SUB	Work 2: SUB	Variaveis*.n No Out No O	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
Work 2: SUB Auto (int) "Variaveis".n "Variaveis".n "Variaveis".n Desliga compressores"	Work 2: SUB Auto (int) "Variaveis".n "Variaveis".n "Variaveis".n "Variaveis".n Desliga Compressores"	Work 2: SUB Auto (int) Variaveis*.n Variaveis*.n Variaveis*.n Variaveis*.n Compressores*	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
Work 2: SUB Auto (int) "Variaveis".n "Variaveis".n "Variaveis".n Desliga compressores"	Work 2: SUB Auto (int) "Variaveis".n "Variaveis".n "Variaveis".n "Variaveis".n Desliga Compressores"	Work 2: SUB Auto (int) Variaveis*.n Variaveis*.n Variaveis*.n Variaveis*.n Compressores*	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
work 2: SUB Auto (mt) "Variaveis".n "Variaveis".n Desliga compressores"	work 2: SUB Auto (Int) "Variaveis".n "Variaveis".* Desliga Compressores*	work 2: SUB Auto (Int) Variaveis*.n NI OUT Variaveis*.n Desliga Compressores*	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
work 2: SUB Auto (mt) "Variaveis".n "Variaveis".n Desliga compressores"	work 2: SUB Auto (Int) "Variaveis".n "Variaveis".* Desliga Compressores*	work 2: SUB Auto (Int) Variaveis*.n NI OUT Variaveis*.n Desliga Compressores*	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	"Variaveis"." Desliga compressores"	1	
"Variaveis".n IN1 OUT "Variaveis".n "Variaveis"." Desliga compressores"	"Variaveis".n — IN1 OUT — "Variaveis".n "Variaveis".n "Variaveis"." Desliga compressores"	"Variaveis".n "Variaveis".n "Variaveis".n "Variaveis".n Desliga compressores"	Auto (Int) EN ENO inaveis".n IN1 OUT "Variaveis".n	Desliga compressores"	•	
				()	•	
					•	

erifica co	essores Properties							
neral me	Verifica compressores	Numbe	er 7		Туре	FC	Language	LAD
mbering	Automatic	Number	;i /		Туре	i C	Language	LAD
ormation le		Author			Comment		Family	
rsion	0.1		efined ID					
ne Input		Data	ta type	Default value		Comment		
Output InOut								
Temp								
Constant Return								
	compressores	Voic	d					
work 1:								
			"Variaveis".n	%FC6 "Desliga compres	sores"			
			<>	EN	ENO —			
			0					

Include (Production Comment) Include (Product	
Re Author User-defined ID	
me Data type Default value Comment Input Output InOut Temp Constant Return Finaliza operacao - MS1 Void Variaveis** Desilga **FC7 Overfica compressores* **FC7 Verifica compressores* **FC7 Verifica compressores* **FC7 Verifica compressores*	
Input Output InOut Temp Constant Return Finaliza operacao - MS1 Void twork 1: **FC4 "Variaveis": Desliga compressores* **FC7 "Verifica compressores* **FC7 "Verifica compressores*	
Output InOut Temp Constant Return Finaliza operacao - MS1 Void twork 1: *FC4 *Verifica valvulas 2* EN Variaveis*.* Desliga compressores* Verifica compressores* Verifica compressores*	
Temp Constant Return Finaliza operacao - MS1 Void twork 1: **FC4** *Verifica valvulas 2"* EN ENO **Variaveis"." Desliga compressores" *Verifica compressores" *Verifica compressores"	
Constant Return Finaliza operacao - MS1 Void twork 1: **FC4** "Verifica valvulas 2" EN ENO "Variaveis"." Desliga compressores" Verifica compressores"	
Finaliza operacao - MS1 **Work 1: **FC4 "Verifica valvulas 2" EN ENO "Variaveis"." Desliga compressores" "Verifica compressores" "Verifica compressores"	

"Verifica valvulas 2" EN ENO "Variaveis"." Desliga compressores" "Verifica compressores"	
"Variaveis"." Desliga compressores" "Verifica valvulas 2" "Variaveis"." "Verifica compressores"	
"Variaveis"." Desliga compressores" "Verifica compressores"	
Desliga %FC7 compressores" "Verifica compressores"	
compressores" "Verifica compressores"	

Totally Integra Automation P							
Program b	locks						
MS1 - Opera	acao iniciada [FC9]						
MS1 - Operacao i	niciada Properties						
General							
Name	MS1 - Operacao iniciada	Number	9	Type	FC	Language	LAD

Comment

Family

					<i>J</i>	
Version	0.1	User-defined ID				
Name		Data type	Default value	Comment		
		Data type	Delault value	Comment		
Input						
Output						
InOut						
Temp						
Constant						
▼ Return						
MS1 - 0	Operacao iniciada	Void				

Network 1:

Numbering

Information Title Automatic

Author

%FC3 "Verifica valvulas 1" EN ENO
"Variaveis"." Aciona
——— EN ENO ————

eneral ame	MS1 - Operacao finalizada	Number 1	0	Туре	FC	Language	LAD
mbering ormation e	Automatic	Author		Commont		Family	
sion	0.1	Author User-defined ID		Comment		Family	
ie nout		Data type	Default value		Comment		
nput Dutput							
nOut 「emp							
onstant							
eturn MS1 - Op	peracao finalizada	Void					
work 1:							
			%FC4				
		— EN	erifica valvulas 2"				

OPERACAO - MS1 [FC11]

OPERACAO - MS	1 Properties						
General							
Name	OPERACAO - MS1	Number	11	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input				
Output				
InOut				
Temp				
Constant				
▼ Return				
OPERACAO - MS1	Void			

Network 1: LED que indica se há alguma operação em curso

Em operação

```
%FC9
"MS1 - Operacao iniciada"
— EN ENO

%FC14
"Estado inadmissivel"
— EN ENO
```

Network 2: LED que indica se há alguma operação em curso

Saindo da operação

```
%I0.1
"BD"
                                                                                                               %Q1.0
"LED2"
                                                                                                                -( R )--
                                                                                                         "Variaveis".MS1
    %I0.2
"BE"
                                                                                                                -( R )--
                                                                                                        "Variaveis"."
Estado anterior -
MS1"
"Variaveis".
Inadmissivel
                                                                                                                -( R )−
                                                                                                          "Variaveis"."
Reset delay 1"
                                                                                                               -( R }--
                                                                                                            "Delay 1".IN
                                                                                                               —( R )—
                                            %FC10
                              "MS1 - Operacao finalizada"
                                                                 ENO -
                               %10.2
"BE"
                                                                                                           "Variaveis".
Emergencia
                                                                                                                -( s )-
                           "Variaveis".
Inadmissivel
 "Variaveis".
Emergencia
                                            %FC17
                              "Protocolo de Emergencia"
```

Totally Integ Automation	rated Portal						
Program	blocks						
Obtem pre	ssao P [FC13]						
Obtem pressao General	P Properties						
Name Numbering	Obtem pressao P Automatic	Number 13		Type F	С	Language	LAD
Information Title	Automatic	Author		Comment		Family	
Version	0.1	User-defined ID		Comment		railily	
Name Input		Data type	Default value		Comment		
▼ Output							
P InOut		Real			Pressão obtida		
▼ Temp	ormalizada	Real			Pressão normalizada		
Constant	OTTTIATIZAÇIA	iveal			Tressao normanzada		
▼ Return Obtem pr	essao P	Void					
letwork 1:		,					
ormalização o	do valor de pressão lic	do do transmissor					
			NORM_X Int to Real				
			EN MIN	— ENO			
			' — VALUE	#"Pressao OUT — normalizada"			
		2764	MAX				
letwork 2:		ı					
	da pressão normalizad	da					
	au pressuo mormanza		SCALE_X				
			Real to Real	ENO-			
		0.0 #"Pressac normalizada	— MIN	OUT — #P			
		10.	MAX				
		<u> </u>					

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Estado inadmissivel [FC14]

Estado inadmiss	ivel Properties						
General							
Name	Estado inadmissivel	Number	14	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

	-			
Name	Data type	Default value	Comment	
Input				
Output				
InOut				
▼ Temp				
Р	Real		Pressão P	
PS	Real		Pressão PS	
PN	Real		Pressão PN	
Constant				
▼ Return				
Estado inadmissivel	Void			

Network 1:

```
"Obtem pressao P"

EN

EN

ENO

P

#P

**FC15

"Obtem pressao PS"

EN

EN

EN

PS

#PS

**FC16

"Obtem pressao PN"

EN

EN

#PS

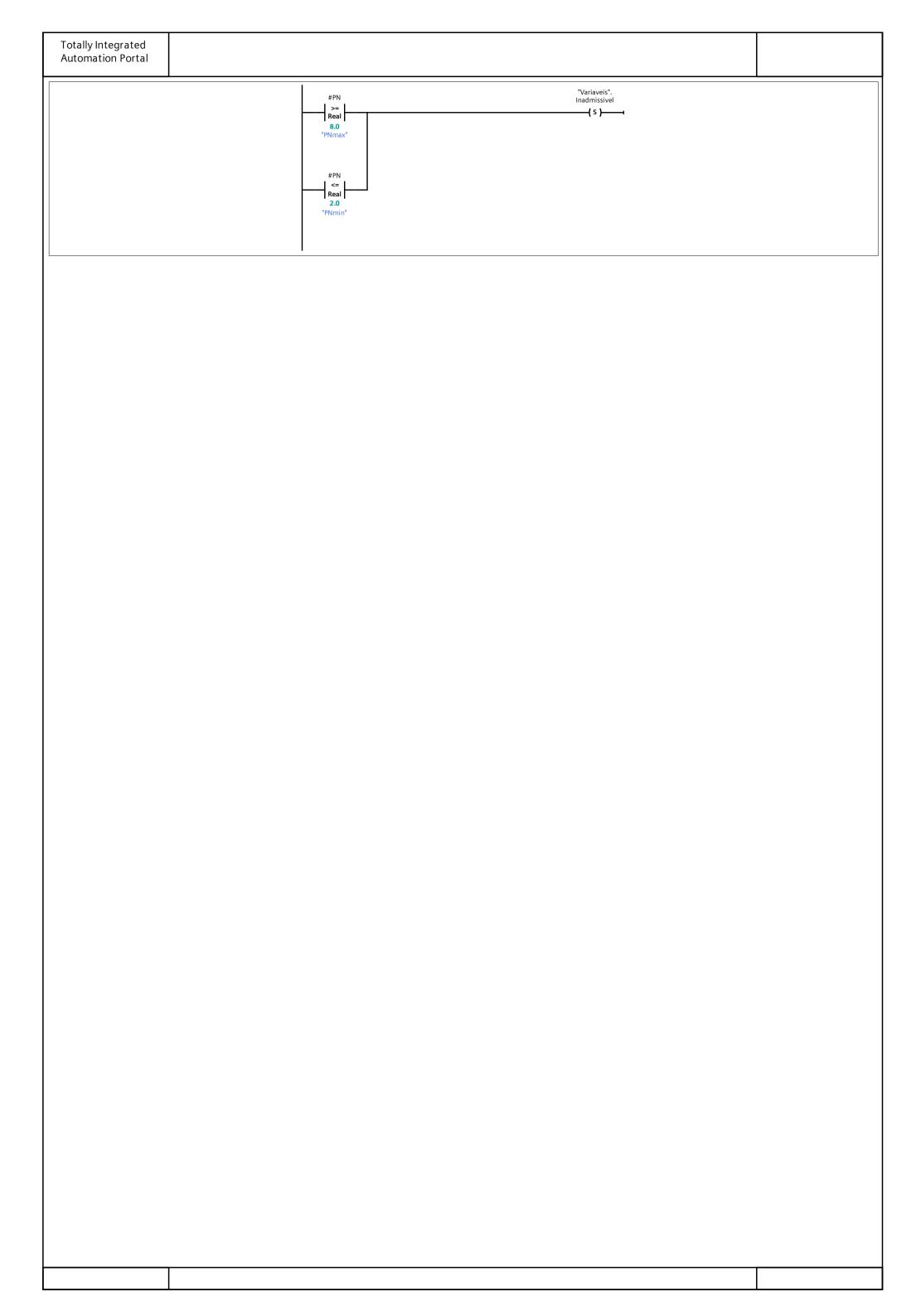
#PS
```

Network 2:

```
#P | Transmissive | Real | Real | 2.0 | Pmin"
```

Network 3:

Network 4:



Totally Integrated							
Automation Portal							
Automation Fortal							
rogram block	/s						
btem pressao I							
btem pressao PS Prop eneral	perties						
ame Obtem umbering Autom		lumber 15		Type F	C	Language	LAD
formation						 - "	
tle ersion 0.1		luthor User-defined ID		Comment		Family	
ame		Data type	Default value		Comment		
Input Output							
PS		Real			Pressão obtida		
InOut Temp							
Pressao normaliza	ada	Real			Pressão normalizada		
Constant Return							
Obtem pressao PS	5	Void					
etwork 1:							
ormalização do valor	r de pressão lido do tra	nsmissor					
			NORM_X Int to Real				
			— EN —	ENO			
		%IW114	— MIN — VALUE	#"Pressao OUT — normalizada"			
			— VALUE — MAX				
etwork 2:							
cale do valor da press	são normalizada						
		1	SCALE_X Real to Real				
		0.0	EN MIN	OUT —#PS			
		#"Pressao normalizada"		001			
			— MAX				
		<u> </u>					

Totally Integr Automation I	rated Portal								
Program l	hlocks								I
Obtem pre		[FC16]							
Obtem pressao General	PN Propert	ies							
Name Numbering	Obtem pro	essao PN	Number	16		Туре	FC	Language	LAD
Information Title			Author			Comment		Family	
Version	0.1		User-defined II	D					
Name Input			Data type		Default value		Comment		
▼ Output									
PN InOut			Real				Pressão obtida		
▼ Temp									
Pressao no Constant	ormalizada		Real				Pressão normalizada		
▼ Return									
Obtem pro	essao PN		Void						
Network 1:									
					NORM_X Int to Real				
				0 -	EN — MIN	#"Pressao			
				%IW116 "PN" –	VALUE	OUT — normalizada"			
				27648 –	— MAX				
_			I						
Network 2:									
					SCALE_X Real to Real				
					— EN — MIN	OUT — #PN			
				#"Pressao normalizada" =	VALUE				
				10.0 =	— MAX				
			ı						

Protocolo de Emergencia Automatic 0.1 de Emergencia ED que indica o estado	Author User-defined ID Data type Void	Default value	Type	FC	Language	LAD
0.1 de Emergencia	Data type	Default value	Comment	Comment	Family	
de Emergencia	Data type	Default value	Comment	Comment	Family	
de Emergencia	Data type	Default value		Comment		
		Default value		Comment		
	Void					
	Void					
	Void					
	Void					
	\/oid					
ED que indica o estado						
				%Q1.1 "LE" (s) %Q8.0 "H" (s)		
					"H"	"H"

Totally Integrated Automation Portal	

Logica conjunta [FC18]

Logica conjunt	a Properties						
General							
Name	Logica conjunta	Number	18	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input				
Output				
InOut				
▼ Temp				
Р	Real			
PS	Real			
PN	Real			
Constant				
▼ Return				
Logica conjunta	Void			

Network 1:

Chave seletora na posição 1

Network 2:

Chave seletora na posição 2

Network 3:

```
"Decide LED1"

EN ENO

**FC14

"Estado inadmissive!"

EN ENO
```

Network 4:

```
"Obtem pressao P"

EN

EN

SHC15

"Obtem pressao PS"

EN

EN

PS

#PS

#PS

#FS

WFC16

"Obtem pressao PN"

EN

PN

#PN
```

Network 5:

Totally Integrated **Automation Portal** "Variaveis"." "Variaveis"." %I0.3 "CS1" %I0.4 "CS2" Estado anterior Toggle Inad P" "Variaveis"." Toggle Inad P" Estado anterior Toggle Inad P" #P -(s)-Real 8.0 "Pmax" %I0.3 "CS1" %I0.4 "CS2" #P <= Real **2.0** "Pmin' %DB17 "Compressores OFF - Inad P" %I0.3 "CS1" %I0.4 "CS2" "Variaveis"." Toggle Inad P" TOF "Variaveis"."Nao desliga Inad P" Time **→** Q· ET — T#0ms "Compressores OFF - Inad P".PT — PT "Variaveis"." Toggle Inad P" -(R)--

Network 6:

```
"Variaveis"."
                                                                                                                                     "Variaveis"."
                                                                                                       "Variaveis"."
Toggle Inad PS"
%I0.3
"CS1"
                           %I0.4
"CS2"
                                                                          Estado anterior -
Toggle Inad PS"
                                                                                                                                  Estado anterior -
Toggle Inad PS"
                                                        #PS
                                                     >=
Real
                                                     "PSmax"
%I0.3
"CS1"
                           %I0.4
"CS2"
                                                       #PS
                                                     <=
Real
                                                        2.0
                                                                                  %DB21
                                                                            "Compressores
OFF - Inad PS"
                                                                                                                                   "Variaveis"."Nao
desliga Inad PS"
                                                   "Variaveis"."
%10.3
                           %10.4
                                                Toggle Inad PS"
                           "CS2"
                                                                                   Time
                                                                                                                                          Q
                                                                                            ET — T#0ms
                                                 "Compressores
OFF - Inad PS".PT __
                                                                                                                                   "Variaveis"."
Toggle Inad PS"
```

Network 7:

```
"Variaveis"."
                                                                                                                               "Variaveis"."
%I0.3
"CS1"
                          %I0.4
"CS2"
                                                                       Estado anterior -
Toggle Inad PN"
                                                                                                 "Variaveis"."
Toggle Inad PN"
                                                                                                                           Estado anterior -
Toggle Inad PN"
                                                     #PN
                                                   Real
                                                     8.0
                                                  "PNmax"
%I0.3
"CS1"
                          %I0.4
"CS2"
                                                     #PN
                                                   <=
Real
                                                  2.0
"PNmin"
                                                                             %DB22
                                                                         "Compressores
                                                                        OFF - Inad PN"
                                             "Variaveis"."
Toggle Inad PN"
                                                                         TOF
                                                                                                                           "Variaveis"."Nao
desliga Inad PN"
%I0.3
"CS1"
                         %I0.4
"CS2"
                                                                              Time
                                                                                       Q·
                                              "Compressores
OFF - Inad PN".PT — PT
                                                                                      ET — T#0ms
                                                                                                                               "Variaveis"."
                                                                                                                            Toggle Inad PN"
                                                                                                                                   -( R )--
```

Network 8:

Totally Integrated **Automation Portal** %I0.2 "BE" "Variaveis". Emergencia (s)—— "Variaveis". Inadmissivel %FC17 "Variaveis". "Protocolo de Emergencia" Emergencia ENO -Network 9: %DB20 "Compressores OFF - BD" TOF %I0.3 "CS1" **%I0.4** "CS2" **%I0.1** "BD" "Variaveis"."Nao desliga BD" Time ET — T#0ms "Compressores OFF - BD".PT — PT "Variaveis"." Estado anterior -Emergencia" "Variaveis"." Estado anterior -Emergencia" "Variaveis"." Toggle Emergencia" %I0.3 "CS1" **%I0.4** "CS2" %I0.2 "BE" %DB18 "Compressores OFF - BE" "Variaveis"." Toggle Emergencia" "Variaveis"."Nao desliga BE" TOF Time Q. ET — T#0ms "Compressores OFF - BE".PT — PT "Variaveis"." Toggle Emergencia" "Variaveis"."Nao desliga Inad P" "Variaveis"."Nao desliga Inad PN" %I0.3 "CS1" "Variaveis"."Nao desliga BE" "Variaveis"."Nao desliga BD" "Variaveis"."Nao desliga Inad PS" "Variaveis"." Reset delay 1" **%I0.4** "CS2" %FC7 "Verifica compressores" -/-- EN ENO -Network 10:

Totally Integrated **Automation Portal** "Variaveis". Emergencia "Variaveis".MS1 **-(** R **)**− "Variaveis".MS2 **-(** R **)**− %I0.5 "BR" "Variaveis". Inadmissivel -(R)-"Variaveis". Emergencia -(R)--"Variaveis"." Estado anterior -Emergencia" -(R)-"Variaveis"." Estado anterior -Toggle Inad P" **-(** R **)**--"Variaveis"." Estado anterior -Toggle Inad PS" **-(** R **)**-"Variaveis"." Estado anterior -Toggle Inad PN" **-(** R **)**-"Variaveis"." Toggle Inad P" -(R }------"Variaveis"." Toggle Inad PS" **-(** R **)**--"Variaveis"." Toggle Inad PN" –(R)—— "Variaveis"."Nao desliga BD" -(R)-----"Variaveis"."Nao desliga BE" -(R)-"Variaveis"."Nao desliga Inad P" -(R }-----"Variaveis"."Nao desliga Inad PS" -(R)-----"Variaveis"."Nao desliga Inad PN" -(R)-%FC20 "Sai Protocolo de Emergencia" ENO -

Totally Integ Automation	rated Portal							
Program	blocks							1
Decide LEI		1						
Decide LED1 Pr General								
Name Numbering	Decide LEI Automatic		Number	19	Type F	C	Language	LAD
Information Title			Author		Comment		Family	
Version	0.1		User-defined ID					
Name Input			Data type	Default value		Comment		
Output InOut								
▼ Temp								
P Constant			Real			Pressao obtida no tanque	separador	
▼ Return								
Decide LE	ED1		Void					
Network 1:								
			<u> </u>					
						%DB19 "Decide LED1 - DB"		
			%FC* "Obtem pr	ressao P"		%FB1 "Decide LED1 - FB"		
			— EN	P #P	#P — P	ENO	-	
			"Variavi	reis"."LED1 "Variaveis"."Pisca Piscar" LED1"	"LED1 ON".PT PT E" **DB5 "LED1 OFF" **Q0.7 "LED1" IN O	"Variaveis"."Pisca LED1" T #Oms		
Network 3: I	_ED que a	visa sobre a pre	essão no tanq	que separador				
			"Variav	reis"."LED1 ontinuo"		%Q0.7 "LED1"		
				1 ———		(s)——		
Network 4: I	_ED que a	visa sobre a pro	essão no tanq	que separador				
			"Variavo	veis"."LED1 esligar"		%Q0.7 "LED1"		
				d		(R)———		
			l					
	1							

Number 20 Type FC Language LAD Automatic Transition 0.1 Data type Default value Dutput Transition Comment Dutput Transition Comment Dutput Transition Comment Dutput Transition Comment Doutput Transition Comment Transition Commen	i Protocolo c	olo de Emergencia [de Emergencia Properties						
Automatic Muthor Comment Family	neral me	Sai Protocolo de Emergenci	a Number 20		Type	FC	Language	LAD
Author User-defined ID User-de	mbering	Automatic						
Data type Default value Comment Dutput Dutput Doutput	e				Comment		Family	
nput Dutput nOUt emp Constant Return Sai Protocolo de Emergência work 1: LED que indica o estado de Emergência **Q1.1** **LED que indica o estado de Ferencia **Q1.1** **LED que indica o estado de Ferencia **Q1.1** **LED que indica o estado de Ferencia		0.1						
Output nOut remp Constant Return Sai Protocolo de Emergencia work 1: LED que indica o estado de Emergência **Q1.1** **\frac{1}{1}{1}{1}{1}{1}{1}{1}{1}{1}{1}{1}{1}{			Data type	Default value		Comment		
Temp Constant Return Sai Protocolo de Emergencia Void work 1: LED que indica o estado de Emergência **Q1.1** **LE** {*R} **Q8.0** **IF** **Q8.0** **Q8.0** **IF** **Q8.0**	Output							
Constant Return Sai Protocolo de Emergencia Work 1: LED que indica o estado de Emergência *Q1.1 *LEF* (R) *Q8.0 *H*								
Sai Protocolo de Emergencia Work 1: LED que indica o estado de Emergência **Q1.1 **LE** (R) **Q8.0 **H"	Constant							
work 1: LED que indica o estado de Emergência	Return							
%Q1.1 "LE" (R) %Q8.0 "H"	Sai Proto	ocolo de Emergencia	Void					
—————————————————————————————————————								
%Q8.0 "H"						%Q1.1 "LE"		
"H"						(R)		
						"H"		

Totally Integr Automation I	rated Portal							
Program	blocks							
Obtem pre	ssao PS	F6 [FC21]						
Obtem pressao General	PSF6 Prope	erties						
Name Numbering	Obtem pr		Number 21		Type F	C	Language	LAD
Information Title			Author		Comment		Family	
Version	0.1		User-defined ID					
Name Input			Data type	Default value		Comment		
▼ Output PSF6			Real			Pressão obtida		
InOut ▼ Temp								
Pressao no	ormalizada		Real			Pressão normalizada		
Constant ✓ Return								
	ressao PSF6		Void					
Network 1:	do valor do	e pressão lido do ti	ransmissor					
.o.manzação (ao valoi de	- pressuo nuo uo ti		NORM_X Int to Rea				
				EN	ENO -			
				0 — MIN W120 PSF6" — VALUE	#"Pressao OUT — normalizada"			
				27648 <mark>— MAX</mark>				
lotwork 2:			ı					
letwork 2: cale do valor o	da pressão	normalizada						
				SCALE_X				
				Real to Real O.O — MIN	ENO —#PSF6			
			#"Pr normal	essao izada" <mark>— VALUE</mark>	001 — #1310			
				10.0 — MAX				
			· ·					

Automation Portal					
ogram blocks otem temperatura T [FC22]					
otem temperatura T Properties					
General Iame Obtem temperatura T	Number 22	Туре	FC	Language	LAD
lumbering Automatic	Trainiber 22	Турс	ı C	Language	LIND
nformation itle	Author	Comment		Family.	
ersion 0.1	User-defined ID	Comment		Family	
lame	Data type	Default value	Comment		
Input	Data type	Jerault value	Comment		
▼ Output					
Т	Real		Temperatura obtida		
InOut					
Temp					
Temperatura normalizada	Real		Temperatura normalizada		
Constant ✓ Return					
Obtem temperatura T	Void				
ormalização do valor de temperatura l		OUT — normaliza VALUE	atura da"		
Network 2: Scale do valor da temperatura normaliza	ada				
		SCALE_X Real to Real			

Obtem temperatura TA [FC23] Distem temperatura TA Properties General Name Obtem temperatura 17 Number 23 Type FC Language IAD Numbering Authoratic information Title Author Title Outselfind ID Comment Family Version 0.1 Ourselfind ID Comment Input Output I A Real Femperatura obtida Infout Temperatura obtida Infout Temperatura obtida Real Femperatura obtida Infout Temperatura obtida Infout Temperatura obtida Infout Network 1: Normalização do valor de temperatura lido do transmissor Network 2: Scale do valor da temperatura normalizada Sout. X Normalização do valor da temperatura normalizada Sout. X Normalização do valor da temperatura normalizada Sout. X Normalização do valor da temperatura normalizada	Totally Integ										
Sistem temperatura TA [FC23] Sistem temperatura TA Properties Sistem temperatura TA Properties Sistem temperatura TA Properties Sistem temperatura TA Properties Sistem temperatura TA Number 23 Type FC Language LaD Sistem temperatura TA Number 23 Type FC Language LaD Sistem temperatura TA Sistem temperatura TA Number 23 Type T											
Alame Obtem temperatura TA Number 23 Type FC Language LAD Numbering Automatic Relations of Comment Relations of Relatio	Obtem ten	nperatura TA [FC23	3]								
Name Obtem temperatura TA Number 23 Type FC Language IAD Industrial Comment Itle Author Itle On Itle O		atura TA Properties									
Authoring normation information (Parsion 0.1 User-defined ID		Ohtem temperatura TA	Number	23		Type	FC		Language	LAD	
Author User-defined ID Version 0.1 Value Input Voltput TA Real Temperatura normalizada Real Temperatura normalizada Real Void			Number	23		Туре	I C		Language	LAD	
Name	nformation										
Input Votput TA Real Inout Temperatura normalizada Inout Temperatura normalizada Real Constant Return Obtem temperatura TA Void NoteMark Vetwork 1: Normalização do valor de temperatura lido do transmissor Normalização do valor de temperatura normalizada Normalização do valor de temperatura lido do transmissor						Comment			Family		
Input ✓ Output TA Real Temperatura obtida Inout ✓ Temp Temperatura normalizada Constant ✓ Return Obtem temperatura TA Void Vo	/ersion	0.1	User-defined ID								
TA Real Temperatura obtida InOut ▼ Temp Temperatura normalizada Real Temperatura normalizada Constant ▼ Return Obtem temperatura TA Void Setwork 1: Iormalização do valor de temperatura lido do transmissor NORMA X Int to Real PTemperatura NORMA X Int to Real OUT - NORMA X Int to Real OUT - NORMA X Int to Real SOLLE X Real Temperatura OUT - NORMA X Int to Real SOLLE X Real Temperatura OUT - NORMA X Int to Real PTemperatura OUT - NORMA X Int to Real OUT - NORMA X INT TEMPERATURA OUT - NORMA X INT	lame		Data type		Default value		Comr	nent			
TA Real Temperatura obtida InOut ▼ Temp Temperatura normalizada Real Temperatura normalizada Constant ▼ Return Obtem temperatura TA Void Setwork 1: Iormalização do valor de temperatura lido do transmissor NORMA_X Inst to Real NORMA_X Inst to Real OUT F*Temperatura OUT											
InOut ▼ Temp Temperatura normalizada Real Constant Return Obtem temperatura TA Void Normalização do valor de temperatura lido do transmissor											
Temperatura normalizada Real Temperatura normalizada Constant ▼ Return Obtem temperatura TA Void Network 1: Ilormalização do valor de temperatura lido do transmissor NORMLX Int to Real			Real				Temp	eratura obtida			
Temperatura normalizada Constant Return Obtem temperatura TA Void Setwork 1: Iormalização do valor de temperatura lido do transmissor NORM X Int To Real **Temperatura OUT **Temperatura normalizada* SCALE X Real to Real **Temperatura normalizada* VALUE **Temperatura normalizada* **VALUE **Temperatura normalizada* VALUE **VALUE **V											
Constant Return Obtem temperatura TA Void Norm X Int to Real											
Network 1: Normalização do valor de temperatura lido do transmissor NORM_X Int to Real NORM_X Int to R		tura normalizada	Real				Temp	eratura normalizada			
Obtem temperatura TA Void Setwork 1: Iormalização do valor de temperatura lido do transmissor NORM_X Int to Real O MIN SWINTIZE 17A VALUE 27648 MAX SCALE_X Real to Real SCALE_X Real to Real O T ATA OUT ATA OUT ATA OUT ATA											
Normalização do valor de temperatura lido do transmissor NORM_X Int to Real OMIN		TA	\/ a : a								
lormalização do valor de temperatura lido do transmissor NORM_X Int to Real EN WINTE OUT *Temperatura OUT normalizada* VALUE SCALE_X Real to Real *Temperatura OUT *Temperatura OUT *Temperatura NORM_X NORM_X Int to Real *Temperatura OUT *Temperatura NORM_X NORM_X Int to Real *Temperatura OUT *Temperatura NORM_X NORM_X Int to Real *Temperatura NORM_X NORM_X NORM_X Int to Real *Temperatura NORM_X NORM_X NORM_X Int to Real *Temperatura NORM_X	Obtem te	emperatura rA	voiu								
Network 2: Scale do valor da temperatura normalizada SCALE_X Real to Real #"Temperatura normalizada" VALUE			_	0	Int to Real						
Scale do valor da temperatura normalizada SCALE_X Real to Real O.O — MIN W"Temperatura normalizada" — VALUE				%IW122 "TA" —	VALUE	#"Temperatur OUT — normalizada"	ra				
Scale do valor da temperatura normalizada SCALE_X Real to Real #*Temperatura normalizada" VALUE VALUE	Network 2:		<u> </u>								
SCALE_X Real to Real O.O — MIN OUT — #TA #"Temperatura normalizada" — VALUE		d	. ما م								
Real to Real O.O — MIN OUT — #TA #"Temperatura normalizada" — VALUE	scale do valor	da temperatura normaliza	nda 								
0.0 — MIN OUT — #TA #"Temperatura normalizada" — VALUE					SCALE_X Real to Real						
#"Temperatura normalizada" — VALUE			-								
normalizada" — VALUE			#"Te	mperatura		OUT — #TA					
MAX			nc	rmalizada" —							
				10.0 —	MAX						

iona VD2 Pr	O2 [FC24] operties								
neral me	Aciona VD2	Nun	nber 24		Туре	FC	Language	LAD	
mbering	Automatic	, Tu			1,500	ı C	Language	L. (D	
ormation le		Autl	hor		Comment		Family		
rsion	0.1		r-defined ID				,		
ne			Data type	Default value		Comment			
nput									
Output InOut									
Temp									
Constant									
Return									
Aciona V	/D2		Void						
						(S)			

ies sliga VD2 tomatic ula on/off da linha	Void	fined ID	Default value	Comment	Comment "Q0.3 "VD2" (R) "Variaveis"."VD2 ON" (R)	Family	LAD
tomatic	Author User-def Data	fined ID	Default value		Comment "Q0.3 "VD2" (R) "Variaveis"."VD2 ON"		LAD
	User-def Data Void	a type	Default value	Comment	%Q0.3 "VD2" {R} "Variaveis"."VD2 ON"	Family	
	User-def Data Void	a type	Default value	Comment	%Q0.3 "VD2" {R} "Variaveis"."VD2 ON"	Family	
	Data Void	a type	Default value		%Q0.3 "VD2" {R} "Variaveis"."VD2 ON"		
ula on/off da linha	Void		Default value		%Q0.3 "VD2" {R} "Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha					"Variaveis"."VD2 ON"		
ula on/off da linha	direta (se	egunda)			"Variaveis"."VD2 ON"		
		ı					

Totally Inte Automation										
Program blocks Etapa pausada [FC26] Etapa pausada Properties										
General Name	Etapa pausada	Number	26		Туре	=C	Language	LAD		
Numbering	Automatic				. 7 - 1					
Information										
Title		Author			Comment		Family			
Version	0.1	User-defined ID						'		
Name		Data type		Default value		Comment				
Input		,								

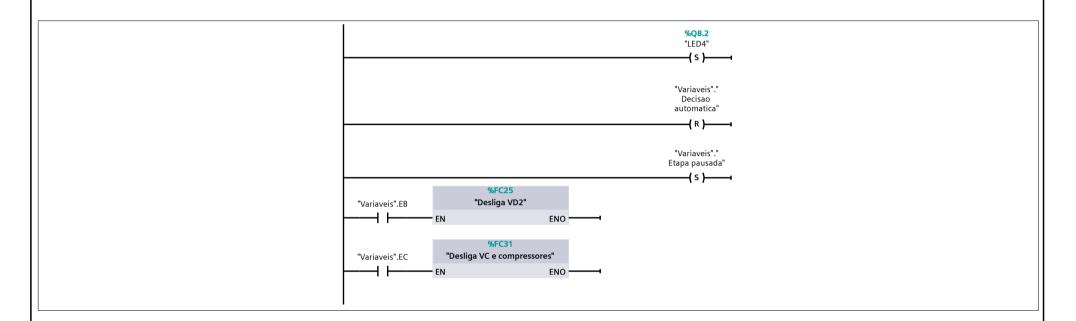
Network 1: LED que indica o estado de etapa pausada

Void

Output
InOut
Temp
Constant

Return

Etapa pausada



Totally Integrated Automation Portal										
Program blocks										
Etapa retomada [FC27]										
Etapa retomada Properties General										
Name Etapa retoma Numbering Automatic Information	Nu Nu	mber	27		Туре	FC		Language	LAD	
Title Version 0.1		thor er-defined ID)		Comment			Family		
Name	,	Data type	·	Default value		Comment				
Input Output InOut										
Temp Constant										
▼ Return Etapa retomada		Void								
Network 1: LED que indi	ca o estado de		sada	1		l				
		1								
		_				%QI "LEC ————————————————————————————————————	3.2 }			
						"Variav Decis autom	ao			
						(s)			
						"Variav Etapa pa —————————————————————————————————	eis"." usada" }			
			aveis".EB			"Variave inicia	da"			
						"Variave	is"."EC			
			aveis".EC			inicia ———————————————————————————————————)—— •			
		I								

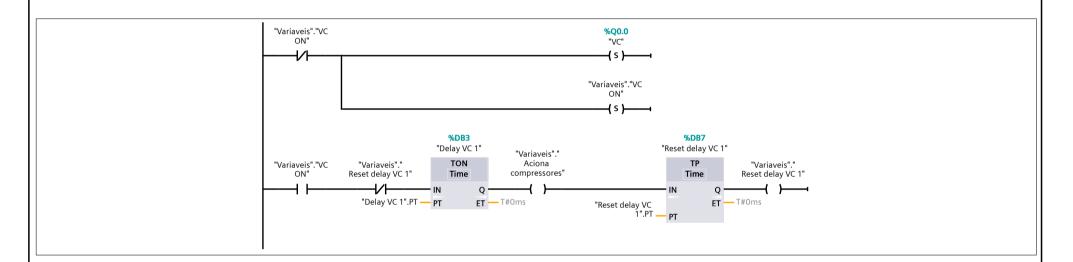
Totally Integrated	
al	

Verifica VC 1 [FC28]

Verifica VC 1 Pr	operties						
General							
Name	Verifica VC 1	Number	28	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Тетр			
Constant			
▼ Return			
Verifica VC 1	Void		

Network 1: Válvula on/off da entrada do sistema de compressores

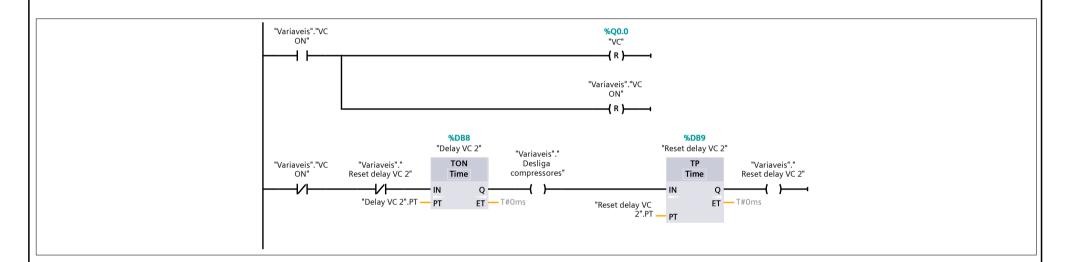


Verifica VC 2 [FC29]

Verifica VC 2 Properties									
General									
Name	Verifica VC 2	Number	29	Туре	FC	Language	LAD		
Numbering	Automatic								
Information									
Title		Author		Comment		Family			
Version	0.1	User-defined ID							

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Тетр			
Constant			
▼ Return			
Verifica VC 2	Void		

Network 1: Válvula on/off da entrada do sistema de compressores



Totally Integra Automation P									
Program blocks									
Aciona VC e compressores [FC30]									
Aciona VC e compressores Properties									
General									
Name	Aciona VC e compressores	Number	30	Туре	FC	Language	LAD		

Version 0.	.1	User-defined ID			
Name		Data type	Data type Default value		Comment
Input					
Output					
InOut					
Temp					
Constant					
▼ Return					
Aciona VC e d	compressores	Void			

Comment

Family

Network 1:

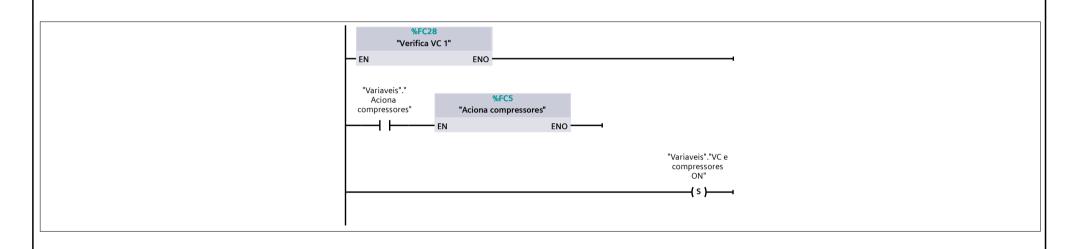
Numbering

Information

Title

Automatic

Author



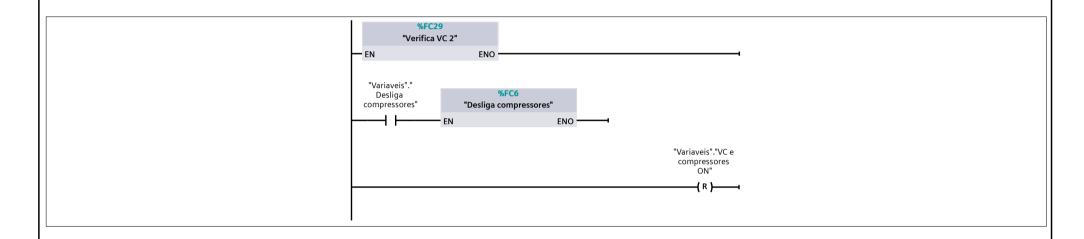
Totally Integrated Automation Portal	

Desliga VC e compressores [FC31]

Desliga VC e compressores Properties							
General							
Name	Desliga VC e compressores	Number	31	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input				
Output				
InOut				
Temp				
Constant				
▼ Return				
Desliga VC e compressores	Void			

Network 1:



Totally Integrated	
Automation Portal	rtal

EB - Etapa iniciada [FC32]

EB - Etapa inicia	da Properties						
General							
Name	EB - Etapa iniciada	Number	32	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input	Data type	Delault value	Comment	
·				
Output				
InOut				
▼ Temp				
Т	Real		Temperatura no nó estendido	
TA	Real		Temperatura ambiente	
PN	Real		Pressão no nó estendido	
PSF6	Real		Pressão do tanque de SF6	
Threshold ambiente	Real		(1 - beta)*TA	
Threshold PSF6	Real		(1 + gamma)*PSF6	
Constant				
▼ Return				
EB - Etapa iniciada	Void			

Network 1:

Network 2:

```
"Variaveis"."
Verifica PN e
PSF6"
"Variaveis"."
                                                              %FC22
                                                                                                                                                            CALCULATE
Decisao
automatica"
                    "Variaveis"."
Verifica T igual TA"
                                                     "Obtem temperatura T"
                                                                                                                                                                                                                         >= Real
                                                                                                                                                                                                                                                   \leftarrow
                                                                                 ENO -
                                                                                                                                                                                 ENO
                                                                                    T — #T
                                                                                                                                                                                                                       #"Threshold
ambiente"
                                                                                                                                                OUT := (IN1 - IN2) * IN3
                                                                                                                                                                                                                                               "Variaveis"."
                                                                                                                                     1.0 — IN1
                                                                                                                                                                                                                                            Verifica T igual TA"
                                                                                                                                                                                          #"Threshold
— ambiente"
                                                    "Obtem temperatura TA"
                                                                                                                                                                                                                                                   _( R )_
                                                                                                                                                                                 OUT ·
                                                                                                                                    0.05
                                                                                 ENO -
                                                                                                                                   "beta" —
                                                                                   TA — #TA
                                                                                                                                     #TA — IN3 🔒
                      "Variaveis"."
Verifica PN e
PSF6"
"Variaveis"."
Decisao
automatica"
                                                               %FC16
                                                                                                                                                            CALCULATE
                                                                                                                                                                                                                                               "Variaveis"."
Aciona VD2"
                                                                                                                                                                                                                            #PN
                                                        "Obtem pressao PN"
                                               EN
                                                                                 ENO
                                                                                                                                                                                                                            Real
                                                                                   PN — #PN
                                                                                                                                                                                                                       #"Threshold
PSF6"
                                                                                                                                                OUT := (IN1 + IN2) * IN3
                                                                                                                                                                                                                                              "Variaveis"."
Verifica PN e
PSF6"
                                                               %FC21
                                                                                                                                      1.0 — IN1
                                                                                                                                                                                         #"Threshold
— PSF6"
                                                      "Obtem pressao PSF6"
                                                                                                                                                                                 OUT ·
                                                                                                                                    0.05
                                                                                                                                "gamma" —
                                                                                                                                                                                                                                                   -( R )-
                                              - EN
                                                                                 ENO
                                                                                                                                             - IN2
                                                                                 PSF6 — #PSF6
                                                                                                                                   #PSF6 — IN3 🔒
                                                                                                                                                                                                                                               "Variaveis"."
                                                                                                                                                                                                                                             Estado anterior
VD2"
                                                                                                                                                                                                                                               "Variaveis"."
Transiciona
etapa"
                                                                                                                                                                                                                            #PN
                                                                                                                                                                                                                          <=
Real
                                                                                                                                                                                                                       #"Threshold
PSF6"
                                                                                                                                                                                                                                              "Variaveis"."
Verifica PN e
PSF6"
                                                                                                                                                                                                                                                   -( R )-
                                                                                                                                                                                                                                            "Variaveis"."
Estado anterior
VD2"
                                                                                                                                                                                                                                                   -( R )-
```

Network 3:

Totally Integrated **Automation Portal** "Variaveis"." Decisao automatica" %FC24 "Variaveis"." Aciona VD2" "Variaveis"." Aciona VD2" "Aciona VD2" -(R)-- EN ENO "Variaveis"." Decisao automatica" %FC22 "Variaveis"."VD2 ON" "Obtem temperatura T" EN ENO -T — #T **%DB10**"Contagem EB" "Variaveis"." Tempo estourado" TON Time "Contagem EB".PT — PT ET — T#0ms "Variaveis"." Decisao automatica" "Variaveis"."VD2 ON" "Variaveis"." Desliga VD2" #T <= Real **4.0** "Tlim" "Variaveis"." Tempo estourado" —(R)—— "Variaveis"." Tempo estourado" "Variaveis"." Decisao automatica" "Variaveis"." Desliga VD2" %FC25 "Variaveis"." Desliga VD2" "Desliga VD2" - EN ENO -**-(** R **)**− "Variaveis"." Estado anterior VD2" **-(** s **)**-

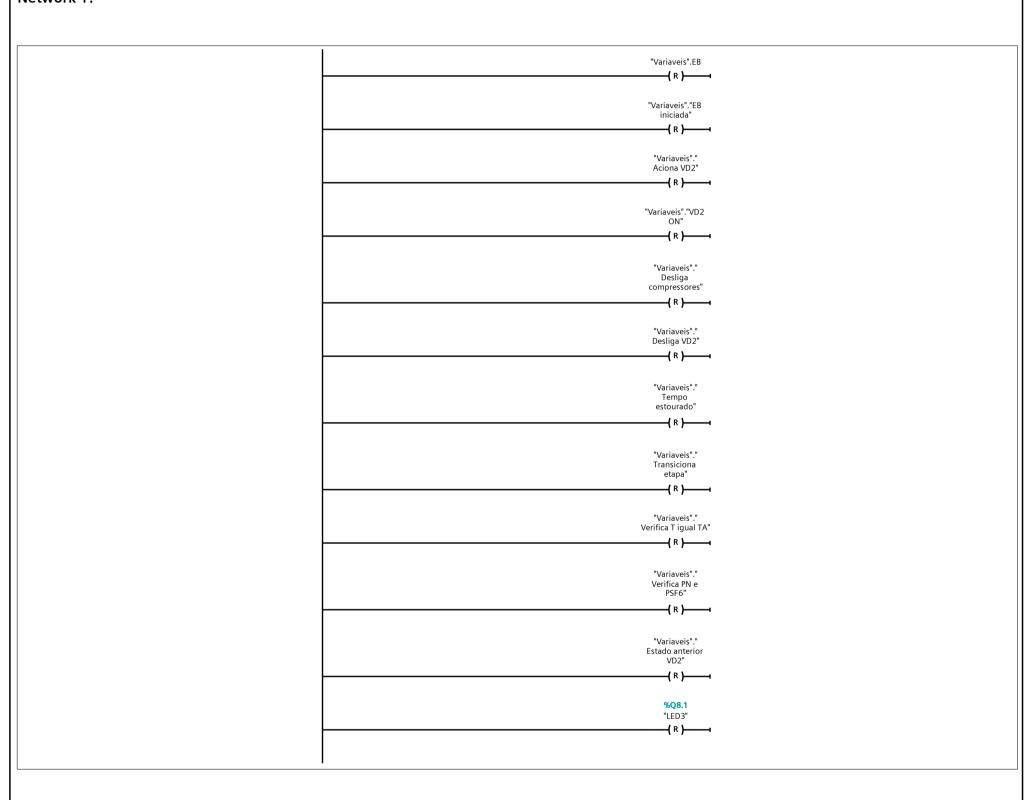
Totally Integrated Automation Portal				
Program blocks				
EB - Etapa finalizada [FC33]				
EB - Etapa finalizada Prop	erties erties			

General								
Name	EB - Etapa finalizada Nu	umber	33		Туре	FC	Language	LAD
Numbering	Automatic							
Information								
Title	Αι	uthor			Comment		Family	
Version	0.1 Us	ser-defined ID						
					-			
Name		Data type		Default value		Comment		
Input								
Output								
InOut								
Temp								
Constant								
▼ Return								
*								

Void

Network 1:

EB - Etapa finalizada



otally Integrated	

EC - Etapa iniciada [FC34]

EC - Etapa inici	ada Properties						
General							
Name	EC - Etapa iniciada	Number	34	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

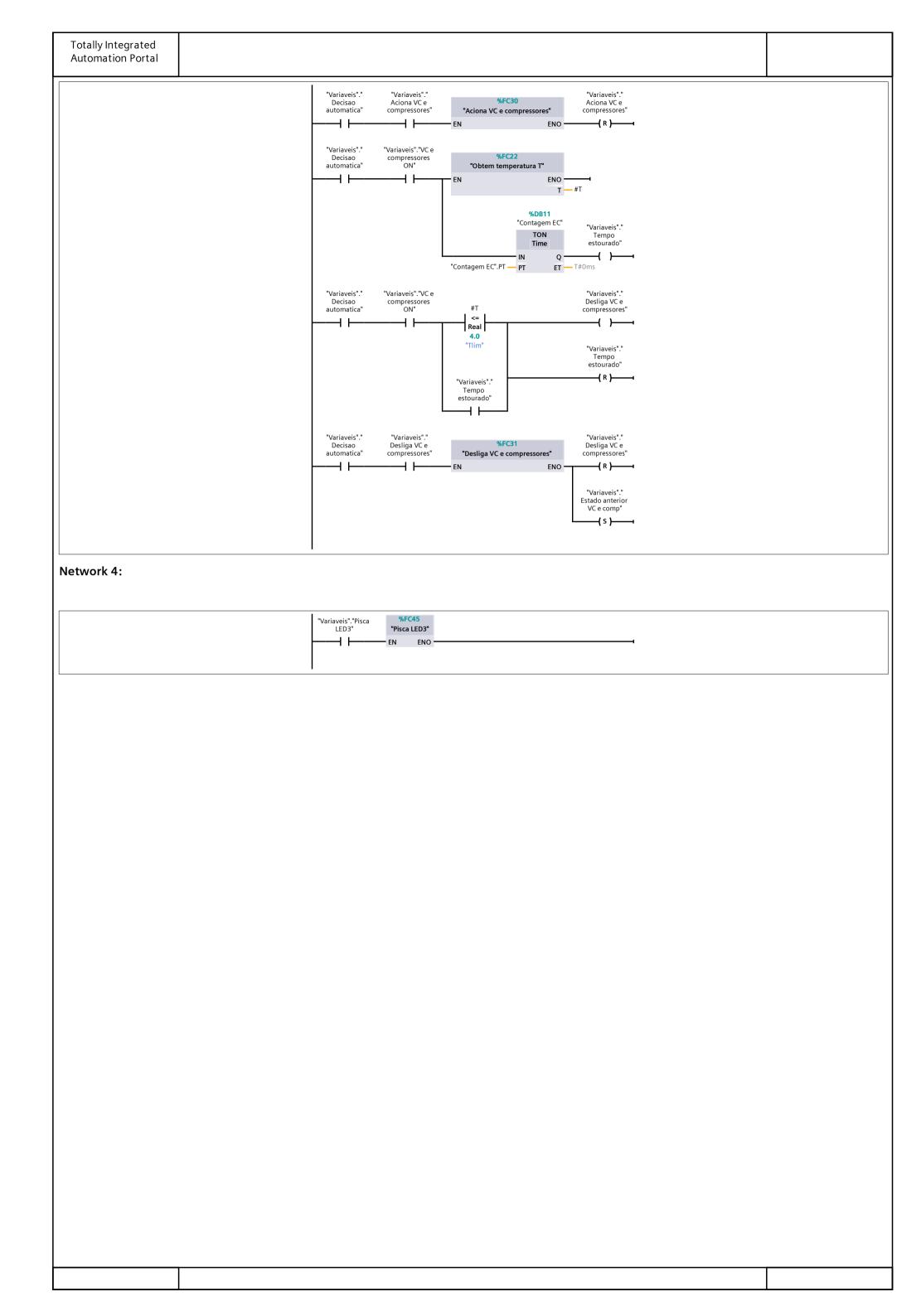
Name	Data type	Default value	Comment	
Input				
Output				
InOut				
▼ Temp				
Т	Real		Temperatura no nó estendido	
TA	Real		Temperatura ambiente	
PN	Real		Pressão no nó estendido	
PSF6	Real		Pressão do tanque de SF6	
Threshold ambiente	Real		(1 - beta)*TA	
Constant				
▼ Return				
EC - Etapa iniciada	Void			

Network 1:

Network 2:

```
"Variaveis"."
Verifica PN e P
Nlim"
"Variaveis"."
                      "Variaveis"."
Verifica T igual TA"
                                                                   %FC22
                                                                                                                                                                       CALCULATE
Decisao
automatica"
                                                         "Obtem temperatura T"
                                                                                                                                                                                                                                        >=
Real
                                                                                       ENO
                                                                                                                                                                                                                                      #"Threshold
ambiente"
                                                                                                                                                          OUT := (IN1 - IN2) * IN3
                                                                                                                                                                                                                                                            "Variaveis"."
Verifica T igual TA"
                                                                   %FC23
                                                                                                                                               1.0 — IN1
                                                                                                                                                                                                        #"Threshold
                                                        "Obtem temperatura TA"
                                                                                                                                            0.05
"beta" — IN2
                                                                                                                                                                                             OUT
                                                                                       ENO -
                                                  - EN
                                                                                         TA — #TA
                                                                                                                                              #TA — IN3 👍
"Variaveis"."
Decisao
automatica"
                        "Variaveis"."
Verifica PN e P
Nlim"
                                                                                                                                                        "Variaveis"."
Aciona VC e
compressores"
                                                                   %FC16
                                                                                                                                     #PN
                                                           "Obtem pressao PN"
                                                                                                                                                             ENO -
                                                                                                                                   Real
                                                                                         PN —#PN
                                                                                                                                  3.0 "PNlim"
                                                                                                                                                          "Variaveis"."
                                                                                                                                                        Varifica PN e P
Nlim"
                                                                                                                                                              -( R )-
                                                                                                                                                          "Variaveis"."
                                                                                                                                                       Estado anterior
VC e comp"
                                                                                                                                                      "Variaveis"."Pisca
LED3"
                                                                                                                                    #PN
                                                                                                                                   <=
Real
                                                                                                                                                             -( s }-----
                                                                                                                                  3.0 "PNlim"
                                                                                                                                                        "Variaveis"."
Verifica PN e P
Nlim"
                                                                                                                                                              -( R )-
                                                                                                                                                       "Variaveis"."
Estado anterior
VC e comp"
                                                                                                                                                             _( R )_
```

Network 3:



Totally Integ Automation	grated I Portal						
0 0 K 0 K 0	blocks						
	blocks finalizada [FC35]						
	lizada Properties						
eneral ime	EC - Etapa finalizada	Number 35		Type	FC	Language	LAD
umbering	Automatic	Nulliber 55		Туре	PC .	Language	LAU
formation							
tle		Author		Comment		Family	
rsion	0.1	User-defined ID					
ame		Data type	Default value		Comment		
Input							
Output							
InOut							
Temp							
Constant							
Return							
EC - Etar	oa finalizada	Void					
					"Variaveis".EC		
					"Variaveis". "EC iniciada"		
					(R)———		
					"Variaveis"." Aciona VC e compressores"		
					(R)		
					"Variaveis"."VC e compressores		
					"Variaveis"."VC e compressores ON"		
					compressores ON" (R) "Variaveis"."		
					compressores ON"		
					"Variaveis" ." (R) "Variaveis" ." Desliga compressores" (R) "Variaveis" ." Desliga VC e		
					compressores ON" R "Variaveis"." Desliga compressores" R		
					"Variaveis" ." "Variaveis" ." Desliga compressores" (R) "Variaveis" ." Desliga VC e compressores" (R) "Variaveis" ."		
					"Variaveis" ." Desliga compressores" (R) "Variaveis" ." Desliga VC e compressores"		
					"Variaveis" ." Desliga compressores" (R) "Variaveis" ." Desliga VC e compressores" (R) "Variaveis" ." Tempo estourado"		

"Variaveis"." Verifica PN e P Nlim"

"Variaveis"."
Estado anterior
VC e comp"

–(R)——

|--|

MS2 - Operacao iniciada [FC36]

MS2 - Operacad	iniciada Properties						
General							
Name	MS2 - Operacao iniciada	Number	36	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment	
Input				
Output				
InOut				
▼ Temp				
PN	Real		Pressão no nó estendido	
PSF6	Real		Pressão do tanque de SF6	
Threshold PSF6	Real		(1 + gamma)*PSF6	
Constant				
▼ Return				
MS2 - Operacao iniciada	Void			

Network 1: Válvula on/off da linha direta (primeira)

```
%FC41
"Aciona VD1"
— EN ENO
```

Network 2:

```
%DB12
                     "Delay - Decisao
etapa"
 "Variaveis"."
                           TON
                                                                                            "Variaveis"."
Decide etapa"
                                                                                           Decide etapa"
                           Time
                                    Q
"Delay - Decisao
etapa".PT <u>—</u>
                                   ET -
                                        — T#0ms
"Variaveis"."
Decide etapa"
                                      %FC16
                                                                                                                              CALCULATE
                                                                                                                                                                                                              "Variaveis"."
Realiza EB"
                                                                                                                                                                                           #PN
                              "Obtem pressao PN"
                                                                                                                                                                                                                  -( s )-
                                                       ENO
                      EN
                                                                                                                                                   ENO
                                                                                                                                                                                           Real
                                                        PN — #PN
                                                                                                                                                                                      #"Threshold
PSF6"
                                                                                                                   OUT := (IN1 + IN2) * IN3
                                                                                                                                                                                                            "Variaveis"."EB
iniciada"
                                      %FC21
                                                                                                         1.0 — IN1
                                                                                                                                                           #"Threshold
_ PSF6"
                             "Obtem pressao PSF6"
                                                                                                        0.05
                                                                                                   "gamma" —
                      - EN
                                                       ENO -
                                                                                                                 IN2
                                                       PSF6 — #PSF6
                                                                                                      #PSF6 — IN3 🚜
                                                                                                                                                                                                            "Variaveis"."
Decide etapa"
                                                                                                                                                                                                                  -( R )-
                                                                                                                                                                                                              "Variaveis"."
Realiza EC"
                                                                                                                                                                                      #"Threshold
PSF6"
                                                                                                                                                                                                                  -( s )-
                                                                                                                                                                                                            "Variaveis"."EC
iniciada"
                                                                                                                                                                                                              "Variaveis"."
                                                                                                                                                                                                             Decide etapa"
                                                                                                                                                                                                                  -( R )-
```

Network 3:

```
"Variaveis"."
Realiza EB"

EN ENO

"Variaveis"."
Realiza EC"

Realiza EC"

EN ENO

The state of the state of
```

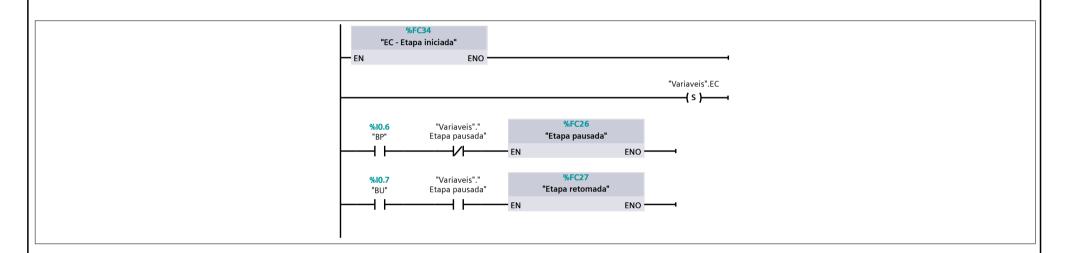
eneral	perties						
ame	Realiza EB	Number	37	Туре	FC	Language	LAD
umbering nformation	Automatic						
tle		Author		Comment		Family	
ersion	0.1	User-defined ID					
ame		Data type	Default value		Comment		
Input							
Output InOut							
Temp							
Constant							
Return							
Realiza E	В	Void					
twork 2:					(s)—-		
			%FC32				
			EB - Etapa iniciada"				
		— EN	ENO				
					"Variaveis".EB ————————————————————————————————————		
		%10.	6 Whatian aid!!!	%FC26			
		"BP	" Etapa pausada"	"Etapa pausada"			
		 1	V		ENO ———		
		%IO. "BU		%FC27 "Etapa retomada"			
		— —	EN	ı	ENO ———		
letwork 3:							
etwork 5.							
		"Variav Decis	eis"." "Variaveis"." ao Transiciona	%FC33			
		automa	itica" etapa"	"EB - Etapa finalizada"			
					ENO —		
					"Variaveis"." Realiza EB"		
					(R)		
					"Variaveis"."		
					Realiza EC"		
					` <i>'</i>		

Realiza EC [FC38]

Realiza EC Prop	erties						
General							
Name	Realiza EC	Number	38	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Realiza EC	Void		

Network 1:



Totally Integr Automation I	rated Portal						
Program	hlocks						
	racao finalizada [FC	39]					
MS2 - Operacao General	o finalizada Properties						
Name Numbering Information	MS2 - Operacao finalizada Automatic	Number	39	Туре	FC	Language	LAD
Title Version	0.1	Author User-defined ID		Comment		Family	
Name		Data type	Default value		Comment		
Input Output							
InOut Temp							
Constant ▼ Return							
MS2 - Ope Network 1:	eracao finalizada	Void					
Network 1.							
			%FC40 "Verifica VD1 VD2 VC"				
		EN "North	ENO ————————————————————————————————————				
		D€	sesliga %FC7 pressores" "Verifica compress	sores"			
			. I CN				
Network 2: L	.ED que indica o estado	de etapa paus	sada				
					%Q8.1 "LED3" ———(R)———		
					%Q8.2 "LED4"		
					(R)		
Network 3:		·					
		— EN	%FC33 "EB - Etapa finalizada" ENO				
		EN	ENU		"Variaveis"."		
			%FC35		Realiza EB"		
		— EN	"EC - Etapa finalizada" ENO ———				
					"Variaveis"." Realiza EC" (R)		
					\		

|--|

Verifica VD1 VD2 VC [FC40]

Verifica VD1 VD	02 VC Properties						
General							
Name	Verifica VD1 VD2 VC	Number	40	Туре	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Verifica VD1 VD2 VC	Void		

Network 1: Válvula on/off da entrada do sistema de compressores

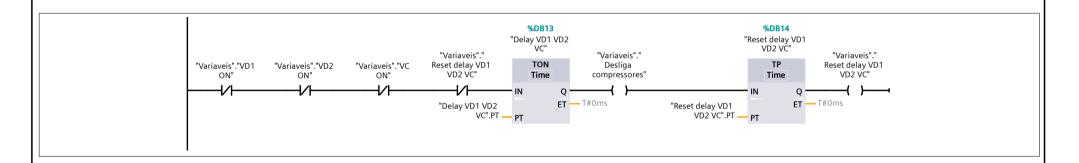
```
"Variaveis"."VD1
ON"
INDESIIGA VD1"
EN
EN
ENO

"Variaveis"."VD2
ON'
EN
EN
EN
EN

"Variaveis"."VC
ON"
(R)

"Variaveis"."VC
ON'
(R)
```

Network 2:



ciona VD1 [FC41]								
neral Me Aciona VD1	Nu	mber 41		Туре	FC	Language	LAD	
mbering Automatic prmation								
e		thor		Comment		Family		
rsion 0.1	Use	er-defined ID						
ne Input		Data type	Default value		Comment			
Output								
InOut								
Геmp Constant								
Return								
Aciona VD1		Void						
					%Q0.2 "VD1" { s } "Variaveis"."VD1 ON" { S }			

area to Selliga VO1 Number 43 Type (C Language IAU) Automatic Automatic Automatic Automatic Automatic Automatic Automatic B B B Automatic B B B Automatic B B B B B B B B B B B B B B B B B B B	
Automatic rmation 2 Author Comment	
Author User-defined ID Comment	Family
sion 0.1 User-defined ID	
Input Output InDut	
Output InOut Temp Constant Return Desliga VD1 Void twork 1: Válvula on/off da linha direta (primeira) **Work 1: Válvula on/off da linha direta (primeira) **Work 1: Válvula on/off da linha direta (primeira)	
InOut Temp Constant Return Desliga VD1 Void twork 1: Válvula on/off da linha direta (primeira) "Voir (R) "Voir (R) "Voir (N) "Variaveis"."VD1 (N)	
Temp Constant Return Desliga VD1 Void twork 1: Válvula on/off da linha direta (primeira) **Q0.2* **V01* {R} **Variaveis".*VD1 ON*	
Return Desliga VD1 twork 1: Válvula on/off da linha direta (primeira) **Q0.2**VD1** (R) "Variaveis*,"VD1 ON"	
Desliga VD1 twork 1: Válvula on/off da linha direta (primeira) **Q0.2 **VD1** (R) **Variaveis*.*VD1 ON**	
twork 1: Válvula on/off da linha direta (primeira) * \	
"Variaveis"."VD1 "Variaveis"."VD1 ON"	

|--|

OPERACAO - MS2 [FC43]

OPERACAO - MS2 Properties										
General										
Name	OPERACAO - MS2	Number	43	Туре	FC	Language	LAD			
Numbering	Automatic									
Information										
Title		Author		Comment		Family				
Version	0.1	User-defined ID								

Name	Data type	Default value	Comment	
Input	,			
Output				
InOut				
▼ Temp				
Т	Real		Temperatura no nó estendido	
Constant				
▼ Return				
OPERACAO - MS2	Void			

Network 1: LED que indica se há alguma operação em curso

```
#CD2"

"LED2"

"MS2 - Operacao iniciada"

— EN ENO

SFC14

"Estado inadmissivel"

— EN ENO

SFC44

"Temperatura inadmissivel"

— EN ENO

ENO

ENO

**CO10

**C
```

Network 2: LED que indica se há alguma operação em curso

```
%Q1.0
"LED2"
                                                                                                                       -( R )-
       "Variaveis".MS2
      %10.2
       "BE"
                                                                                                                       -( R )--
                                                                                                              "Variaveis"."
Estado anterior -
MS2"
"Variaveis".
Inadmissivel
                                                                                                                      -( R )−
                                               %FC39
                                "MS2 - Operacao finalizada"
"Variaveis"."T
inadmissivel"
       <del>|</del> | |
                                  %I0.2
"BE"
                                                                                                                  "Variaveis".
Emergencia
                                                                                                                       <del>(</del> )-
                             "Variaveis".
Inadmissivel
                            "Variaveis"."T
inadmissivel"
                                           %FC17
 "Variaveis".
Emergencia
                                "Protocolo de Emergencia"
      \dashv \vdash
                                                                  ENO -
```

Totally Integrated Automation Portal	

Temperatura inadmissivel [FC44]

Temperatura inadmissivel Properties											
General	General										
Name	Temperatura inadmissivel	Number	44	Туре	FC	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Name	Data type	Default value	Comment
Input			
Output			
InOut			
▼ Temp			
Т	Real		Temperatura no nó estendido
Constant			
▼ Return			
Temperatura inadmissivel	Void		

Network 1:

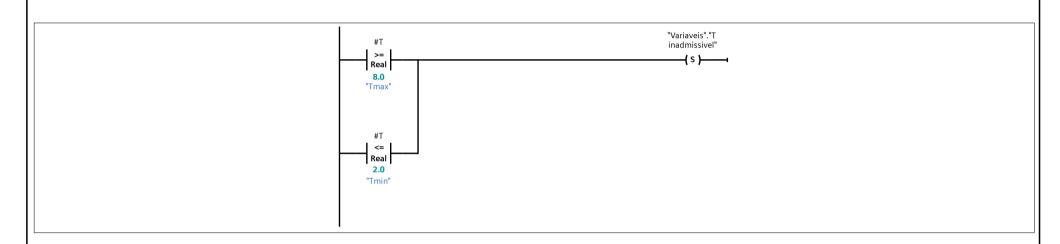
```
"Obtem temperatura T"

EN

T

#T
```

Network 2:

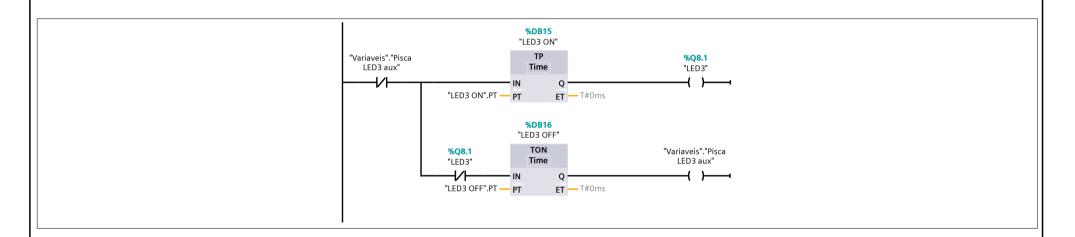


Pisca LED3 [FC45]

Pisca LED3 Prop	Pisca LED3 Properties										
General	General										
Name	Pisca LED3	Number	45	Type	FC	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Pisca LED3	Void		

Network 1: LED que avisa sobre a pressão no tanque separador



Totally Integrated
Automation Portal

Decide LED1 - FB [FB1]

Decide LED1 - F	Decide LED1 - FB Properties										
General	General										
Name	Decide LED1 - FB	Number	1	Туре	FB	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Name	Data type	Default value	Retain	HMI/OPC UA/Web	able	Visible in HMI engi- neering	Setpoint	Sup- sion	ervi	j-	Comment
▼ Input											
Р	Real	0.0	Non-retain	True	True	True	False				Pressão no tanque separa- dor
Output											
InOut											
Static											
Temp											
Constant											

Network 1: LED que avisa sobre a pressão no tanque separador

```
0001 IF "Variaveis".MS1 = TRUE THEN
0002
      IF #P >= "L2" THEN
0003
             "Variaveis"."LED1 - Continuo" := TRUE;
             "Variaveis"."LED1 - Piscar" := FALSE;
0004
            "Variaveis"."LED1 - Desligar" := FALSE;
0005
0006
        ELSIF #P <= "Lmin" THEN
0007
             "Variaveis"."LED1 - Piscar" := TRUE;
0008
             "Variaveis"."LED1 - Continuo" := FALSE;
0009
             "Variaveis"."LED1 - Desligar" := FALSE;
        ELSE
0010
0011
             "Variaveis"."LED1 - Desligar" := TRUE;
0012
             "Variaveis"."LED1 - Piscar" := FALSE;
0013
            "Variaveis"."LED1 - Continuo" := FALSE;
0014
        END_IF;
0015 ELSE
      IF #P >= "L2" THEN
0016
            "Variaveis"."LED1 - Continuo" := TRUE;
0017
0018
             "Variaveis"."LED1 - Desligar" := FALSE;
0019
       ELSE
0020
            "Variaveis"."LED1 - Desligar" := TRUE;
0021
             "Variaveis"."LED1 - Continuo" := FALSE;
0022
        END_IF;
0023 END_IF;
0024
```

neral	DB Properties	NI.	umbor 10		Type	DI	D		Lar		DP.	
me mbering	Decide LED1 - DB Automatic	N	umber 19		Туре	DE	В		Lar	ngua	age DB	
ormation le			ithor		Comment				Far	nily		
sion ne	0.1	Data type	er-defined ID Start value	Retain	Accessible	\A/ri+	Visible in	Catnaint	Supar		Comment	
		Data type	Start value	Netaiii	from HMI/OPC UA/Web API	able	HMI engi- neering	Setpoint	sion	VI	Comment	
nput P		Real	0.0	False	True	True	True	False			Pressão no tan	nque separador
output		Keai	0.0	raise	True	True	True	raise			Pressão no tar	ique separador
nOut tatic												

ral LED1 ON											
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