

Configuração do módulo de contagem BMXEHC0200 – Modicon M340.

Objetivo:

Destina-se ilustrar a configuração do canal de entrada de contagem **BMXEHC0200** em **Modulo Loop Counter Mode**, bem como informar o acionamento das saídas para atuadores.

Esquema de ligação para Encoder Incremental:



XCC 1510PS10Y

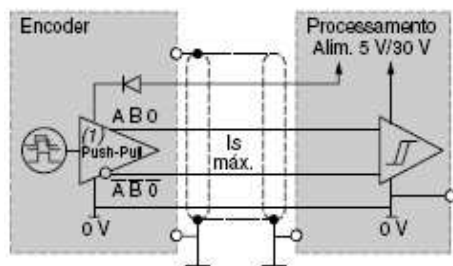
1000 pontos	Conector radial M23 macho	Push-pull	5...30 V	XCC 1510PS10Y
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XCC PM23122L2

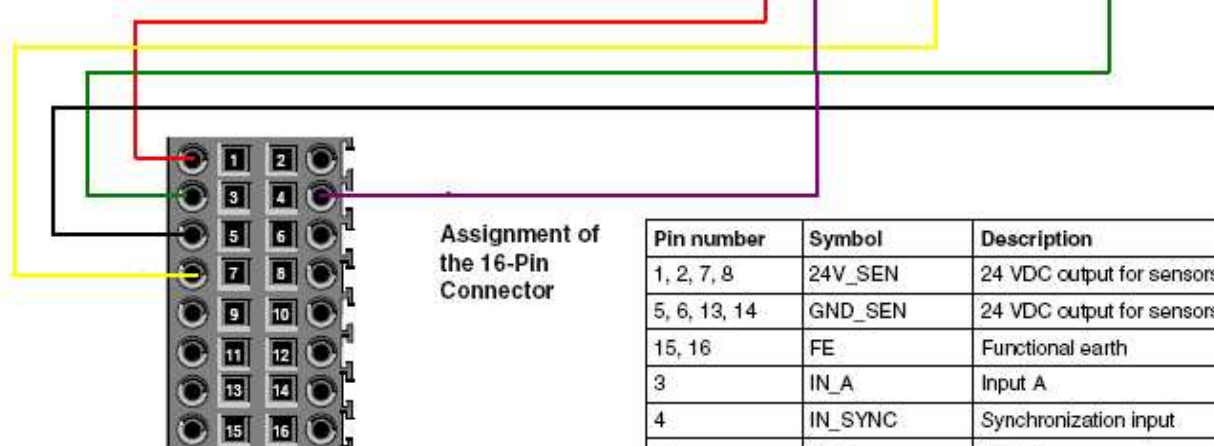
M23 F	8 fios Absoluto SSI	2 m	XCC PM23122L2
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Estágio de saída tipo Y



R : Reserved, do not connect to a potential

1	2	3	4	5	6	7	8	9	10	11	12
$\bar{A}$	+V	0	$\bar{0}$	B	$\bar{B}$	R	A	R	0 V	0 V	+V
BN	RD	VT	BU	YE	OG		GN		BK	WH	GY



Assignment of the 16-Pin Connector

Pin number	Symbol	Description
1, 2, 7, 8	24V_SEN	24 VDC output for sensors supply
5, 6, 13, 14	GND_SEN	24 VDC output for sensors supply
15, 16	FE	Functional earth
3	IN_A	Input A
4	IN_SYNC	Synchronization input
9	IN_B	Input B
10	IN_EN	Enable input selected
11	IN_REF	Homing input
12	IN_CAP	Capture input

Procedimento de configuração:

a) Configuração do Canal (CH0):

High Speed Counter 2 Ch

BMX EHC 0200

Counter 0 - Modulo Loop Counter Mode (channel_encoder_status)

Counter 1

Seleção do Canal 0

Configuração do modo de contagem:
A = up, B = Down

Function:

- Modulo Loop Counter Mode
- One Shot Counter Mode
- Period Measuring Mode
- Pulse Width Modulation Mode
- Ratio Mode 1
- Ratio Mode 2
- None

Label	Symbol	Value	Unit
0	Input A filter	Without	
1	Input B filter	Without	
2	Input Sync filter	Without	
3	Input EN filter	Without	
4	Input supply fault	General IO fault	
5	Output supply fault	General IO fault	
6	Counting interface	A = Up, B = Down	
7	Scaling factor	A = Up, B = Down	
8	Synchro edge	A = Impulse, B = Direction	
9	OutputBlock 0	Normal Quadrature X1	
10	OutputBlock 1	Normal Quadrature X2	
11	Pulsewidth 0	Normal Quadrature X4	ms
12	Pulsewidth 1	Reverse Quadrature X1	ms
13	Polarity 0	Polarity +	
14	Polarity 1	Polarity +	
15	Fault recovery	Autorecovery	
16	Fallback 0	Without	
17	Fallback 1	Without	
18	Fallback value 0	0	
19	Fallback value 1	0	
20	Event	Disable	
21	Event number		

0.2 : BMX E... 0.0 : BMX P... 0.0 : CANop... PLC bu

b) Criação de Tag's dos objetos do canal de contagem:

High Speed Counter 2 Ch

BMX EHC 0200

Counter 0 - Modulo Loop Counter Mode

Counter 1

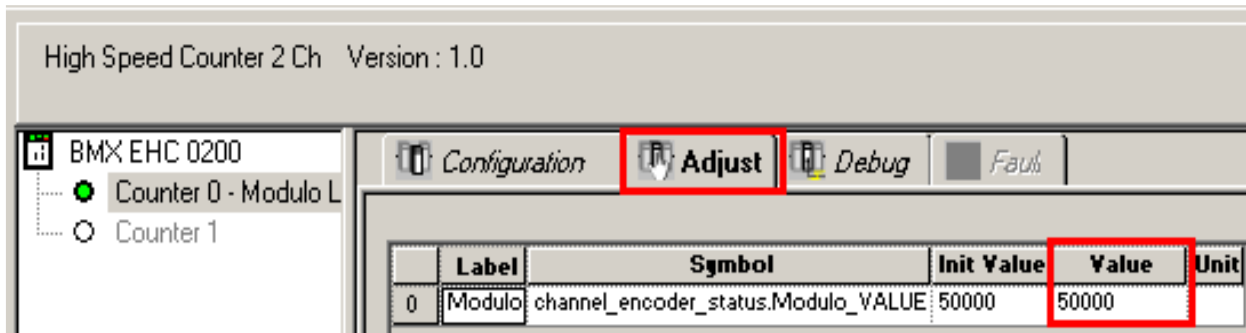
Overview I/O objects

Address	Name	Type	Comment
%I0.2.0.ERR	channel_encoder_status.CH_ERR	BOOL	Channel error
%I0.2.0	channel_encoder_status.ST_OUTP	EBOOL	Logical state of Output 0
%I0.2.0.1	channel_encoder_status.ST_OUTP	EBOOL	Logical state of Output 1
%I0.2.0.2	channel_encoder_status.ST_OUTP	EBOOL	Output Block 0 state
%I0.2.0.3	channel_encoder_status.ST_OUTP	EBOOL	Output Block 1 state
%I0.2.0.4	channel_encoder_status.ST_INPU	EBOOL	Physical Input A state
%I0.2.0.5	channel_encoder_status.ST_INPU	EBOOL	Physical Input B state
%I0.2.0.6	channel_encoder_status.ST_INPU	EBOOL	Physical Input Sync (or Aux) state
%I0.2.0.7	channel_encoder_status.ST_INPU	EBOOL	Physical Input Enable state
%I0.2.0.8	channel_encoder_status.ST_INPU	EBOOL	Physical Input Preset state
%I0.2.0.9	channel_encoder_status.ST_INPU	EBOOL	Physical Input Capture state
%Q0.2.0	channel_encoder_status.OUTPUT	EBOOL	Force OUTPUT_0 to logical active High st
%Q0.2.0.1	channel_encoder_status.OUTPUT	EBOOL	Force OUTPUT_1 to logical active High st
%Q0.2.0.2	channel_encoder_status.OUTPUT	EBOOL	Enable the output block function 0
%Q0.2.0.3	channel_encoder_status.OUTPUT	EBOOL	Enable the output block function 1
%Q0.2.0.4	channel_encoder_status.FORCE_S	EBOOL	Synchronize and Start the counting funcio
%Q0.2.0.5	channel_encoder_status.FORCE_R	EBOOL	Set the counter to the preset value
%Q0.2.0.6	channel_encoder_status.FORCE_E	EBOOL	Makes the counter enabled
%Q0.2.0.7	channel_encoder_status.FORCE_R	EBOOL	Set the counter to 0
%Q0.2.0.8	channel_encoder_status.SYNC_RE	EBOOL	Reset SYNC_REF_FLAG
%Q0.2.0.9	channel_encoder_status.MODULO	EBOOL	Reset MODULO_FLAG
%Iw0.2.0	channel_encoder_status.COUNTE	INT	Main status register
%Iw0.2.0.1	channel_encoder_status.COMPAR	INT	Field of Comparison result bits
%ID0.2.0.2	channel_encoder_status.COUNTE	UDINT	Main Numerical Current Value

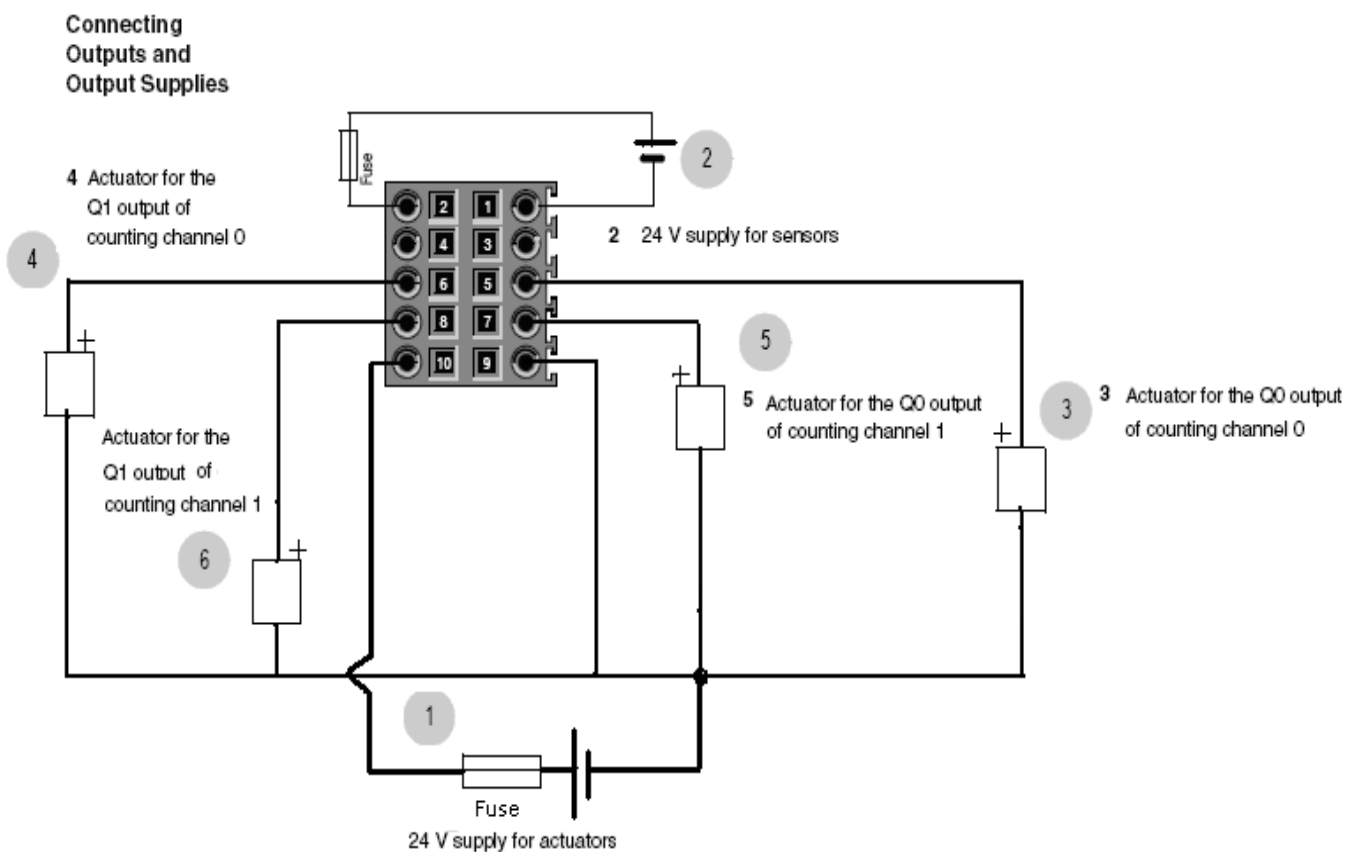
Na aba **I/O objects**, verifica-se as variáveis geradas correspondentes às funcionalidades do canal de contagem.

c) Definição da escala de trabalho:

Em função da resolução em **Módulo Loop Counter Mode**, definimos o valor de range na aba **Adjust**:



Esquema de ligação para os atuadores:



Seqüência de Habilitação de leitura na entrada de contagem:

Através do recurso **Animation Table**, habilitamos a seqüência de parâmetros de autorização de funcionamento da contagem.

Name	Val...	Γ...	Comment
EVT_CAPT_1_VAL	0	UDINT	Capture 1 value at event time
OUTPUT_0	0	EBOOL	Force OUTPUT_0 to logical active High state
OUTPUT_1	0	EBOOL	Force OUTPUT_1 to logical active High state
OUTPUT_BLOCK_0_ENABLE	0	EBOOL	Enable the output block function 0
OUTPUT_BLOCK_1_ENABLE	0	EBOOL	Enable the output block function 1
FORCE_SYNC	1	EBOOL	Synchronize and Start the counting function
FORCE_REF	0	EBOOL	Set the counter to the preset value
FORCE_ENABLE	1	EBOOL	Makes the counter enabled
FORCE_RESET	0	EBOOL	Set the counter to 0
SYNC_RESET	0	EBOOL	Reset SYNC_REF_FLAG
MODULO_RESET	0	EBOOL	Reset MODULO_FLAG
FUNCTIONS_ENABLING	4	INT	Field of Enable Function bits
VALID_SYNC	0	BOOL	Autorizes Input SYNC (or AUX) to synchronize and start the co...
VALID_REF	0	BOOL	Autorizes the internal Preset function to preform
VALID_ENABLE	1	BOOL	Autorizes Input Enable to makes the counter enabled
VALID_CAPT_0	0	BOOL	Autorizes captures into the Capture 0 register
VALID_CAPT_1	0	BOOL	Autorizes captures into the Capture 1 register
COMPARE_ENABLE	0	BOOL	Autorizes comparators to produce its results
COMPARE_SUSPEND	0	BOOL	Hold comparator at latest result
EVT_SOURCES_ENABLING	0	INT	Field of Enable Event bits
EVT_RUN_ENABLE	0	BOOL	Call Event task when Counter starts
EVT_MODULO_ENABLE	0	BOOL	Call Event task when Counter Roll over
EVT_SYNC_PRESET_ENABLE	0	BOOL	Call Event task when Counter synchronizes (Or Preset)
EVT_COUNTER_LOW_ENABLE	0	BOOL	Call Event task when Main Value goes less than the lower thre...
EVT_COUNTER_WINDOW_E...	0	BOOL	Call Event task when Main Value goes within the thresholds
EVT_COUNTER_HIGH_ENABLE	0	BOOL	Call Event task when Main Value goes greater than the thresho...
EVT_CAPT_0_ENABLE	0	BOOL	Call Event task when a Capture 0 occurs

Também, podemos verificar o valor atual de contagem, referente à movimentação do eixo.

Name	Val...	Γ...	Comment
LOW_LIMIT	0	BOOL	Main Numerical current value locked at low Limit
COMPARE_STATUS	0	INT	Field of Comparison result bits
COUNTER_LOW	0	BOOL	Numeral current value is less than the Lower Threshold
COUNTER_WIN	0	BOOL	Numeral current value is within the thresholds
COUNTER_HIGH	0	BOOL	Numeral current value is greater than the Threshold(s)
CAPT_0_LOW	0	BOOL	Capture 0 less than the Lower Threshold
CAPT_0_WIN	0	BOOL	Capture 0 within the Thresholds
CAPT_0_HIGH	0	BOOL	Capture 0 greater than the Threshold(s)
CAPT_1_LOW	0	BOOL	Capture 1 less than the Lower Threshold
CAPT_1_WIN	0	BOOL	Capture 1 within the Thresholds
CAPT_1_HIGH	0	BOOL	Capture 1 greater than the Threshold(s)
COUNTER_CURRENT_VALUE	916	UDINT	Main Numerical Current Value
CAPT_0_VALUE	0	UDINT	Main Numerical Value held at the Capture 0 event time
CAPT_1_VALUE	0	UDINT	Main Numerical Value held at the Capture 1 event time
EVT_SOURCES	0	INT	Field of Calling Event sources