高速计数模块 IC695HSC304/308

基本配置步骤

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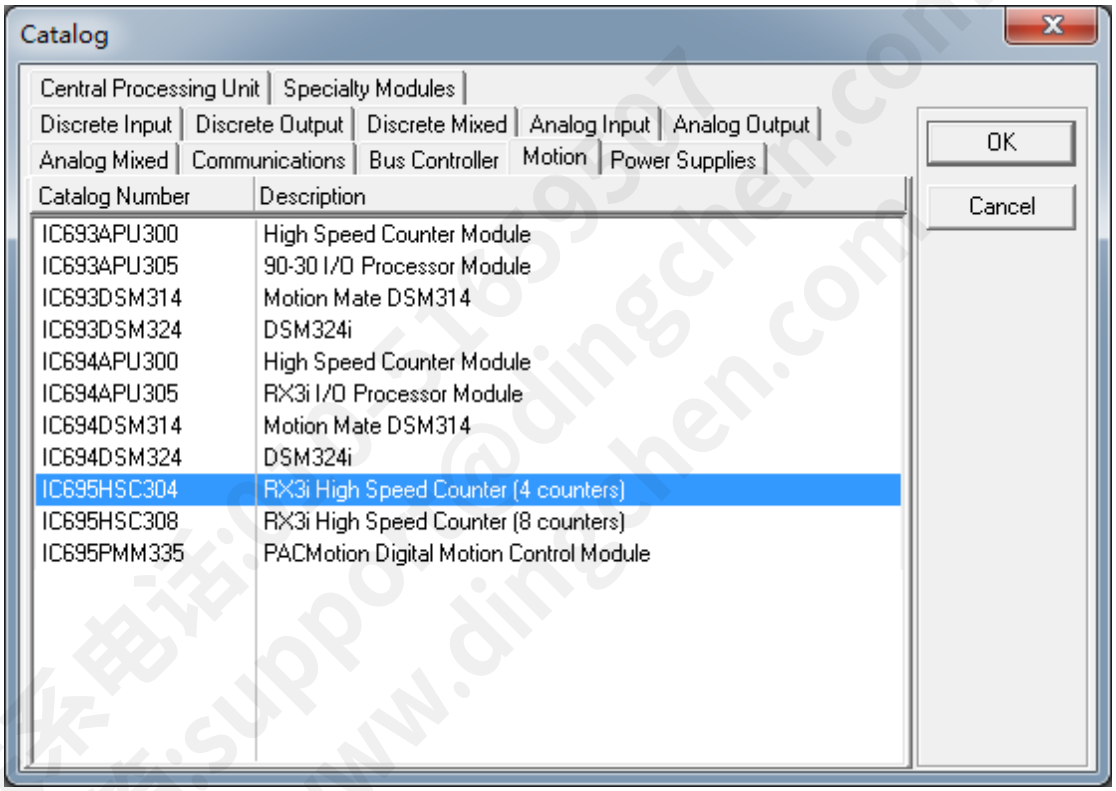
目录

1. 说明

艾默生 PACSystem™产品目前提供两种类型的高速计数模块：IC694APU300 及 IC695HSC304/308，本说明主要介绍 HSC304/308 基本配置步骤。

注意：IC695HSC304/308 高速计数模块需要单独配置接线端子 IC694TBB032

2. 添加模块并配置外部电源等级



Settings | Inputs | Outputs | CFG-Counter1 | CFG-Counter2 | CFG-Counter3 | CFG-Counter4 | SRC-Counter1 | SRC-Counter2 | SRC-Counter3 | SRC-Counter4 | Power Consumption

Parameters	Values
---- I/O and Diagnostic Settings ----	
Counter Status Data Reference	%I00257
Counter Status Data Length	128
Counter Register Data Reference	%AI00001
Counter Register Data Length	56
Counter Control Data Reference	%Q00161
Counter Control Data Length	128
Module Control Data Reference	%AQ00001
Module Control Data Length	28
I/O Status Data Reference	%I00385
I/O Status Data Length	64
Output Control Data Reference	%Q00289
Output Control Data Length	32
Module Status Data Reference	%I00449
Module Status Data Length	32
---- General Settings ----	
Faults w/o Terminal Block	Disabled
External Inputs Threshold	12/24V
External Inputs Default w/o Terminal Block	Force Off
I/O Scan Set	1

电源等级一般选择12/24

3. 设置输入滤波

输入滤波与编码器的频率越接近越好

(0.4) IC695HSC304

Settings | Inputs | Outputs | CFG-Counter1 | CFG-Counter2 | CFG-Counter3 | CFG-Counter4 | SRC-Counter1 | SRC-Counter2 | SRC-Counter3 | SRC-Counter4 | Power Consumption

Input	Filtering	Transition Interrupt	Transition Interrupt Trigger Edge
Input 1	500KHz	Disable	Rising Edge
Input 2	500KHz	Disable	Rising Edge
Input 3	500KHz	Disable	Rising Edge
Input 4	5MHz	Disable	Rising Edge
Input 5	5MHz	Disable	Rising Edge
Input 6	5MHz	Disable	Rising Edge
Input 7	5MHz	Disable	Rising Edge
Input 8	5MHz	Disable	Rising Edge

4. 编码器配置

4.1 配置编码器类型

编码器类型选 B （A Quad B）；时基 1ms;

---- General Settings ----	
Counter Type	**B**
Available Clock Inputs	2
Counter Clock Type	**(A Quad B) Input 1 - A / Input 2 - B**
Timebase Units	1ms
Timebase	1000
Pre-scale (Divider)	1
Strobe Overwrite	With Acknowledge

4.2 设定点及设定点输出设置

---- Setpoint Limits ----	
Setpoint #1 (ON)	**10000**
Setpoint #1 (OFF)	**20000**
Setpoint #2 (ON)	0
Setpoint #2 (OFF)	0
Setpoint #3 (ON)	0
Setpoint #3 (OFF)	0
Setpoint #4 (ON)	0
Setpoint #4 (OFF)	0
---- Setpoint Outputs ----	
Setpoint #1	**Output #1**
Setpoint #2	None
Setpoint #3	None
Setpoint #4	None

设定点通断：如上图设置为累加值到达10000,则输出为ON，到达20000输出OFF

设置点输出：选择与设置点对应的输出通道

4.3 预装载值及上下限范围

如下图，设置预装载值为 0，上下限范围可更改

---- Preload Settings ----	
Preload 1 Value	0
---- Range and Limit Settings ----	
Count Mode	Continuous within high/low range
Low Range	-2147483648
High Range	2147483647
Rate of Change	0
---- Event Reporting Settings ----	
Fault Enable	Disable
Interrupt Enable	Disable

5. 端子设置及累加值

5.1 设置编码器端子

指定编码器的输入端子（此处端子是客户自定义）

Parameters	Values
---- Source Settings ----	
Clock Input 1	
Source	**External Input**
Item Number	**Input #1**
Clock Input 2	
Source	**External Input**
Item Number	**Input #2**

5.2 设置选通端子（可选）

设置选通端子、预装载端子及信号类型

Strobe 1	
Source	**External Input**
Item Number	**Input #6**
Polarity	Rising Edge
Strobe 2	
Source	**External Input**
Item Number	**Input #7**
Polarity	Rising Edge
Preload 1	
Source	**External Input**
Item Number	**Input #8**
Sensitivity	Edge
Polarity	Rising Edge

5.3 计数器累加值及选通值

每个编码器占 14 个通道（IC695HSC304）,计数器一共用 56 个输入 AI 地址表示

Parameters	
---- I/O and Diagnostic Settings ----	
Counter Status Data Reference	%I00257
Counter Status Data Length	128
Counter Register Data Reference	%AI00001
Counter Register Data Length	56
Counter Control Data Reference	%Q00161
Counter Control Data Length	128
Module Control Data Reference	%AQ00001
Module Control Data Length	28
I/O Status Data Reference	%I00385
I/O Status Data Length	64
Output Control Data Reference	%Q00289
Output Control Data Length	32
Module Status Data Reference	%I00449
Module Status Data Length	32

例：第一个编码器的累加值为 AI1（请查看手册累加值章节）

Counter Reference Address	*Data*
Address + 0, Address + 1	Accumulator Value
Address + 2, Address +3	Strobe 1 Register Value
Address + 4, Address +5	Strobe 2 Register Value
Address + 6, Address +7	Strobe 3 Register Value
Address + 8, Address +9	Strobe 4 Register Value
Address + 10, Address +11	Counts per Timebase Value
Address + 12, Address +13	Reserved