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 - [以 AsIOAccRead 为例读 x20sd1207 模块温度](#)

需求

- 当我们想了解贝加莱模块的状态信息，我们通常通过在线监测此模块 I/O mapping 的信息，例如

Channel Name	Process Variable	Data Type	Description [1]
ModuleOk		BOOL	Module status [1 = module present]
SerialNumber		UDINT	Serial number
ModuleID		UINT	Module ID
HardwareVariant		UINT	Hardware variant
FirmwareVersion		UINT	Firmware version
SafeModuleOK		BOOL	Safe Connection is acknowledged by the SN
SafeFrequency		INT	Current Frequency
SafeFrequencyOK		BOOL	Frequency OK

- 但当我们想更深入获取此模块内部的一些详细信息，我们可以从哪里获取？

信息获取

- 我们可以通过查找此模块相关的帮助信息，找到 Register description 的 Channel list

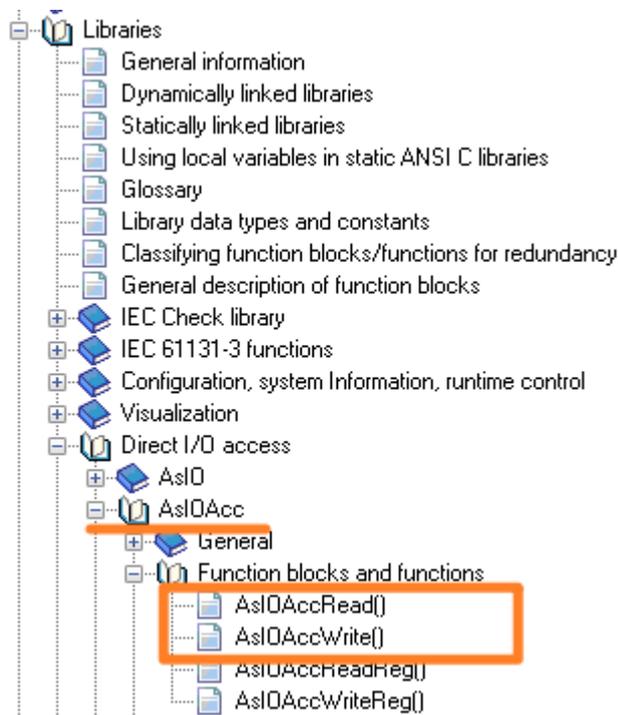
- X20UL1376
- X20DC137A
- X20(e)DC1398
- X20DC1398
- X20DC1976
- X20(e)DC2190
- X20(e)DC2395
- X20DC2396
- X20DC2398
- X20DC4395
- X20(e)SD1207
 - General information
 - Coated modules
 - Order data
 - Technical data
 - LED status indicators
 - Pinout
 - Input circuit diagram
 - Register description
 - Parameters in the I/O configuration
 - Parameters in SafeDESIGNER
 - Channel list
 - Minimum cycle time
 - I/O update time
 - Version history
 - Declaration of conformity
- CPU's
- Digital input modules
- Digital mixed modules
- Digital output modules
- Digital signal processing modules
- Dummy modules
- Electronics module communication
- Expandable bus controllers
- Expandable bus controllers System modules

Channel list				
Channel name	Access via Automation Studio	Access via SafeDESIGNER	Data type	Description
Diag1_Temp	(Read) ¹⁾	-	INT	Module temperature in °C
oS_PropDelayStat (hardware upgrade 2.3.0.0 or later)	(Read) ¹⁾	-	UDINT	Propagation delay statistics (average value of the data transmission time). The unit depends on parameter "Process data transfer rate" of the SafeLOGIC controller. <ul style="list-style-type: none"> If the value of the parameter is "High", the unit is 100 µs. If the value of the parameter is "Low", the unit is 1 ms. This value corresponds to the measurement of the forward and return channels and thus twice the theoretical runtime that is determined by the Network Analyzer.
SafeModuleOK	Read	Read	SAFEBOOL	Indicates whether the safe communication channel is OK
SafeFrequency	Read	Read	SAFEINT	Current frequency
SafeFrequencyOK	Read	Read	SAFEBOOL	Indicates if the frequency being output is OK
Reset	-	Write	BOOL	Release signal. To acknowledge an error, the cause of error (e.g. open circuit) must be corrected and the input frequency must be 0 for hardware upgrades <2.5.0.0 of the module. The error can then be acknowledged with a rising edge on channel "Reset".

- 此章节的信息即是此模块还可以访问获取与设置的模块信息

如何操作

- 我们可以使用 AsIOAcc 功能块，来实现此效果

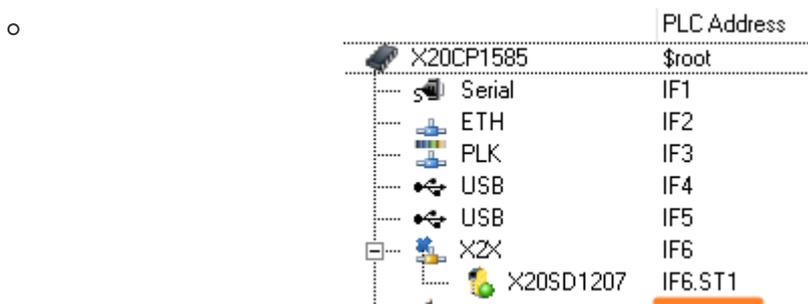


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- 功能块接口信息

I/O	Parameter	Data type	Description
IN	enable	BOOL	This function block is only executed if enable is $\neq 0$.
IN	pDeviceName	UDINT (given as a pointer to STRING)	Pointer to the device name.
IN	pChannelName	UDINT (given as a pointer to STRING)	Pointer to the channel name
OUT	Status	UINT	Error number (0 = no error)
OUT	value	UDINT	Read value

- `pDeviceName` 的信息对应着模块当前的地址
 - 例如 X20SD1207 模块在硬件树中的位置如下，其地址就是 IF6.ST1



- `pChannelName` 的信息对应着此模块 Register description 的 Channel list 表中的 Channel name
 - 比如我们想要读温度，那此名称即为 `Diag1_Temp`
- StructureText 代码的写法如下

```
1 ASIOAccRead_0.enable := TRUE;
2 ASIOAccRead_0.pDeviceName := ADR('IF6.ST1'); //'IF6.ST1'为模块当前的地址
3 ASIOAccRead_0.pChannelName := ADR('Diag1_Temp');
4 ASIOAccRead_0();
5
6 ASIOAccRead_0.value; //此数值即为温度数值
```