Restrictions on FMMU SettingsThe FMMUs of Beckhoff ESCs are subject to restrictions.

The logical address ranges of two FMMUs of the same direction (read or write) in one ESC must be separated by at least 3 logical bytes not configured by any FMMU of the same type, if one of the FMMUs or both use bit-wise mapping (logical start bit 0, logical stop bit 7, or physical start bit 0). In the above example, the first logical address area after the one shown must have a logical start address of Ox00010017 or higher (the last byte of the example FMMU is Ox00010013,

three bytes free Ox00010014-0x00010016).

If only byte-wise mapping is used (logical start bit = 0, logical stop bit = 7, or physical start bit = 0), the logical address ranges can be adjacent.

Bit-wise writing is only supported by the Digital Output register (OxOFO0:OxOFO3).

All other registers and memories are always written byte-wise.

If bit-wise mapping is used for writing into these areas, bits without mapping to logical addresses are written with undefined values (e.g., if only physical address bit Ox1000[0] is mapped by a write FMMU, the bits 1-7 are written with undefined values).

FMMU设置限制倍福esc的FMMU有限制。

的逻辑地址范围的两个FMMUs方向相同(读或写)的一个ESC必须由至少3分离逻辑字节没有配置任何FMMU相同类型的,如果其中一个FMMUs或者两者都使用位操作映射(逻辑起始位0,逻辑停止位7,或物理起始位0)。在上面的例子中,第一个逻辑地址区域后,必须有一个合乎逻辑的起始地址显示Ox00010017或更高(Ox00010013 FMMU例子的最后一个字节,

三个字节空闲Ox00010014-0x00010016)。

如果只使用逐字节映射（逻辑起始位= 0、逻辑停止位= 7或物理起始位= 0），则逻辑地址范围可以相邻。

逐位写入仅由数字输出寄存器（oxof0:OxOFO3）支持。

所有其他寄存器和内存总是按字节写的。

如果使用逐位映射来写入这些区域，没有映射到逻辑地址的位将以未定义的值写入（例如，如果只有物理地址位Ox1000[0]由写FMMU映射，则1-7位将以未定义的值写入）。

Additional FMMU CharacteristicsEach logical address byte can at most be mapped either by one FMMU(read) plus one FMMU(write), or by one FMMU(read/write).

If two or more FMMUs (with the same direction - read or write) are configured for the same logical byte, the FMMU with the lower number (lower configuration address space) is used, the other ones are ignored.

One or more FMMUs may point to the same physical memory, all of them are used.

Collisions cannot occur.

It is the same to use one read/write FMMU or two FMMUs - one read, the other one write - for theA read/write FMMU cannot be used together with SyncManagers, since independent read and write SyncManagers cannot be configured to use the same (or overlapping) physical address range.

Bit-wise reading is supported at any address.

Bits which are not mapped to logical addresses are not changed in the EtherCAT datagram.

E.g., this allows for mapping bits from several ESCs into the same logical byte.

A frame/datagram addressing a logical address space which is not configured in the ESC will not change data in the ESC, and no data from the ESC is placed in the frame/datagram.

额外的FMMU characteristicsearch逻辑地址字节最多可以由一个FMMU（读）加一个FMMU（写）映射，或者由一个FMMU（读/写）映射。

如果同一个逻辑字节配置了两个或两个以上的FMMU（读或写方向相同），则使用编号较低的FMMU（配置地址空间较小），其他FMMU将被忽略。

一个或多个fmmu可能指向相同的物理内存，它们都被使用。

碰撞不会发生。

使用一个读写FMMU或两个FMMU（一个读，另一个写）是一样的，因为读写FMMU不能与同步管理器一起使用，因为独立的读写同步管理器不能配置为使用相同（或重叠）的物理地址范围。

任何地址都支持逐位读取。

没有映射到逻辑地址的比特在EtherCAT数据报中不会被改变。

例如，这允许将来自多个esc的位映射到相同的逻辑字节。

没有在ESC中配置的寻址逻辑地址空间的帧/数据报不会改变ESC中的数据，也不会将来自ESC的数据放在帧/数据报中。