Datum: 19. 1. 2024

Sistem Motor\_Control\_V2.0 (MC2) ima dva Motorja, za katera pošilja stanje nadzornemu krmilniku (supervisor) / PC-ju. Nadzorni krmilnik pošila referenčne hitrosti pozicije na (MC2). MC2 pošilja tudi svoje splošno stanje.

Bx :Byte X

bx: bit x

Seznam ID jev

|  |  |  |
| --- | --- | --- |
| **Sporočilo** | **ID** | **Smer** |
| Controller\_State | 0x400 | MC2 -> Nadzornik |
| Controller\_Mode | 0x401 | Nadzornik -> MC2 |
| Motor\_pos\_vel\_1 | 0x410 | MC2 -> Nadzornik |
| Motor\_pos\_vel\_ref\_1 | 0x411 | Nadzornik -> MC2 |
| Motor\_status\_1 | 0x412 | MC2 -> Nadzornik |
| Motor\_command\_1 | 0x413 | Nadzornik -> MC2 |
| Motor\_diag\_1 | 0x414 | MC2 -> Nadzornik |
| Motor\_pos\_vel\_2 | 0x420 | MC2 -> Nadzornik |
| Motor\_pos\_vel\_ref\_2 | 0x421 | Nadzornik -> MC2 |
| Motor\_status\_2 | 0x422 | MC2 -> Nadzornik |
| Motor\_command\_2 | 0x423 | Nadzornik -> MC2 |
| Motor\_diag\_1 | 0x424 | MC2 -> Nadzornik |
|  |  |  |

Vsa sporočila Motor\_reference imajo enako strukturo

Vse besede so zložene Big Endian

Bn pomeni n-ti byte sporočila

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Motor\_pos\_vel\_n** | | | | **0x4n0** | | | |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| Pos\_4 | Pos\_3 | Pos\_2 | Pos\_1 | Vel\_4 | Vel\_3 | Vel\_2 | Vel\_1 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Motor\_ref\_n** | | | | **0x4n1** | | | |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| Pos\_r\_4 | Pos\_r\_3 | Pos\_r\_2 | Pos\_r\_1 | Vel\_r\_4 | Vel\_r\_3 | Vel\_r\_2 | Vel\_r\_1 |

Pos\_n: 4 bytes trenutna pozicija [rad] (factor x1000, offset 1E6)

Pos\_r\_n: 4 bytes trenutna želena pozicija [rad] (factor x1000, offset 1E6)

Vel\_n: 4 bytes, trenutna hitrost [rad/s] (factor x1000, offset 1E6)

Vel\_r\_n: 4 bytes, trenutna želena hitrost [rad/s] (factor x1000, offset 1E6)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Motor\_status\_n** | | | | **0x4n2** | | | |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| MS1 | M\_ERROR | Res | Res | Res | Res | Res | Res |

|  |  |
| --- | --- |
| M\_ERROR |  |
| 0 | No error |
| 1….255 | Error code |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Motor\_command\_n** | | | | **0x4n3** | | | |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| MC1 | MC2 | Res | Res | Res | Res | Res | Res |

Vsebina MC1 in MS1. MC1 Pošlje nadzornik, motorni krmilnik periodično pošilja nazaj MS1 status. Bitna vsebina statusa

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **MC1 / MS1** | | | |  | | | |
| b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 |
| M\_DRIVE\_EN | M\_EN | M\_MODE | | | | Res | Res |

|  |  |
| --- | --- |
| M\_DRIVE\_EN | Omogočitev driverja DRV8833 |
| M\_EN | Omogočitev PWM izhoda motorja |
| M\_MODE | 0 STOP  1 POSITION  2 VELOCITY  3 COAST |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Motor\_diag\_1** | | | | **0x4n4** | | | |
| B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 |
| Reg\_out\_4 | Reg\_out\_3 | Reg\_out\_2 | Reg\_out\_1 | Er\_4 | Er\_3 | Er\_2 | Er\_1 |

Reg\_out\_1..4: Izhod regulatorja

Er\_1..4: Pogrešek v regulatorju [rad]