PMSM Wheel Drive v1.2 build01 communication protocol

1. A PMSM Wheel Drive v1.2 build01 **received** messages

1.1 Command messages

*CMD\_DISCOVER*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x00 (CAN\_MESSAGETYPE\_COMMAND)

DLC: 2

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CMD\_DISCOVER | 0x90 |

*CMD\_MODE*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x00 (CAN\_MESSAGETYPE\_COMMAND)

DLC: 4

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CMD\_MODE | 0x10 |
| 2 | U16 | MODE\_IDLE | 0x11 |
| MODE\_DRIVE | 0x12 |

*CMD\_DRIVE\_STATE*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x00 (CAN\_MESSAGETYPE\_COMMAND)

DLC: 4

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CMD\_DRIVE\_STATE | 0x50 |
| 2 | U16 | STATE\_STOPPED | 0x00 |
| STATE\_STARTED | 0x01 |

1.2 Configuration messages

*CFG\_CONTROL\_MODE*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x05 (CAN\_MESSAGETYPE\_CONFIG)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CFG\_CONTROL\_MODE | 0x01 |
| 4 | U16 | CONTROL\_TORQUE | 0x01 |
| CONTROL\_VELOCITY | 0x02 |

*CFG\_TRQUE\_LIMIT\_MIN*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x05 (CAN\_MESSAGETYPE\_CONFIG)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CFG\_TRQUE\_LIMIT\_MIN | 0x02 |
| 4 | F32 | Minimum current limit | - |

*CFG\_TRQUE\_LIMIT\_MAX*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x05 (CAN\_MESSAGETYPE\_CONFIG)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CFG\_TRQUE\_LIMIT\_MAX | 0x03 |
| 4 | F32 | Maximum current limit | - |

*CFG\_VELOCITY\_LIMIT*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x05 (CAN\_MESSAGETYPE\_CONFIG)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | CFG\_VELOCITY\_LIMIT | 0x04 |
| 4 | F32 | Velocity limit | - |

1.3 Refernce messages

*Torque/velocity reference*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x02 (CAN\_MESSAGETYPE\_REFERENCE)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | F32 | Current reference | - |
| 4 | F32 | Velocity reference | - |

2. A PMSM Wheel Drive v1.2 build01 **sent** messages

2.1 Response messages

*Resposne to Discover command*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x01 (CAN\_MESSAGETYPE\_RESPONSE)

DLC: 2

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | U16 | Device ID | - |

2.1 Measurement messages

*Drive measurements*

CAN ID:

Calss: 0x0B

Device: 0xnn

Type: 0x03 (CAN\_MESSAGETYPE\_MEASUREMENT)

DLC: 8

Data:

| Byte offset | Format | Name | Code |
| --- | --- | --- | --- |
| 0 | F32 | Current | - |
| 4 | F32 | Velocity | - |

All other CAN messages are restricted!