

Data sheet

FM 054 - Motion module (054-1DA00)

Technical data

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|---|---|
| Order no. | 054-1DA00 |
| Type | FM 054 - Motion module |
| Module ID | 0983 6800 |
| General information | |
| Note | - |
| Features | 1-channel RS422 with feedback 4 configurable in-/outputs I/O1... I/O4 Operating modes: CW/CCW, PLS/DIR, ENC/SIM |
| Current consumption/power loss | |
| Current consumption from backplane bus | 50 mA |
| Power loss | 1 W |
| Technical data digital inputs | |
| Number of inputs | 4 |
| Cable length, shielded | 1000 m |
| Cable length, unshielded | 600 m |
| Rated load voltage | - |
| Current consumption from load voltage L+ (without load) | - |
| Rated value | DC 20.4...28.8 V |
| Input voltage for signal "0" | DC 0...5 V |
| Input voltage for signal "1" | DC 11...28.8 V |
| Input voltage hysteresis | - |
| Signal logic input | - |
| Frequency range | - |
| Input resistance | - |
| Input current for signal "1" | 3 mA |
| Connection of Two-Wire-BEROs possible | yes |
| Max. permissible BERO quiescent current | 1.5 mA |
| Input delay of "0" to "1" | 1.5 ms |
| Input delay of "1" to "0" | 1.5 ms |
| Input filter delay | - |
| Number of simultaneously utilizable inputs horizontal configuration | 4 |
| Number of simultaneously utilizable inputs vertical configuration | 4 |
| Input characteristic curve | IEC 61131-2, type 3 |
| Initial data size | 4 Bit |
| Technical data digital outputs | |
| Number of outputs | 4 |
| Cable length, shielded | 1000 m |
| Cable length, unshielded | 600 m |
| Rated load voltage | DC 20.4...28.8 V |
| Reverse polarity protection of rated load voltage | - |
| Current consumption from load voltage L+ (without load) | - |
| Output voltage signal "1" at min. current | L+ (-0 V) |

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|---|-----------------|
| Output voltage signal "1" at max. current | L+ (-125 mV) |
| Output current at signal "1", rated value | 500 mA |
| Signal logic output | - |
| Output current at signal "0" max. (residual current) | 200 µA |
| Output delay of "0" to "1" | 1.5 ms |
| Output delay of "1" to "0" | 1.5 ms |
| Minimum load current | - |
| Lamp load | 10 W |
| Parallel switching of outputs for redundant control of a load | not possible |
| Parallel switching of outputs for increased power | not possible |
| Actuation of digital input | yes |
| Switching frequency with resistive load | max. 300 Hz |
| Switching frequency with inductive load | max. 0.5 Hz |
| Switching frequency on lamp load | max. 10 Hz |
| Internal limitation of inductive shut-off voltage | L+ (-45 V) |
| Short-circuit protection of output | yes, electronic |
| Trigger level | 1 A |
| Number of operating cycle of relay outputs | - |
| Switching capacity of contacts | - |
| Output data size | - |

Status information, alarms, diagnostics

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|----------------------------------|-----------------------|
| Status display | green LED per channel |
| Interrupts | yes, parameterizable |
| Process alarm | no |
| Diagnostic interrupt | yes, parameterizable |
| Diagnostic functions | yes |
| Diagnostics information read-out | possible |
| Supply voltage display | green LED |
| Group error display | red LED |
| Channel error display | red LED per channel |

Datasizes

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|------------------|----|
| Input bytes | 36 |
| Output bytes | 36 |
| Parameter bytes | 56 |
| Diagnostic bytes | 20 |

Isolation

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|---|------------------|
| Between channels | - |
| Between channels of groups to | - |
| Between channels and backplane bus | yes |
| Between areas | - |
| Max. potential difference between inputs and Mintern (Uiso) | DC 75 V/ AC 50 V |
| Insulation tested with | AC 500 V |

Technical data positioning module

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|---------------------------------|------------------|
| Number of channels | 1 |
| Cable length (motor supply) | - |
| Input voltage (rated value) | DC 24 V |
| Input voltage (permitted range) | DC 20.4...28.8 V |
| Motor current | - |

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|-------------------------------|----------------------------|
| Derating | - |
| Cable length (motor) | - |
| Power stage | RS422 |
| Short-circuit protection | yes |
| Brake chopper | - |
| PWM frequency | - |
| Pulse train frequency | 1 MHz |
| Micro steps | - |
| Steps per rotation | - |
| Type of encoder | A/B phase 24V single ended |
| Cable length (encoder) | - |
| Encoder frequency | 100 kHz |
| Encoder resolution (internal) | 24 Bit |
| Control type | open loop |
| Temperature sensor controller | yes |
| Temperature sensor H-bridge | - |

Operating modes position functions

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| Homing via homing switch | yes |
| Positioning via torque | - |
| Positioning without encoder | yes |
| Positioning with encoder | - |
| Speed control | yes |
| Torque control | - |

Housing

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| Material | PPE / PPE GF10 |
| Mounting | Profile rail 35 mm |

Mechanical data

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|------------------------------|----------------------------|
| Dimensions (WxHxD) | 12.9 mm x 109 mm x 76.5 mm |
| Net weight | 61 g |
| Weight including accessories | 61 g |
| Gross weight | 76 g |

Environmental conditions

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|-----------------------|-----------------|
| Operating temperature | 0 °C to 60 °C |
| Storage temperature | -25 °C to 70 °C |

Certifications

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|-------------------------|-----|
| UL certification | yes |
| KC certification | yes |
| UKCA certification | yes |
| ChinaRoHS certification | yes |