## Rotary drive unit ERMS-25-90-ST-M-H1-PLK-AA Part number: 8087819

**FESTO** 





## **Data sheet**

Feature	Value
Size	25
KC characters	KC EMC
Characteristics of logic input	Configurable Not galvanically isolated
Additional functions	User interface Integrated end-position sensing
Parameterization interface	IO-Link® User interface
Display	LED
Permissible voltage fluctuations	+/- 15 %
Homing	Fixed stop block positive Fixed stop block, negative
Max. cable length	15 m outputs 15 m inputs 20 m for IO-Link® operation
Logic input specification	Based on IEC 61131-2, type 1
Input switching logic	PNP (positive switching)
Shock resistance	Shock test with severity level 1 as per FN 942017-5 and EN 60068-2-27
Characteristics of digital logic outputs	Configurable Not galvanically isolated
Switching logic at outputs	PNP (positive switching)
Ready status indication	LED
Note on ambient temperature	Above an ambient temperature of 30°C, the power must be reduced by 2% per K.
Vibration resistance	Transport application test with severity level 1 as per FN 942017-4 and EN 60068-2-6
Logic interface, connection pattern	00992264
Position sensing	Motor encoder
Logic interface, connection technology	M12x1, A-coded as per EN 61076-2-101
Power supply, type of connection	Plug
Logic interface, connection type	Plug
Power supply, connection pattern	00995989
Power supply, connection technology	M12x1, T-coded as per EN 61076-2-111
Number of digital logic outputs 24 V DC	2
Number of digital logic inputs	2
DC nominal voltage	24 V
Power supply, number of pins/wires	4
Logic interface, number of poles/wires	8

Nominal current   3 A   20 ° C   Storage kemperature   20 ° C   60 ° C   Storage kemperature   20 ° C   60 ° C   Storage position sensor resolution   16 bit	Feature	Value
Storage temperature 2-0 °C 60 °C Rictor position sensor resolution 3-16 bit 3-17 bit 3-18	Max. current of digital logic outputs	100 mA
Rotor position sensor resolution		3 A
Mork rampe of logic input   24 V   7   7   7   7   7   7   7   7   7	Storage temperature	-20 °C 60 °C
Mork rampe of logic input   24 V   7   7   7   7   7   7   7   7   7	Rotor position sensor resolution	16 bit
Work range of logic Input		3000 mA
10 Link®, S10 mode support	·	24 V
IO-Link®, number of ports	· · · · · · · · · · · · · · · · · · ·	Yes
10 Link®, port class		1
IO Link®, communication mode  COM3 (230.4 kBd)  Protection class  III  O-Link®, service data contents IN  32 bit force 33 bit position 32 bit speed  IO Link®, process data content IN  1 bit (state device) 1 bit (state in) 1 bit (state out)  IO-Link®, process data width OUT  2 Byte  IO-Link®, process data content OUT  1 bit (move in) 1 bit (quid error) IO-Link®, process data content OUT  1 bit (move in) 1 bit (quid error) IO-Link®, process data vidth IN  2 Byte  IO-Link®, process data vidth IN  2 Byte  IO-Link®, process data vidth IN  3 Byte  IO-Link®, process data vidth IN  2 Byte  IO-Link®, minimum cycle time 1 ms  IO-Link®, minimum cycle time 2 link IO-Link®, minimum cycle time 3 link IO-Link®, minimum cycle time 1 link IO-Link®, minimum cycle time 1 link IO-Link®, minimum cycle time 2 link IO-Link®, minimum cycle time 3 link IO-Link®, process data vidth IN  2 Byte  IO-Link®, process data vidth IN  3 Byte  IO-Link®, process data vidth IN  4 link Inegrated device 1 link Inegrated dive 1 link Inegrated dive 1 link Integrated dive 1	·	
Protection class    III	·	
10 Link®, service data contents IN   32 bit force   32 bit position   32 bit speed   32 bit position   32 bit speed   32 bit		
32 bit postton   32 bit speed   10-Link®, process data content IN		
1 bit (state move)   1 bit (state in)   1 bit (state in)   1 bit (state in)   1 bit (state out)		32 bit position
ID-Link®, process data content OUT	IO-Link®, process data content IN	1 bit (state move) 1 bit (state in)
1 bit (move out) 1 bit (quite ren')  10-Link®, Connection technology 10-Link®, protocol version 10-Link®, data memory required 10-Link®, data memory required 10-Link®, data memory required 10-Link®, data memory required 140 rad/s² 17ype code 18MS 18HE lectromechanical rotary actuator With integrated drive with integrated drive with integrated drive with integrated gearbox 17ype of mounting 17ype	IO-Link®, process data width OUT	2 Byte
IO-Link®, protocol version   Device V 1.1     IO-Link®, process data width IN   2 Byte     IO-Link®, minimum cycle time   1 ms     IO-Link®, data memory required   500 byte     Angular acceleration   \$140 rad/s²     Type code   ERMS     Design   Electromechanical rotary actuator with integrated drive with integrated drive with integrated gearbox     Mounting position   Any   With internal thread     Rotation angle   90°     Gear ratio   9:1     Max. rotational speed   105 1/min     Torsional backlash   0.2 deg     Repetition accuracy   10.05 °     Max. axial force   350 N     Max. axial force   450 N     Permissible mass moment of inertia   0.0065 kgm²     Product weight   1472 g     Step angle with full step   1.8 deg     Step angle with full step   1.9 deg     Rotation common co	IO-Link®, process data content OUT	1 bit (move out)
IO-Link®, process data width IN   2 Byte     IO-Link®, minimum cycle time   1 ms     IO-Link®, minimum cycle time   500 byte     Angular acceleration   5140 rad/s²     Type code   ERMS     Design   Electromechanical rotary actuator   With integrated drive   with integrated drive   with integrated gearbox     Mounting position   Any     Type of mounting   With internal thread     Rotation angle   90°     Gear ratio   9:1     Max. rotational speed   1051/min     Torsional backlash   0.2 deg     Repetition accuracy   40.05°     Max. axial force   350 N     Max. ratial force   450 N     Permissible mass moment of inertia   0.0066 kgm²     Product weight   1472 g     Step angle with full step   1.8 deg     Step angle loterance   45%     Duty cycle   100%     Motor nominal current   3 A     Insulation protection class   B     Motor type   Stepper motor     Rotor position sensor   Absolute encoder, single-turn     Rotor position sensor   Absolute encoder, single-turn     Rotor position sensor measuring principle   Magnetic     Symbol   00997295     Certification   RCM compliance mark     Peak torque   2.7 Nm	IO-Link®, Connection technology	Plug
10-Link@, minimum cycle time   1 ms   500 byte	IO-Link®, protocol version	Device V 1.1
IO-Link®, data memory required     500 byte       Angular acceleration     \$140 rad/s²       Type code     ERMS       Design     Electromechanical rotary actuator With integrated drive with integrated gearbox       Mounting position     Any       Type of mounting     With internal thread       Rotation angle     90°       Gear ratio     9:1       Max. rotational speed     105 1/min       Torsional backlash     0.2 deg       Repetition accuracy     ±0.05°       Max. axial force     350 N       Max. axial force     450 N       Permissible mass moment of inertia     0.0065 kgm²       Product weight     1472 g       Step angle with full step     1.8 deg       Step angle tolerance     ±5%       Duty cycle     100%       Motor nominal current     3 A       Insulation protection class     B       Motor type     Stepper motor       Rotor position sensor     Absolute encoder, single-turn       Rotor position sensor measuring principle     Magnetic       Symbol     00997295       Certification     RCM compliance mark       2.7 Nm	IO-Link®, process data width IN	2 Byte
Angular acceleration s140 rad/s² Type code ERMS  Design Electromechanical rotary actuator With integrated drive with integrated gearbox  Mounting position Any Type of mounting With internal thread  Rotation angle 90° Gear ratio 9:1 Max. rotational speed 105 1/min Torsional backlash 0.2 deg  Repetition accuracy 40.05° Max. axial force 350 N  Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg  Step angle with full step 1.8 deg  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor measuring principle Magnetic  Symbol 0.0997295  Certification RCM compliance mark  Peak torque 1.7 Nm	IO-Link®, minimum cycle time	1 ms
Type code  ERMS  Electromechanical rotary actuator With integrated drive with integrated gearbox  Mounting position  Any  Type of mounting With internal thread  Rotation angle 90° Gear ratio 9:1 Max. rotational speed 105 1/min  Torsional backlash 0.2 deg Repetition accuracy 40.05° Max. axial force 350 N  Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg  Step angle vilerance 15% Duty cycle 100% Motor nominal current 3 A Insulation protection class B Motor type Rotor position sensor Rotor position sensor measuring principle Magnetic Symbol Certification RCM compliance mark Peak torque 2.7 Nm	IO-Link®, data memory required	500 byte
Design  Electromechanical rotary actuator With integrated drive with integrated drive with integrated gearbox  Mounting position  Any  Type of mounting  Rotation angle  90°  Gear ratio  9:1  Max. rotational speed  105 1/min  Torsional backlash  0.2 deg  Repetition accuracy  40.05°  Max. axial force  350 N  Max. axial force  350 N  Permissible mass moment of inertia  0.0065 kgm²  Product weight  1472 g  Step angle with full step  1.8 deg  Step angle tolerance  15%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Rotor position sensor  Rotor position sensor measuring principle  Magnetic  Symbol  Certification  RCM compliance mark  Peak torque  2.7 Nm	Angular acceleration	≤140 rad/s²
Mith integrated drive with integrated gearbox  Mounting position Any Type of mounting Rotation angle 90°  Gear ratio 9:1  Max. rotational speed 105 1/min Torsional backlash 0.2 deg Repetition accuracy ±0.05°  Max. axial force 350 N  Max. axial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg Step angle tolerance ±5% Duty cycle 100% Motor nominal current 3 A Insulation protection class B Motor type Rotor position sensor Rotor position sensor measuring principle Magnetic Symbol Oever in the surface with integrated drive with integrated gearbox With integrat	Type code	ERMS
Type of mounting  Rotation angle  Rotation angle  Rotation angle  Rotation angle  Rotation  Rotation angle  Rotation  Rotation angle  Rotation  Rotational speed  Rotational s	Design	With integrated drive
Rotation angle 90° Gear ratio 9:1  Max. rotational speed 105 1/min Torsional backlash 0.2 deg Repetition accuracy ±0.05° Max. axial force 350 N  Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm² Product weight 1472 g  Step angle with full step 1.8 deg Step angle tolerance ±5% Duty cycle 100% Motor nominal current 3 A Insulation protection class B Motor type Stepper motor Rotor position sensor measuring principle Magnetic Symbol 00997295 Certification RCM compliance mark Peak torque 2.7 Nm	Mounting position	Any
Gear ratio  Max. rotational speed  105 1/min  10rsional backlash  0.2 deg  Repetition accuracy  ±0.05 °  Max. axial force  350 N  Max. radial force  450 N  Permissible mass moment of inertia  0.0065 kgm²  Product weight  1472 g  Step angle with full step  1.8 deg  Step angle tolerance  ±5%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Rotor position sensor  Rotor position sensor measuring principle  Magnetic  Symbol  Certification  RCM compliance mark  Peak torque  105 1/min  10	Type of mounting	With internal thread
Max. rotational speed  Torsional backlash  0.2 deg  Repetition accuracy  \$0.05 °  Max. axial force  350 N  Max. radial force  450 N  Permissible mass moment of inertia  0.0065 kgm²  Product weight  1472 g  Step angle with full step  1.8 deg  Step angle tolerance  \$5%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Stepper motor  Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  RCM compliance mark  Peak torque  1008  1008  10097295  Certification  RCM compliance mark  2.7 Nm	Rotation angle	90°
Torsional backlash  Repetition accuracy  \$\frac{\pmath{\text{\text{brown}}}}{\pmath{\text{brown}}}} \text{ \$\frac{\pmath{\text{chispansion}}}{\pmath{\text{chispansion}}}}  \$\frac{\pmath{\text{ch	Gear ratio	9:1
Repetition accuracy ±0.05 °  Max. axial force 350 N  Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg  Step angle tolerance ±5%  Duty cycle 100%  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor Masour measuring principle Magnetic  Symbol 0.0997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Max. rotational speed	105 1/min
Max. axial force 350 N  Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg  Step angle tolerance ±5%  Duty cycle 100%  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Torsional backlash	0.2 deg
Max. radial force 450 N  Permissible mass moment of inertia 0.0065 kgm²  Product weight 1472 g  Step angle with full step 1.8 deg  Step angle tolerance ±5%  Duty cycle 100%  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Repetition accuracy	±0.05°
Permissible mass moment of inertia  O.0065 kgm²  Product weight  Step angle with full step  Step angle tolerance  ±5%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Stepper motor  Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  Peak torque  O.0065 kgm²  1472 g  0.0065 kgm²  1472 g  1472 g  188 deg  189 deg  598  189 deg  100%  Magnetic  O0997295  RCM compliance mark  2.7 Nm	Max. axial force	350 N
Product weight  Step angle with full step  1.8 deg  Step angle tolerance  ±5%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Stepper motor  Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  RCM compliance mark  Peak torque  1472 g  1472 g  1472 g  1472 g  1472 g  1480 g  1472 g  1480 g  1472 g  1480 g  1480 g  1490 g  149	Max. radial force	450 N
Step angle with full step  Step angle tolerance  ±5%  Duty cycle  100%  Motor nominal current  3 A  Insulation protection class  B  Motor type  Stepper motor  Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  RCM compliance mark  Peak torque  1.8 deg	Permissible mass moment of inertia	0.0065 kgm <sup>2</sup>
Step angle tolerance ±5%  Duty cycle 100%  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Product weight	1472 g
Duty cycle 100%  Motor nominal current 3 A  Insulation protection class B  Motor type Stepper motor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Step angle with full step	1.8 deg
Motor nominal current  Insulation protection class  Motor type  Stepper motor  Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  RCM compliance mark  2.7 Nm	Step angle tolerance	±5%
Insulation protection class  Motor type Stepper motor  Rotor position sensor Rotor position sensor measuring principle Magnetic Symbol 00997295 Certification RCM compliance mark Peak torque B Stepper motor Absolute encoder, single-turn Magnetic Symbol 00997295 Certification RCM compliance mark 2.7 Nm	Duty cycle	100%
Motor type Stepper motor  Rotor position sensor Absolute encoder, single-turn  Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Motor nominal current	3 A
Rotor position sensor  Rotor position sensor measuring principle  Symbol  Certification  RCM compliance mark  2.7 Nm	Insulation protection class	В
Rotor position sensor measuring principle Magnetic  Symbol 00997295  Certification RCM compliance mark  Peak torque 2.7 Nm	Motor type	Stepper motor
Symbol 00997295 Certification RCM compliance mark Peak torque 2.7 Nm	Rotor position sensor	Absolute encoder, single-turn
Certification RCM compliance mark Peak torque 2.7 Nm	Rotor position sensor measuring principle	Magnetic
Peak torque 2.7 Nm	Symbol	00997295
· · · · · · · · · · · · · · · · · · ·	Certification	RCM compliance mark
Interface code, base E8-55	Peak torque	2.7 Nm
	Interface code, base	E8-55

Feature	Value
Degree of protection	IP40
Ambient temperature	0 ℃ 50 ℃
Relative air humidity	0 - 85 %
Note on materials	Contains paint-wetting impairment substances RoHS-compliant
CE marking (see declaration of conformity)	As per EU EMC directive As per EU RoHS directive
Material of flange	Wrought aluminum alloy, anodized
Housing material	Wrought aluminum alloy, anodized