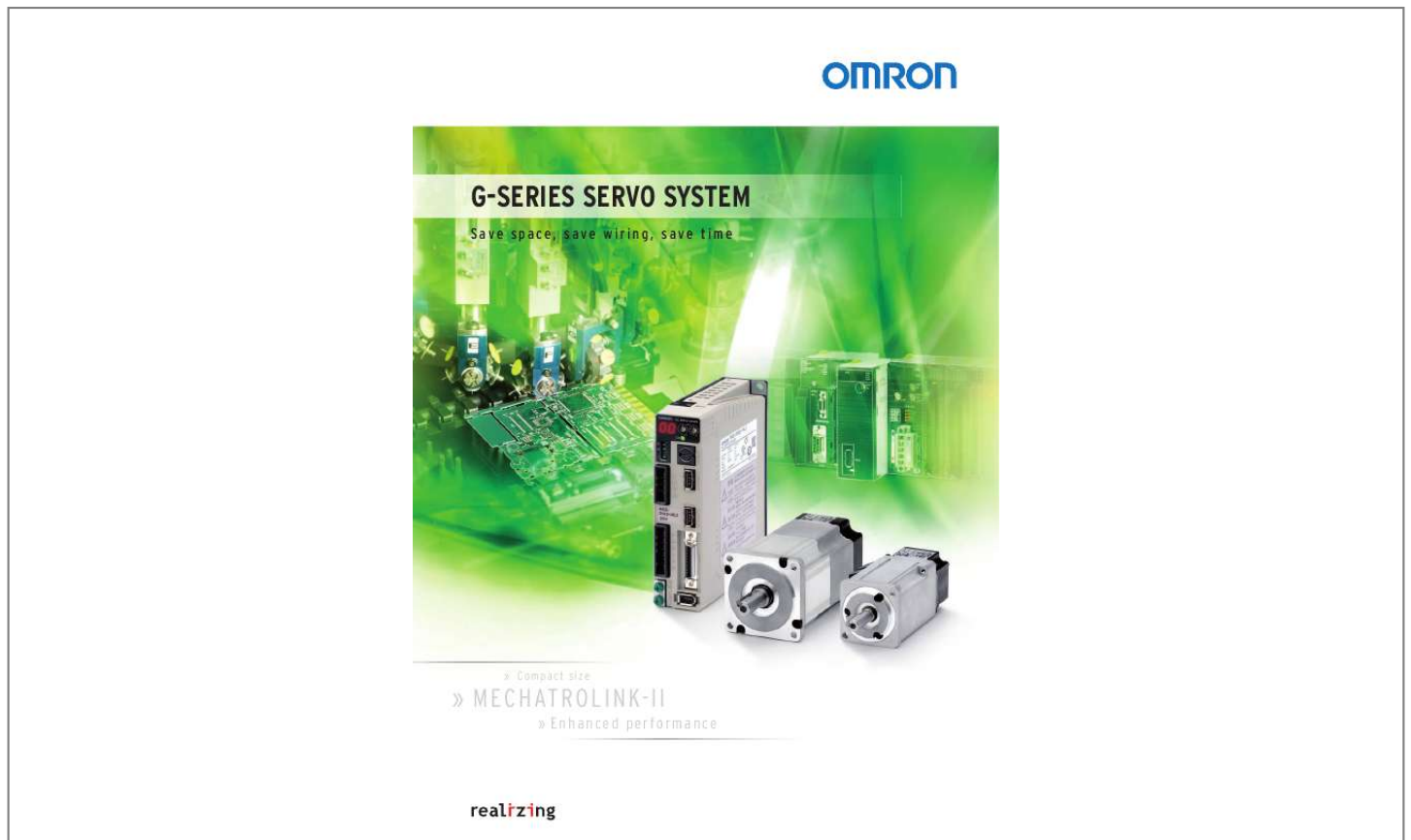




Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for OMRON R88D-GN. You'll find the answers to all your questions on the OMRON R88D-GN in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual OMRON R88D-GN
User guide OMRON R88D-GN
Operating instructions OMRON R88D-GN
Instructions for use OMRON R88D-GN
Instruction manual OMRON R88D-GN



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Manual abstract:

footprint 15 x 4 cm · Auto-tuning for easy and quick start-up · Built-in MECHATROLINK-II motion bus reduces cabling and allows remote servo configuration and diagnosis · High starting torque: 300% for 3 secs. · Positioning, speed or torque control · Separate power and control power supply · Fast and accurate positioning · Servomotor range from 50 W to 1.5 kW · Incremental and absolute encoder available · Cylindrical and flat servo motors up to 3,000 rpm · Compatible with SmartStep 2 servomotors · Vibration suppression Fast and simple auto-tuning The graphs show a move profile with a G-series servo in an application with an inertia ratio of 16:1. Tuning is possible via the easy to use CX-Drive, and takes just 1 minute to complete. The result is superb control, ensuring the servo and hence machine operates at its optimal point, with next to zero knowledge required from the user. Once running, the on-board real time auto-tuning function takes care of the servo operation relative to the load inertia, again ensuring the quality of the finished produced part. In addition, numerous suppression and notch filters are available to suppress machine vibration independent of machine direction. MECHATROLINK-II Before auto-tuning Speed Command speed Torque After auto-tuning Torque Command speed Speed G-Series + NCF: Optimum positioning for up to 16 axes Complete and compact positioning system In a minimum of space you can have a complete and powerful PTP system when combining the CJ1W-NCF71 unit and the G-Series servo. This configuration offers 16-axis positioning with linear and circular interpolation, as well as interrupt feeding. The NCF and the G-Series offer the ideal solution for applications where space is tight.

NCF key features and benefits PLCopen A global standard for industrial control programming, PLCopen provides a standardized programming interface to harmonize the way people design and operate industrial control. · 16 axes, point-to-point positioning over ML II · System scalability with models for 2, 4 and 16 axes · Easy, quick and reliable setup · Optimized for positioning applications · Simplified wiring to drives · Integration with Omron Smart Platform CJ1W-NC271 CJ1W-NC471 CJ1W-NCF71 Full transparency from a remote host When the G-Series is controlled by NCF positioning unit, the servo drive is fully transparent to a remote PC. This is achieved over MECHATROLINK-II from the G-Series to the PLC and over any serial or Ethernet link between the PLC and PC. Hence complying fully with Omron Smart Platform. 2 axes 4 axes 16 axes Up to 16 axes R88D-GN@/R88M-G@ G-Series servo system Compact in size big in features.

@@@ One parameter rigidity setting. @@ External regeneration resistor optionally. @@@@ current A (rms) Rated speed min-1 Max. @ mass Brake specifications min-1 N-m/A (rms) kg·m²×10⁻⁴ Multiple of (JM) kW/s 0.14 0.

025 0.19 0.051 30 10.4 230 V G05030@ G10030@ G20030@ G40030@ G75030@ G1K030T G1K530T G1K020T G1K520T G90010T 50 100 200 400 750 1000 1500 1000 1500 900 0.16 0.32 0.64 1.3 2.4 3.18 4.

77 4.8 7.15 8.62 0.45 0.90 1.78 3.67 7.05 9.1 12.

8 13.5 19.6 18.4 1.1 1.

6 2.6 4 7.2 9.4 5.6 9.

4 7.6 3.4 4.9 7.9 12.1 21.4 28.5 17.1 28.5 17VDC between the power terminals and FG terminal Totally-enclosed, self-cooling, IP65 (excluding shaft opening and lead wire ends) Vibration acceleration 49 m/s² Flange-mounted 0.

03 7 0.29 0.29 50 15 N N Kg (without brake) Kg (with brake) 68 58 0.7 0.9 1.3 2 24VDC +/-10% 0.09 10 0.41 1.27 60 W N·m N·m A (rms) A (rms) min-1 min-1 N·m/A (rms) kg·m²×10⁻⁴ Multiple of (JM) kW/s 10.2 0.

34 0.1 GP10030@ 100 0.32 0.86 1 3.1 230 V GP20030@ 200 0.

64 1.8 1.6 4.9 3000 5000 0.42 0.

35 20 11.5 Incremental (10000 pulses) Incremental /Absolute encoder(17 bits) 245 98 1.8 2.5 25.5 0.54 0.64 GP40030@ 400 1.3 3.65 2.5 7.

5 Torque-speed characteristics R88M-GP10030H/T (100 W) R88M-GP20030H/T (200 W) R88M-GP40030H/T (400 W) (N·m) (N·m) (N·m) 1.0 0.86 0.86 2.0 1.8 1.8 (4500) 4.0 3.65 3.65 (3600) 2.

0 0.78 Repetitive usage 0.5 0.32 0.32 0.

19 Repetitive usage 1.0 0.64 0.64 Continuous usage 0 0.38 Repetitive usage 2.

0 1.3 1.3 Continuous usage 0 Continuous usage 0 1000 2000 3000 4000 5000 (r/min) 1000 2000 3000 4000 5000 (r/min) 1000 2000 3000 4000 5000 (r/min)

12 AC servo systems Dimensions Servo motors Cylindrical type 3000 r/min (230 V, 50-100 W) Dimensions (mm) Model R88M-G05030@-@S2 R88M-G10030@-@S2 Without brake LL 72 92 With brake LL 102 122 26.5 46.5 LN Flange surface D 30h7 Shaft end S 8h6 B 3h9 0.3 0.5 Aprox.

@@@ If a backup battery is connected, an encoder cable with a battery is not required. *2 Connect B2-B3 for the models with a built-in regeneration resistor (models from 750 W). *3 If the amount of regeneration is large, connect an external regeneration resistor to B1-B2.

For the models from 750 W, disconnect B2-B3. G-Series servo system 15 Ordering information A G-Series Cylindrical type Servo Motor B G-Series MECHATROLINK-II Servo Drive AC SERVO DRIVER 01 Personal computer: Software CX-One ADR 23 9 01 J 23 X10 X1 COM SP 3000 rpm (50-750W) 3000 rpm (1000-1500 W) 2000 rpm (1000-1500 W) 1000 rpm (900 W) IM G CN3 CN6 I K MECHATROLINK-II Motion controllers 8 4 L Filter M External regenerative resistor A G-Series Flat type Servo Motor D Power cable 3000 rpm (100-400 W) C Encoder cables E Brake cables Note: The symbols ABCDE... show the recommended sequence to select the components in a G-Series servo system Servo drives Symbol Specifications 1 phase 200 VAC 100 W 200 W 400 W 750 W 1.0 kW 1.5 kW Servo drive model R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN08H-ML2 R88D-GN10H-ML2 R88D-GN15H-ML2 B Compatible rotary servo motors Cylindric type R88M-G05030@ R88M-G10030@ R88M-G20030@ R88M-G40030@ R88M-G75030@ R88M-G1K020T@ R88M-G90010T@ R88M-G1K030T@ R88M-G1K520T@ R88M-G1K530T@ A Control cables (for CN1) Symbol MECHATROLINK-II cables (for CN6) Model R88A-CNU01C XW2Z-100J-B33 XW2Z-200J-B33 XW2B-20G4 XW2B-20G5 XW2D-20G6 Symbol F G H Connect to Servo drive I/O signals Terminal block cable 1m 2m Terminal block - Name I/O connector kit K Computer cable (for CN3) Symbol I Name Computer cable RS232 2m Model R88A-CCG002P2 Footprint filters Symbol Applicable servodrive R88D-GN01H@ R88D-GN02H@ R88D-GN04H@ R88D-GN08H@ R88D-GN10H@ R88D-GN15H@ Filter model Rated Leak- Rated current age voltage current 3.5 mA 250 VAC single 3.5 mA phase 3.5 mA 3.

5 mA MECHATROLINK-II Motion controllers Symbol J Name Model Trajexia stand-alone motion controller TJI-MC04 (4 axes) TJI-MC16 (16 axes) Trajexia-PLC motion controller CJ1W-MCH72 Position Controller Unit for CJI PLC CJ1W-NCF71 (16 axes) CJ1W-NC471 (4 axes) CJ1W-NC271 (2 axes) Position Controller Unit for CSI PLC CSIW-NCF71 (16 axes) CSIW-NC471 (4 axes) CSIW-NC271 (2 axes) L External regenerative resistor Symbol M Computer software Specifications Configuration and monitoring software tool for servo drives and inverters.

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(CX-drive version 1.70 or higher) Complete OMRON software package including CX-drive. (CX-One version 3.10 or higher) Model CX-drive CX-One 16 5
67 MECHATROLINK-II cables Position control unit CJ1W-NC_71 CS1W-NC_71 F CNI Servo drive I/O signals Motion controller unit TJJ-MC04/16 CJ1W-
MCH72 G H Terminal block for Servo drive I/O signals Flat type R88M-GP10030@ R88M-GP20030@ R88M-GP40030@ - Specifications
MECHATROLINK-II Terminator resistor MECHATROLINK-II cables Length 0.
5 m 1m 3m 5m 10 m 20 m 30 m Model JEPMC-W6022-E JEPMC-W6003-A5-E JEPMC-W6003-01-E JEPMC-W6003-03-E JEPMC-W6003-05-E JEPMC-
W6003-10-E JEPMC-W6003-20-E JEPMC-W6003-30-E R88A-FIK102-RE 2.4 A R88A-FIK104-RE 4.1 A R88A-FIK107-RE 6.6 A R88A-FIK114-RE 14.2 A
Regenerative resistor unit model R88A-RR08050S R88A-RR080100S R88A-RR22047S R88A-RR50020S Specifications 50 , 80 W 100 , 80 W 47 , 220 W 20 ,
500 W AC servo systems Cylindrical servo motors 3000/2000/1000 r/min (50 - 1.
5 kW) Symbol Specifications Voltage Encoder and design 230 V Incremental encoder (10000 pulses) Straight shaft with key & tap With brake (50-750 W)
Servo motor model Speed Design 3000 min-1 Without brake Rated torque 0.16 Nm 0.32 Nm 0.64 Nm 1.3 Nm 2.4 Nm 0.16 Nm 0.32 Nm 0.64 Nm 1.3 Nm 2.
4 Nm 0.16 Nm 0.32 Nm 0.64 Nm 1.3 Nm 2.4 Nm 3.18 Nm 4.77 Nm 0.16 Nm 0.32 Nm 0.
64 Nm 1.3 Nm 2.4 Nm 3.18 Nm 4.77 Nm 4.
8 Nm 7.15 Nm 4.8 Nm 7.15 Nm 8.62 Nm Capacity 50 W 100 W 200 W 400 W 750 W 50 W 100 W 200 W 400 W 750 W 50 W 100 W 200 W 400 W 750 W 1 kW
1.
5 kW 50 W 100 W 200 W 400 W 750 W 1 kW 1.5 kW 1 kW 1.5 kW 1 kW 1.5 kW 900 W R88M-G05030H-S2 R88M-G10030H-S2 R88M-G20030H-S2 R88M-
G40030H-S2 R88M-G75030H-S2 R88M-G05030H-BS2 R88M-G10030H-BS2 R88M-G20030H-BS2 R88M-G40030H-BS2 R88M-G75030H-BS2 R88M-
G05030T-S2 R88M-G10030T-S2 R88M-G20030T-S2 R88M-G40030T-S2 R88M-G75030T-S2 R88M-G1K030T-S2 R88M-G1K530T-S2 R88M-G05030T-BS2
R88M-G10030T-BS2 R88M-G20030T-BS2 R88M-G40030T-BS2 R88M-G75030T-BS2 R88M-G1K030T-BS2 R88M-G1K530T-BS2 R88M-G1K020T-S2 R88M-
G1K520T-S2 R88M-G1K020T-BS2 R88M-G1K520T-BS2 R88M-G90010T-S2 R88M-G90010T-BS2 Compatible servo drives B R88D-GN01H-ML2 R88D-
GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN08H-ML2 R88D-GN01H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2
R88D-GN08H-ML2 R88D-GN01H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN08H-ML2 R88D-GN15H-ML2 R88D-GN15H-
ML2 R88D-GN01H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN08H-ML2 R88D-GN15H-ML2 R88D-GN15H-ML2 R88D-
GN10H-ML2 R88D-GN15H-ML2 R88D-GN10H-ML2 R88D-GN15H-ML2 R88D-GN15H-ML2 R88D-GN15H-ML2 A Absolute/ incremental encoder (17 bits)
Straight shaft with key & tap Without brake With brake (900-1500 W) 2000 min-1 Without brake With brake 1000 min-1 Without brake With brake Flat type
servo motors 3000 r/min (100 - 400 W) Symbol Specifications Voltage Encoder and design 230 V Incremental encoder (10000 pulses) Straight shaft with key
& tap Servo motor model Without brake Rated torque 0.32 Nm 0.64 Nm 1.3 Nm 0.32 Nm 0.64 Nm 1.3 Nm 0.
32 Nm 0.64 Nm 1.3 Nm 0.32 Nm 0.64 Nm 1.3 Nm Capacity 100 W 200 W 400 W 100 W 200 W 400 W 100 W 200 W 400 W 100 W 200 W 400 W 100 W 200 W 400 W R88M-
GP10030H-S2 R88M-GP20030H-S2 R88M-GP40030H-S2 R88M-GP10030H-BS2 R88M-GP20030H-BS2 R88M-GP40030H-BS2 R88M-GP10030T-S2
R88M-GP20030T-S2 R88M-GP40030T-S2 R88M-GP10030T-BS2 R88M-GP20030T-BS2 R88M-GP40030T-BS2 Compatible servo drives B R88D-GN01H-
ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-
GN04H-ML2 R88D-GN01H-ML2 R88D-GN02H-ML2 R88D-GN04H-ML2 A With brake Absolute/ incremental encoder (17 bits) Straight shaft with key & tap
Without brake With brake Encoder Cables Symbol C Specifications Encoder cable for absolute encoder (50-750 W) R88M-G(050/100/200/400/750)30T-@
R88M-GP(100/200/400)30T-@ Encoder cable for Incremental encoder (50-750 W) R88M-G(050/100/200/400/750)30H-@ R88M-GP(100/200/400)30H-@
Encoder cable for Absolute encoder (900-1500 W) R88M-G(1K0/1K5)30T-@ R88M-G(1K0/1K5)20T-@ R88M-G90010T-@ 1.5 m 3m 5m 10 m 15 m 20 m 1.5 m
3m 5m 10 m 15 m 20 m 1.5 m 3m 5m 10 m 15 m 20 m Model R88A-CRGA001-5CR-E R88A-CRGA003CR-E R88A-CRGA005CR-E R88A-CRGA010CR-E
R88A-CRGA015CR-E R88A-CRGA020CR-E R88A-CRGA001-5CR-E R88A-CRGA003CR-E R88A-CRGA005CR-E R88A-CRGA010CR-E R88A-
CRGA015CR-E R88A-CRGA020CR-E R88A-CRGC001-5NR-E R88A-CRGC003NR-E R88A-CRGC005NR-E R88A-CRGC010NR-E R88A-CRGC015NR-E
R88A-CRGC020NR-E Appearance G-Series servo system 17 Absolute Encoder Battery cable Symbol Specifications Absolute Encoder battery cable Model
Battery not included 0.3 m R88A-CRGD0R3C One R88A-BAT01G 0.
3 m R88A-CRGD0R3C-BS Battery included Absolute Encoder backup battery 2,000 mA.h 3.6V R88A-BAT01G Appearance C Battery holder Note: The
absolute encoder battery cable is only an extension and must be used with an absolute encoder cable. Power cables Symbol Specifications For servomotors
from 50 to 750W R88M-G(050/100/200/400/750)30@ R88M-GP(100/200/400)30@ For servomotors with brake, a separate cable (R88A-CAGA@BR-E) is
needed Model 1.5 m R88A-CAGA001-5SR-E 3m 5m 10 m 15 m 20 m R88A-CAGA003SR-E R88A-CAGA005SR-E R88A-CAGA010SR-E R88A-CAGA015SR-E
R88A-CAGA020SR-E R88A-CAGB001-5SR-E R88A-CAGB003SR-E R88A-CAGB005SR-E R88A-CAGB010SR-E R88A-CAGB015SR-E R88A-CAGB020SR-E
R88A-CAGB003BR-E R88A-CAGB005BR-E R88A-CAGB010BR-E R88A-CAGB015BR-E R88A-CAGB020BR-E Appearance D For servomotors from 900 to
1.
5 kW without brake 1.5 m R88M-G(1K0/1K5)30T-S2 3m R88M-G(1K0/1K5)20T-S2 5m R88M-G90010T-S2 10 m 15 m 20 m For servomotors from 900 to 1.5
kW with brake R88M-G(1K0/1K5)30T-BS2 R88M-G(1K0/1K5)20T-BS2 R88M-G90010T-BS2 3m 5m 10 m 15 m 20 m 1.5 m R88A-CAGB001-5BR-E Brake
cable (for 50-750W servomotors) Symbol Specifications Brake cable only. For servomotors from 50 to 750W with brake R88M-
G(050/100/200/400/750)30@-BS2, R88M-GP(100/200/400)30@-BS2 3m 5m 10 m 15 m 20 m Model 1.
5 m R88A-CAGA001-5BR-E R88A-CAGA003BR-E R88A-CAGA005BR-E R88A-CAGA010BR-E R88A-CAGA015BR-E R88A-CAGA020BR-E Appearance E
Connectors for power, encoder and brake cables Specifications Connectors for power cables Connectors for encoder cables Motor side Motor side Motor
side Motor side Motor side Connector for brake cable Motor side Applicable Servomotor R88M-G(050/100/200/400/750)30@, R88M-
GP(100/200/400)30@ R88M-G(1K0/1K5)30@-S2, R88M-G(1K0/1K5)20@-S2, R88M-G90010@-S2 (without brake) R88M-G(1K0/1K5)30@-BS2, R88M-
G(1K0/1K5)20@-BS2, R88M-G90010@-BS2 (with brake) R88M-G(050/100/200/400/750)30T-@, R88M-GP(100/200/400)30T-@ (Absolute encoder) R88M-
G(050/100/200/400/750)30H-@, R88M-GP(100/200/400)30H-@ (Incremental encoder) R88M-G(1K0/1K5)30T-@, R88M-G(1K0/1K5)20T-@, R88M-
G90010T-@ R88M-G(050/100/200/400/750)30@-BS2, R88M-GP(100/200/400)30@-BS2 Model R88A-CNG01A MS3108E20-4S MS3108E20-18S R88A-
CNW01R R88A-CNG01R R88A-CNG02R MS3108E20-29S R88A-CNG01B Drive side (CN2) - ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To
convert millimeters into inches, multiply by 0.



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