

Motion Control

**Do-more H2 Series PLC to *SureStep* Stepper Drive
with *C-more* Micro-Graphic Panel (HMI)
Rotary Index Table Station – Part 1 thru 5
VID: L-PC-DM-STP-001**

Bill of Materials

PLC:

- (1) Do-more H2 series PLC CPU module, 192k words total (64k words ladder (flash memory), 128k words user data memory (SRAM with battery backup)). Ladder programming, real time clock/calendar, three built-in communications ports: (1) RS-232 port supports programming, K-sequence slave, MODBUS RTU master/slave and ASCII IN/OUT; (1) USB port supports programming; (1) Ethernet port supports programming, Do-more Ethernet I/O, TCP/IP, UDP/IP and Modbus/TCP. Supports bumpless run-time editing and 2000 PID loops. Battery included. Requires Do-more Designer programming software (free download online). User manual H2-DM-M available as a free download, or purchase hard copy separately. ADC p/n **H2-DM1E**.
- (1) 6-slot base, requires external 110-220 VAC power, 24VDC 300mA isolated auxiliary output power, local I/O expandable. Replaces D2-06B. ADC p/n **D2-06B-1**.
- (1) 16-point 24VDC current sinking/sourcing input module, 2 commons (isolated), European type removable terminal. ADC p/n **D2-16ND3-2**.
- (2) 8-point 12-24 VDC current sinking/sourcing input module, 1 common (2 common terminals), removable terminal. ADC p/n **D2-08ND3**.
- (1) 8-point 12-24 VDC current sinking output module, 1 common (2 common terminals), 0.3A/point, 2.4A/module, fused per common (non-replaceable), removable terminal. ADC p/n **D2-08TD1**.

4-20mA ANALOG CURRENT INPUT MODULE:

- (1) 4-channel analog input module, 12-bit resolution, range: 4-20 mA. ADC p/n **F2-04AD-1**.

ZIPLink Pre-Wired Connection Cables, Modules and PLC Cables:

- (1) ZIPLink 16-point sensor input module, 24VDC, LED indication on each input. Mounts on 35mm DIN rail part # DN-R35S1. ADC p/n **ZL-LTB16-24**, \$62.00 each. (Use with D2-16ND3-2 16-point DC input module.)
- (1) ZIPLink PLC cable, connects DirectLOGIC 205 PLC I/O modules with 19 terminals to ZL-RTB20, ZL-RFU20, ZL-RRL16-24, or ZL-LTB16-24 ZIPLink module with a 24-pin connector, 24AWG, 0.5 meter (1.6 ft.) length. ADC p/n **ZL-D2-CBL19**, \$37.50 each. (Use with D2-16ND3-2 16-point DC input module.)
- (4) ZIPLink 20-pole feedthrough connector module, mounts on 35mm DIN rail part # DN-R35S1. ADC p/n **ZL-RTB20**, \$20.00 each. (Use with D2-08ND3 DC Input module, D2-08TD1 DC output module, and F2-04AD-1 analog input module.)
- (4) ZIPLink PLC cable, connects DirectLOGIC 205 PLC I/O modules with 10 terminals to ZL-RTB20 ZIPLink module with a 24-pin connector, 24AWG, 0.5 meter (1.6 ft.) length. ADC p/n **ZL-D2-CBL10**, \$21.00 each. (Use with D2-08ND3 DC Input module, D2-08TD1 DC output module, and F2-04AD-1 analog input module.)

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OPERATOR INTERFACE (HMI):

(1) C-more EA9 series touch screen interface panel, 6-inch color TFT (5.7 inch viewable screen), 64k colors, 320 x 240 pixel QVGA screen resolution, 800 MHz CPU, 12-24 VDC powered, NEMA 4/4X, IP65 (when mounted correctly; for indoor use only), non-replaceable LED backlight. Includes (3) serial ports, USB 2.0 Type A and B ports and Ethernet port; supports SD memory card. Compatible with EA9-PGMSW programming software version 5.0 or later. ADC p/n **EA9-T6CL**.

(1) AC/DC Adapter for C-more EA7 and EA9 series touch panels; powered from a 100-240 VAC, 50/60 Hertz power source. Provides 24VDC at 1.5A. Power Fault features help protect data being logged to Compact Flash or SD card during power failures. C-more EA7 series panels must have firmware version 1.21 Build 6.18E or higher for proper operation. ADC p/n **EA-AC**.

COMMUNICATIONS – PLC TO HMI:

(1) STRIDE SlimLine industrial unmanaged 5-port Ethernet switch, Lexan housing, -10 to +60 deg. C operating temperature range, five 10/100BaseT RJ45 Ethernet ports. Redundant power inputs with surge and spike protection, auto-crossover, DIN rail mounting. Supports Store and Forward wire speed switching and full-duplex with flow control. UL/CUL1604 (Class I, Div. 2, Groups A, B, C, D) and CE marked. ADC p/n **SE-SW5U**.

(1) Ethernet straight-through patch cable, Cat5e STP (twisted pairs with overall foil shield), 3 ft. (0.9m) length, orange PVC cable jacket. RJ45 male connectors, 350 MHz, 4-pair 24AWG stranded copper. Can support 10 / 100 / 1000 Mbps; exceeds Category 5e cable specifications. ADC p/n **C5E-STPOR-S3**.

(1) Ethernet straight-through patch cable, Cat5e STP (twisted pairs with overall foil shield), 3 ft. (0.9m) length, black PVC cable jacket. RJ45 male connectors, 350 MHz, 4-pair 24AWG stranded copper. Can support 10 / 100 / 1000 Mbps; exceeds Category 5e cable specifications. ADC p/n **C5E-STPBK-S3**.

STEPPER SYSTEM:

(1) SureStep stepper motor, dual shaft, 166 oz-in holding torque, 2.8 amps/phase, 1.8 degrees / full step (200 steps/revolution), NEMA size 23, bipolar. 12-inch cable contains 4 leads terminated with a connector. ADC p/n **STP-MTR-23055D**.

(1) SureStep microstepping drive, max 10A per phase, 2-phase bipolar PWM controlled current, 24-80 VDC powered, optically isolated digital inputs for Step, Direction, and Enable. Software selectable microstep modes (200 to 512k steps/rev), software selectable idle current cutback, capable of running step/direction, CW/CCW, A/B Quad, analog input (velocity mode), internal indexing and serial command control (via RS-232 communication). Advanced features include anti-resonance damping, torque ripple smoothing, command signal filtering, self-test mode and circuit protection (overvoltage, undervoltage, overtemp, motor/wiring short circuit detection). 10 ft. RS-232 cable included for programming and/or communications to drive, female DB9 to modular (RJ11) 6P4C connector. Setup software available for purchase on CD or can be downloaded for free from AutomationDirect Web site. ADC p/n **STP-DRV-80100**.

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(1) Power supply for SureStep stepping systems, linear, dual output with 48VDC at 5A (at full load) unregulated and 5VDC at 0.5A regulated. 120/240 VAC, 50/60 Hz supply voltage, overcurrent protection. ADC p/n **STP-PWR-4805**.

(1) 20 ft. extension cable for use with all SureStep stepping motors less than 5A, terminated with mating connector. Use with STP-MTR-xxxxx motors. ADC p/n **STP-EXT-020**.

COMMUNICATIONS – PLC TO STEPPER DRIVE:

(1) ZIPLink Communication Cable for SureStep drives, 6P4C RJ11 connector to 6-pin RJ12 connector, 3-wire, RS-232, 26AWG, 2.0 meter (6.6 ft.) length. Connects STP-DRV-4850 or STP-DRV-80100 SureStep drives to a DL05 PLC, CLICK PLC, Do-more PLC, or Productivity Series. ADC p/n **STP-232RJ12-CBL-2**.

ENCODER & HARDWARE:

(1) Koyo encoder, absolute, gray code, medium duty, 9-bit (360 pulses per revolution), 8mm solid shaft, 50mm diameter body, 10-26 VDC, NPN open collector, IP65 (splash proof), 2-meter (6.5 ft.) cable exit. Mounting screws included. ADC p/n **TRD-NA360NWD**.

(1) Right angle bracket, metal, for TRD-N/NH/NA series encoders. Bracket mounting screws included. ADC p/n **JT-035D**.

(1) Metric to S.A.E. coupling, 8mm to 0.25 inch, aluminum alloy, for TRD-N/NA and TRDA-2E series encoders. ADC p/n **MCGL20-8-635**.

POWER LINE FILTER:

(1) Eaton AEGIS Series powerline filter, with surge protection and EMI / RFI filtering, 120VAC input, 5A rated load, status indicating LED, 5kA SCCR, integral 35mm DIN rail attachment. Meets UL1283 and 1449 requirements. ADC p/n **ADPV12005**.

PANEL MOUNT POWER RECEPTACLE:

(1) Three-receptacle DIN rail mounted convenience outlet, 125 Volts, entire module rated for a maximum of 15 amps. Used for powering laptop computers and test equipment. ADC p/n **FA-REC3**.

24VDC POWER SUPPLY:

(1) RHINO switching power supply, 24VDC (adjustable), 2.5A (60W) output; 85-264 VAC / 85-375 VDC universal input; foldback short circuit protection, overvoltage protection; slim-line UL 94V-0 rated plastic case with integral 35mm DIN rail mounting adapter, removable screw terminal plugs; status indication LED; voltage output for operation monitoring. UL 508 listed, UL 60950 recognized and CE marked. Plastic 35mm DIN rail insert provided for easy panel mounting. ADC p/n **PSP24-060S**.

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SENSORS:

(1) Wenglor photoelectric laser distance measuring sensor, 50 x 50 mm rectangular housing, reflex (diffuse), CMOS technology, 18-30 VDC, 8-wire, 4-20 mA or 0-10 VDC analog output, 30-80 mm measuring range, 1000/s (1kHz) measurement rate, Class 1 red laser, M12 quick-disconnect. Mounting hardware included. Purchase cable separately. ADC p/n **OPT2002**.

(1) M12 cable for quick-disconnect sensors, 12mm right-angle female plug, 8-pole, 3 meter (9.8 feet) length, gray PUR outer jacket. ADC p/n **7000-17061-2950300**.

(2) Inductive proximity sensor, 12mm diameter, triple sensing, 10-30 VDC, 3-wire, NPN, shielded, 6mm nominal sensing distance, normally open output, 800Hz switching frequency, M12 quick-disconnect. Mounting hex nuts included. Purchase cable separately. ADC p/n **AM1-AN-5H**.

(2) M12 cable for quick-disconnect sensors, 12mm right-angle female, 4-pole, gray PVC outer jacket, 2 meter (6.5 ft) length, IP67 rated. **ADC p/n CD12L-0B-020-C0**.

(2) Mounting bracket, for 12mm sensors, metal, axial. ADC p/n **ST12A**.

PUSH BUTTONS:

(1) Pushbutton, 22mm metal, twist-to-release, red 40mm mushroom operator, 1 N.C. contact block. Typically used in Emergency Stop applications. ADC p/n **GCX1131**.

(1) Pushbutton, 22mm metal, momentary, LED illuminated, clear, 120 VAC/DC, extended operator, 1 N.O. contact block. ADC p/n **GCX1215-120L**.

(1) Legend plate, aluminum, with red field, engraved 'EMERG. STOP'. ADC p/n **E22NS13**.

(1) Legend plate, aluminum, with black field, engraved 'POWER ON'. ADC p/n **E22NS80**.

RELAY, SOCKET, SURGE SUPPRESSOR:

(1) Octal control relay, 120VAC coil voltage, DPDT, 10A contact rating, 8-pin configuration, with LED indicator and push-to-test button. Purchase 750-2C-SKT mounting socket separately. ADC p/n **750R-2C-120A**.

(1) Relay socket for 750R-2C and H750-2C series octal relays, 8-pin configuration, 35mm DIN-rail or panel mount. ADC p/n **750-2C-SKT**.

(1) MOV module for 783, 784 and 750 series relays that operate at 120VAC coil voltage. Package includes 5 modules. ADC p/n **AD-ASMM-120**.

SIGNAL CONDITIONER:

(1) Signal conditioner and isolator for encoders, three (3) inputs for open collector, differential line driver or single ended line driver high-speed pulses up to 1MHz at 4.5-7.5 and 12-26 VDC; three (3) open collector outputs of 5-36 VDC. Slim-line plastic housing with integral 35mm DIN rail mounting adapter and removable screw terminals, 7.8-24 VDC supply voltage. UL 508 listed and CE marked. ADC p/n **FC-ISO-C**.

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(1) Solid state relay, 35mm DIN-rail mount, hazardous location certified, 3.5-32 VDC input voltage, SPST, normally open MOSFET, 8A contact rating, 3-150 VDC load voltage, DC switching. Finger-safe design and LED status lamp. ADC p/n **AD-HSSR808-DC-15**

INTERFACE RELAYS:

(1) Card relay (4 included), socket-mounted, 24 VDC 200mW coil, SPST, 5A contact rating. TY3 relay remover and two (2) jumpers included. ADC p/n **RS4N-DE**.

(1) Terminal guard for RS series relays, 10 per pack. ADC p/n **RZ4N**.

PNEUMATICS:

(2) NITRA pneumatic guided air cylinder, dual guide rods, extruded aluminum body, 12mm bore, 20mm stroke, dual location M5x0.8 female ports, double acting, magnetic piston, bronze guide bushings, universal mounting, interchangeable with other brands. ADC p/n **E12M020MD-M**.

(2) NITRA pneumatic directional control solenoid valve, 5-port (4-way), 2-position, spring return spool valve style, body ported or optional manifold mounting, 1/8 inch NPT ports, Cv=0.78, 24VDC single solenoid, DIN style wiring connector with LED indication. ADC p/n **AVS-5211-24D**.

(2) Solenoid valve connector cable, 11mm DIN style plug, 24V LED indicator, **built-in surge suppression**, 3-meter (9.84-feet) 3-wire molded PVC pigtail cable. Works with Nitra BVS solenoid valves.. Works with Nitra AVS and AVP solenoid valves. (mfg. part # 7231-11021-6160300). ADC p/n **SC11-LS24-3**.

(4) Pneumatic cylinder switch, for position sensing, magnetic, square, normally open, 3-wire, 5-28 VDC, electronic NPN transistor output, status LED, 0.5 ft. (0.15m) cable with M8 snap-fit connector. Can be mounted on cylinders with 4mm square T-slots. ADC p/n **CPS9H-AN-F**.

(4) M8 cable for quick-disconnect sensors, 8mm axial female plug, 3-pole, 2 meter length, gray PVC outer jacket. ADC p/n **CD08-0A-020-A1**.

(1) NITRA pneumatic valve manifold, 5-port (4-way), 2-station, aluminum, for use with AVS-52 series directional control valves. Valve mounting screws and gaskets included. ADC p/n **AM-522**.

(2) NITRA pneumatic push-to-connect fitting, elbow flow control valve (speed controller), meter-out, 5/32 inch (4mm equivalent) tube to #10-32 threaded connection, rotating thermoplastic (PBT) body, nickel-plated brass threads. Package of 2. ADC p/n **FVS532-10N**.

(1) NITRA pneumatic push-to-connect fitting, male elbow, 5/32 inch (4mm equivalent) tube to 1/8 inch MNPT connection, rotating thermoplastic (PBT) body, nickel-plated brass threads. Package of 5. ADC p/n **ME532-18N**.

(1) NITRA pneumatic push-to-connect fitting, male straight, 5/32 inch (4mm equivalent) tube to 1/4 inch MNPT connection, nickel-plated brass body, nickel-plated brass threads. Package of 5. ADC p/n **MS532-14N**.

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- (1) NITRA pneumatic exhaust silencer, sintered bronze cone, 1/4 inch male NPT threaded connection. 2 per package. ADC p/n **SBC-14N**.
- (1) NITRA pneumatic threaded hex head plug fitting with brass body, 1/4 inch male NPT thread. Package of 5. ADC p/n **BFHHP-14N**.
- (1) NITRA pneumatic tubing, ether-based polyurethane, 5/32 inch (4mm equivalent) outside diameter, 0.093 inch inside diameter, blue, 100 ft. package. ADC p/n **PU532BLU100**.
- (1) NITRA pneumatic tubing, ether-based polyurethane, 5/32 inch (4mm equivalent) outside diameter, 0.093 inch inside diameter, red, 100 ft. package. ADC P/N **PU532RED100**.

MULTI-WIRE INDUSTRIAL CONNECTOR:

- (2) Male insert for ZIPport multi-wire industrial connector, size 6B, 24 poles plus ground connection, crimp contacts, 10 amp, 600 VAC/DC. Poles are numbered 1 to 24. Requires 10 amp male contacts ZP-MC-CC-M10A-xxx. ADC p/n **ZP-MC06B-1-MC024**.
- (2) Female insert for ZIPport multi-wire industrial connector, size 6B, 24 poles plus ground connection, crimp contacts, 10 amp, 600 VAC/DC. Poles are numbered 1 to 24. Requires 10 amp female contacts ZP-MC-CC-F10A-xxx. ADC p/n **ZP-MC06B-1-FC024**.
- (2) Base for ZIPport multi-wire industrial connector, size 6B, single lever, bulkhead, heavy-duty die cast aluminum. Use with all size 6B connector housings with 2 pegs. ADC p/n **ZP-MC06B-2-SBHM**.
- (2) Hood for ZIPport multi-wire industrial connector, size 6B, 2-peg, top entry, (1) Pg 21 threaded hole, high construction, heavy-duty die cast aluminum. Use with all size 6B connector housings with a single lever. ADC p/n **ZP-MC06B-2-STE21ML**.
- (1) Cable gland, Pg 21 x 1.5 mm thread, 1 elastomer gasket accommodates a cable diameter range of 0.433 to 0.708 in. (11 to 18 mm), IP68 protection level, metal housing. 5 per package. ADC p/n **ZP-MC-CG-21M8**.
- (1) Machined crimp contact, male, 10A, 18AWG (0.75mm sq.), silver plated copper alloy; use with any ZIPport multi-wire male inserts rated for 10A; 100 contacts per package, ADC p/n **ZP-MC-CC-M10A-18**
- (1) Machined crimp contact, female, 10A, 18AWG (0.75mm sq.), silver plated copper alloy; use with any ZIPport multi-wire female inserts rated for 10A; 100 contacts per package, ADC p/n **ZP-MC-CC-F10A-18**
- (1) Machined crimp contact, female, 10 amp, 26 - 22 AWG (0.14 - 0.37 mm sq.), silver-plated copper alloy. Use with any ZIPport multi-wire female inserts rated for 10 amps. 100 contacts per package. ADC p/n **ZP-MC-CC-F10A-22**
- (1) Machined crimp contact, male, 10 amp, 26-22 AWG (0.14 - 0.37 mm sq.), silver-plated copper alloy. Use with any ZIPport multi-wire male inserts rated for 10 amps. 100 contacts per package. ADC p/n **ZP-MC-CC-M10A-22**
- (1) Precision crimping tool with locator for 10A and 16A machined contacts, used with the ZIPport multi-wire connectors, crimps both male and female machined contacts, wire ranges 26-11 AWG, contact pin diameters 1.6, 2.4 and 2.5 mm, includes hand crimping tool, die set, and locator. ADC p/n **ZP-MC-CT1**

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- (1) Removal tool for 10A machined crimp contacts, used with the ZIPport multi-wire crimp contacts, green metal handle, nickel plated tip, ADC p/n **ZP-MC-RT1**
- (1) Code pin, double, male, for use with any insert except size 3A and Size 32 x 13, used when multiple identical connectors should not be coupled together. Should be used with code pin ZP-MC-CODEPIN-4. 16 per package. ADC p/n **ZP-MC-CODEPIN-3**.
- (1) Code pin, double, female, for use with any insert except size 3A and size 32 x 13, used when multiple identical connectors should not be coupled together. Should be used with code pin ZP-MC-CODEPIN-3. 16 per package. ADC p/n **ZP-MC-CODEPIN-4**.

MULTI-CONDUCTOR CONTROL CABLE:

- (1) Flexible multi-conductor control cable, 25 conductors including ground, 18AWG, 16/30 stranding, black PVC/Nylon insulation with white numbers, green/yellow ground, unshielded, flexible copolymer gray jacket, 100 foot reel. ADC p/n **V40180-100**.
- (1) KNIPEX cable dismantling tool with closing spring and replaceable blade, removes outer cable sheath, capacity 1/4 inch (6mm) to 1-1/8 inch (29mm) diameter. ADC p/n **1630135SB**

JUNCTION BOX:

- (2) Non-metallic Slimline series 5 x 3 x 2 inch (HxWxD) NEMA 4X junction enclosure, gray, 4 cover screws, opaque cover. Sub-panel not required. ADC p/n **HW-N4X532**.

FUSES:

- (1) MDL small dimension electronic time-delay fuse, 1A, 250VAC, 1/4 inch x 1-1/4 inches, glass (mfg. part # MDL-1-R). Package of 5. ADC p/n **MDL1**.
- (1) MDL small dimension electronic time-delay fuse, 2A, 250VAC, 1/4 inch x 1-1/4 inches, glass (mfg. part # MDL-2-R). Package of 5. ADC p/n **MDL2**.
- (1) MDL small dimension electronic time-delay fuse, 6.25A, 250VAC, 1/4 inch x 1-1/4 inches, glass (mfg. part # MDL-6-1/4-R). Package of 5. ADC p/n **MDL6-25**.
- (1) GMC small dimension electronic medium time-delay fuse, 4A, 125VAC, 0.197 inch x 0.788 inch (5mm x 20mm), glass (mfg. part # GMC-4A-R). Package of 5. ADC p/n **GMC4**.

FUSE HOLDER:

- (1) Konnect-It fuse terminal block, with 110VAC LED, 26-8 AWG, gray, 6.3A, 300V rated (UL). Accepts 5mm x 20mm fuses. 10 pieces per package. ADC p/n **KN-F10L110AC-10**
- (1) Konnect-It fuse terminal block, with 24VDC LED, 26-8 AWG, gray, 6.3A, 300V rated (UL). Accepts 5mm x 20mm fuses. 10 pieces per package. ADC p/n **KN-F10L24DC-10**
- (1) Konnect-It terminal block end cover, gray. Use with any KN-F10 series block. 25 pieces per package. ADC p/n **KN-ECF10**

TERMINAL BLOCKS AND ACCESSORIES:

- (1) Konnect-It double-level terminal block, with 24VDC LED connected between levels, 26-12 AWG, gray, 20A, 300V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 20 pieces per package. ADC p/n **KN-D12LED-24DC**.

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- (1) Konnect-It terminal block end cover, gray. Use with any KN-D10 or KN-D12 series block. 25 pieces per package. ADC p/n **KN-ECDGRY**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **gray**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12GRY**.
- (1) Konnect-It terminal block end cover, **gray**. Use with any KN-T12 to KN-T6 series block. 100 pieces per package. ADC p/n **KN-ECT6GRY**.
- (1) Konnect-It terminal block separator, **gray**. Use with any KN-T12 to KN-T6 series block. 25 pieces per package. ADC p/n **KN-ST1GRY**.
- (1) Konnect-It grounding terminal block, **green and yellow**, 26-12 AWG. Use to mechanically and electrically connect wires to 35mm DIN rail through the snap-on clamping foot. 10 pieces per package. ADC p/n **KN-G12SP-10**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **red**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12RED**.
- (1) Konnect-It terminal block end cover, **red**. Use with any KN-T12 to KN-T6 series block. 10 pieces per package. ADC p/n **KN-ECT6RED**.
- (1) Konnect-It terminal block separator, **red**. Use with any KN-T12 to KN-T6 series block. 10 pieces per package. ADC p/n **KN-ST1RED**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **black**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12BLK**.
- (1) Konnect-It terminal block end cover, **black**. Use with any KN-T12 to KN-T6 series block. 10 pieces per package. ADC p/n **KN-ECT6BLK**.
- (1) Konnect-It terminal block separator, **black**. Use with any KN-T12 to KN-T6 series block. 10 pieces per package. ADC p/n **KN-ST1BLK**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **green**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12GRN**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **white**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12WHT**.
- (1) Konnect-It single-level terminal block, 26-12 AWG, **yellow**, 20A, 600V rated (UL). Works with jumpers KN-2J12, KN-3J12, KN-4J12 and KN-10J12. 100 pieces per package. ADC p/n **KN-T12YEL**.
- (1) Konnect-It terminal block jumper, 10-pole, screw-down type. Use with any KN-T12 or KN-D12 series block. 5 pieces per package. ADC p/n **KN-10J12**.
- (1) Konnect-It end bracket, screw-down style, 10mm wide. Use on any 35mm DIN rail. 10 pieces per package. ADC p/n **KN-EB7-10**.

DIN RAIL:

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Steel DIN rail, 35mm x 15mm, slotted, silver, 1 meter (3 feet 3 inches) length. 2 pieces per package. ADC p/n **DN-R35HS1-2**

WIRE DUCT:

(1) Iboco T1E open slot thin finger wire duct, 1.0 in. wide x 2.25 in. high, white, 2 meter length, includes cover, single piece. ADC p/n **T1E-1022W-1**

(1) Iboco T1E open slot thin finger wire duct, 1.5 in. wide x 2.25 in. high, white, 2 meter length, includes cover, single piece. ADC p/n **T1E-1522W-1**

WIRE:

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **black**, 500 ft. spool. ADC p/n **MTW18BK.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **white**, 500 ft. spool. ADC p/n **MTW18WH.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **green**, 500 ft. spool. ADC p/n **MTW18GN.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **red**, 500 ft. spool. ADC p/n **MTW18RD.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **blue**, 500 ft. spool. ADC p/n **MTW18BL.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **blue-white stripe**, 500 ft. spool. ADC p/n **MTW18BW.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **orange**, 500 ft. spool. ADC p/n **MTW18OR.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **yellow**, 500 ft. spool. ADC p/n **MTW18YL.**

(1) Type MTW wire, 18AWG, 16-strand, 600V, copper, **purple**, 500 ft. spool. ADC p/n **MTW18PL.**

CABLE TIE MOUNTS (as needed):

(1) Cable tie, 4 in. long x 0.098 in. wide, 18 lb. load minimum loop tensile strength, 0.709 inch maximum bundle diameter, natural color nylon 6.6, 100 per package. ADC p/n **BM-B1025.**

CABLE TIES (as needed):

(1) Cable tie mount, 0.75 x 0.75 in. wide, for 0.142 inch maximum width cable ties, natural color nylon 6.6, adhesive back mount, 100 per package. ADC p/n **BM-B0901**

PANEL:

(1) Hubbell-Wiegmann subpanel, 27 x 17 inches, 8 gauge 3003H14 aluminum. Use with 30 x 20 inch (HxW) Control series non-metallic enclosures. ADC p/n **HW-WM3020A.**