Gen IV ACE Controller



Master of the Fastening Universe

AcraDyne®
A Division of AIMCO



AcraDyne offers a full line of high torque, traceable, and critical bolting systems for the Energy Services sector: Wind Power, Solar, Nuclear, Mining, and more. AcraDyne's portfolio ranges from 1 – 17,000 Nm. Its cutting-edge high-torque bolting systems are specifically designed for critical high torque bolting applications that demand superior performance and durability. AcraDyne tools can handle the toughest and most important bolting jobs. The faster speed, coupled with its extreme accuracy, makes AcraDyne's bolting system an outstanding cost-effective investment. It is with great pride that the products that we manufacture are **DESIGNED AND ASSEMBLED IN THE USA.**

AcraDyne® A Division of AIMCO

AcraDyne's Gen IV ACE Controller platform is a single platform that commands all transducerized tools in the AIMCO portfolio

AIR | CORDLESS | ELECTRIC



The same, simple programming for all tool types, including:

AcraDyne
- DC Tools
- Cordless Battery Tools

Uryu
- Air Powered Tools
- Electric Tools
- Pulse Tools

No additional controller training needed for different platforms (tool type specific knowledge is required).

One common communication for global data collection, line controls, and Field Bus platforms.



The Gen IV ACE Controller Platform provides ultimate FLEXIBILITY and FREEDOM to command tools for every application

One common communication for your global data collection, line controls, and Field Bus platforms.



The AcraDyne Gen IV ACE controller platform is the culmination of more than 50 years of serving our industrial fastening customers with 20 years of manufacturing DC tools that are DESIGNED AND ASSEMBLED IN THE USA. It is filled with countless advanced capabilities and features. The Gen IV ACE Controller is the core of the modular AcraDyne DC system. One controller will command any tool in the AcraDyne line from 1 Nm to 17,000 Nm, all with one cable.

Four Digit LED Torque Display

Large numbers can be seen from a distance.

Secondary Display

Allows user to easily set and toggle through information:

- Angle
- Engineering Units
- Bolt Count
- Job/Job Sequence



Parameter Set Display

Displays current parameter set and enables user to quickly change by scrolling up or down.

7" Touch-Screen Display

- Runs the same software on PC for ease of use
- Real-Time Graphing
- Selectable Run Screens

FEATURES AND BENEFITS

- Web browser based programming. Receive data on your PC, tablet, smartphone, or any other web-capable device. You can use more than one device at a time: Be in program mode on one device while reviewing real-time curves on another, while watching tool diagnostics on a third
- Multiple fastening strategies – Program up to 256 parameters with as many as 20 steps
- Jobs capability – 99. Event log – 5,000
- Backup & restore through USB or Ethernet
- Assignable I/O (8 X 8)
- Rundown storage – 1,000,000
- Real-time curve viewing. Curve storage – 20,000

NETWORKING CAPABILITIES

- Ethernet Protocols supported: Open Protocol, ToolsNet, Ethernet/IP, Modbus TCP, PFCS, XML, FTP Client
- Anybus® Field Bus connectivity: Profibus, Profinet, DeviceNet, CC-Link, CC-Link IE Field
- Data collection
- Serial protocols and string output
- Bar code scanning & printing
- Multi-spindle synchronization

System Port

- Uses standard USB Type-B cable
- Easily connect to any computer to run software, program your controller, and download data and curves

Tool Connector

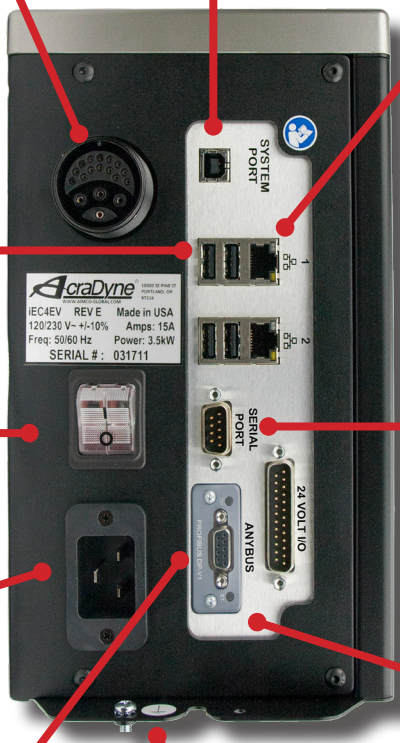
- Tool connector varies by tool type

Dual Ethernet Ports

- Enables two networks simultaneously for separate line control and data collection
- Supports any industry standard protocol
- Remote system monitoring, programming, and data download

USB Ports (4)

- Backup and Restore
- Update Software
- Download Data and Curves
- Expandable USB Peripherals



Illuminated On/Off Switch

Serial Port

- Data String Output
- Serial Protocols
- Bar Code Scanners
- Printers

Power Connector
(110V / 220V)

24V I/O (Assignable)

- 8 In/8 Out

Anybus® Field Bus Options:

- Profibus, Profinet, DeviceNET, CC-Link, CC-Link IE Field

Mounting Bracket
with Wire and Cable Routing Channels

AcraDyne iEC



GEN IV ACE iEC Controller for all AcraDyne DC Tools



Model*	System Port & Removable Memory	Lights (L) LED Display (D) Graph (G)	24V I/O Assignable 8 X 8"	Serial Port with Protocols	Backup & Restore (USB)	Ethernet** Two Ports
Bottom Exit Cable						
iEC4EGV(P)(N)(D)(C)(M)	X	L/D/G	X	X	X	X
Top Exit Cable						
iEC4EGV(-T)(P-T)(N-T)(D-T)(C-T)(M-T)	X	L/D/G	X	X	X	X

* Field bus options: P = Profibus N = Profinet D = DeviceNet C = CC Link M = CC-Link IE Field Other Field bus options available upon request.
** Ethernet channel supports Open Protocol, ToolsNet, EtherNet/IP, Modbus TCP, PFCS, XML, and FTP Client.

AcraDyne iAC



GEN IV ACE iAC Controller for Transducerized Uryu Air Tools



Model*	System Port & Removable Memory	Lights (L) LED Display (D) Graph (G)	24V I/O Assignable 8 X 8"	Serial Port With Protocols	Backup & Restore (USB)	Solenoid Shut Off On Board	Programmable Regulator On Board	Ethernet** Two Ports
Bottom Exit Cable								
iAC4EGV(P)(N)(D)(C)(M)	X	L/D/G	X	X	X			X
iAC4ESRGV(P)(N)(D)(C)	X	L/D/G	X	X	X	X	X	X
Top Exit Cable								
iAC4EV(P-T)	X	L/D	X	X	X			X
iAC4EGV(-T)(P-T)(N-T)(D-T)(C-T)	X	L/D/G	X	X	X			X
iAC4ESRGV(-T)(P-T)(N-T)(D-T)(C-T)	X	L/D/G	X	X	X	X	X	X

* Field bus options: P = Profibus N = Profinet D = DeviceNet C = CC Link M = CC-Link IE Field Other Field bus options available upon request.
** Ethernet channel supports Open Protocol, ToolsNet, EtherNet/IP, Modbus TCP, PFCS, XML, and FTP Client.

AcraDyne iPC



GEN IV ACE iPC Controller for Uryu UDP Transducerized DC Pulse Tools



Model*	System Port & Removable Memory	Lights (L) LED Display (D) Graph (G)	24V I/O Assignable 8 X 8"	Serial Port with Protocols	Backup & Restore (USB)	Ethernet** Two Ports
Bottom Exit Cable						
110V Operation iPC4EGV(P1)(N1)(D1)(C1)(M1)	X	L/D/G	X	X	X	X
220V Operation iPC4EGV(P2)(N2)(D2)(C2)	X	L/D/G	X	X	X	X
Top Exit Cable						
110V Operation iPC4EGV(1-T)(P1-T)(N1-T)(D1-T)(C1-T)(M1-T)	X	L/D/G	X	X	X	X
220V Operation iPC4EGV(2-T)(P2-T)(N2-T)(D2-T)(C2-T)	X	L/D/G	X	X	X	X

* Field bus options: P = Profibus N = Profinet D = DeviceNet C = CC Link M = CC-Link IE Field Other Field bus options available upon request.
** Ethernet channel supports Open Protocol, ToolsNet, EtherNet/IP, Modbus TCP, PFCS, XML, and FTP Client.

AcraDyne iBC



GEN IV ACE iBC Controller for all AcraDyne Transducerized Battery Tools



Model*	System Port & Removable Memory	Lights (L) LED Display (D) Graph (G)	24V I/O Assignable 8 X 8"	Serial Port with Protocols	Backup & Restore (USB)	Ethernet** Two Ports
Connects through External WiFi Access Point (User Supplied)						
iBC4E(N)	X	L/D		X	X	X
iBC4EGV(P)(N)(D)(C)	X	L/D	X	X	X	X

* Field bus options: P = Profibus N = Profinet D = DeviceNet C = CC Link M = CC-Link IE Field Other Field bus options available upon request.
** Ethernet channel supports Open Protocol, ToolsNet, EtherNet/IP, Modbus TCP, PFCS, XML, and FTP Client.

AcraDyne iBC-Z



GEN IV ACE iBC-Z Controller for Uryu UBX-AF Transducerized Battery Oil Pulse Tools



Model*	System Port & Removable Memory	Lights (L) LED Display (D) Graph (G)	24v I/O Assignable 8 X 8"	Serial Port With Protocols	Backup & Restore (USB)	Ethernet** Two Ports
Connectivity through embedded Zigbee access point						
iBC4EGV(P-Z)(N-Z)(D-Z)(C-Z)(M-Z)	X	L/D/G	X	X	X	X

* Field bus options: P = Profibus N = Profinet D = DeviceNet C = CC Link M = CC-Link IE Field Other Field bus options available upon request.
** Ethernet channel supports Open Protocol, ToolsNet, EtherNet/IP, Modbus TCP, PFCS, XML, and FTP Client.

NETWORK CONNECTIVITY



POKA-YOKE ERROR PROOFING

AcraDyne's Gen IV ACE Platform supports any third-party accessory to poka-yoke your process.

FEATURES AND BENEFITS

- 24V I/O inputs support the outputs of the receiver units
- Connect click wrenches, crimpers, or any poka-yoked device to your network data collection and line controls with all of the Ethernet protocols and Field Buses offered in the ACE Platform



Improved design of AcraDyne's powerful Gen IV Field Controller means increased durability, lighter weight, and quick and easy setup



iEC4WF Field Controller



Rugged, Lightweight Case

FEATURES AND BENEFITS

- Optimized for extreme duty applications >5,000 Nm
- The Gen IV Controller utilizes three tightening strategies:
  - Torque Control: Drive the tool to a pre-set Target Torque
  - Angle Control: Drive the tool to or measure a pre-set Degree of Angle
  - Yield Control: Drive the tool to the Fastener Yield Point to achieve maximum clamp load
- Multiple fastening strategies – Program up to 256 parameters with as many as 20 steps
- Jobs capability – 99
- Real-time curve viewing. Curve storage – 20,000
- Rundown storage – 1,000,000
- Event log – 5,000
- Backup & restore through USB
- Weatherproof, rugged case protects from the toughest environments
- Compact design weighs less than 20 lbs
- Ground clamp is quick and easy to set up and eliminates additional parts that are substantially heavy
- Optional tool fan kit helps prevents tool overheating
- Capable of interface with the AcraDyne series Dual-Lever tools that offer two-hand, no tie down functionality
- 110V — 220V compatible
- Single Ethernet port increases speed of connectivity, signal stability, and signal consistency
- Commands any tool in the AcraDyne line from 1 Nm to 17,000 Nm, all with one cable

PERQ Advantages

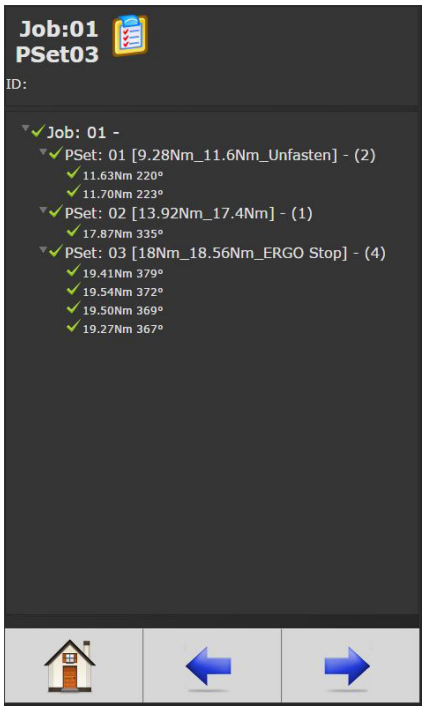
PRODUCTIVITY	• Replace multiple conventional tools with one flexible controlled system • Quick and easy setup • Fan kit reduces downtime due to tool overheating
ERGONOMICS	• Compact, rugged case with easy carry handle makes field use easy and convenient • Lightweight for operator comfort
RELIABILITY	• Weatherproof rugged case • Industrial touch screen
QUALITY	• Controlled tightening and consistent torque control improves quality • Process controls reduce human error, and ensure no missed fasteners, stripped threads, rehits, or damaged threads • No premature shut-off

Model	Description	Dimensions W x D x H	Weight LB	Weight KG
iEC4WF	Field use controller for use with 110V or 220V service	16.1" x 12.8" x 6.9" 408 mm x 326 mm x 175 mm	18.5	8.4

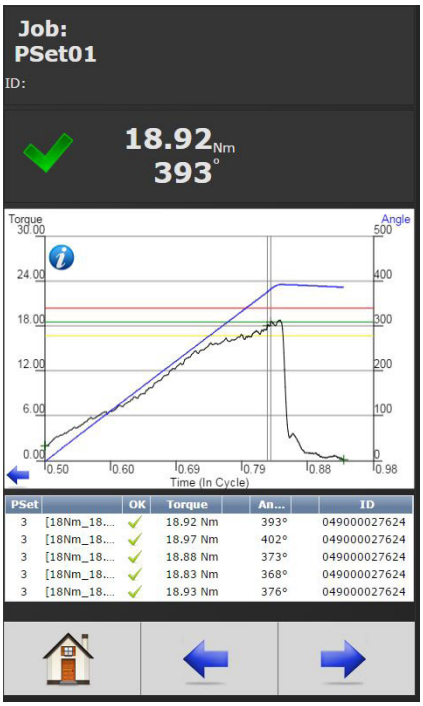
SOFTWARE

AcraDyne's software package is on-board every AcraDyne controller and is provided FREE of charge. This comprehensive, user-friendly program allows programming, analysis, and diagnostics.

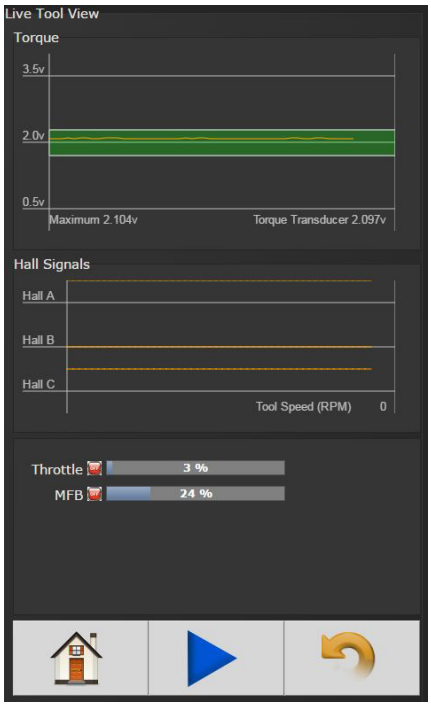
The software is based on a standard web browser, allowing you to connect the AcraDyne controller with any computer, tablet, or smart device. Connect through Ethernet, USB, or wirelessly via a network connected to both devices.



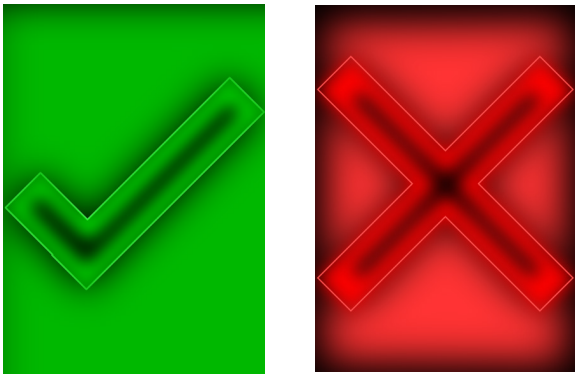
Adding and editing Parameter Sets (256) and Jobs (99) is easy and intuitive in the parameter set up function.



View curve results in real time or view stored results. As many as 20,000 curve results can be stored in memory.



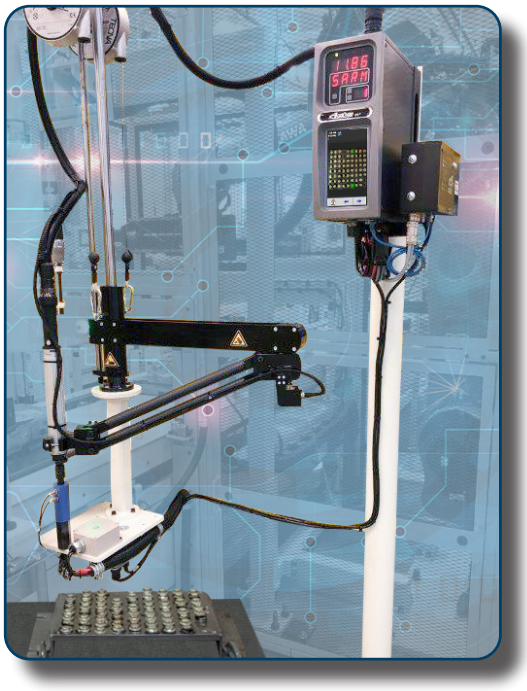
Tool programming and diagnostics for repair, calibration and advanced troubleshooting.



Choose from several run screens that display easy to view, large screen indicators.

Gen IV Controller with On-Board Smart Arm Capability and Process Visualization

AcraDyne Gen IV Controller's smart arm capability provides an advanced error-proofing solution to ensure the quality of your fastening operation. The process requires no external PC or software — the capability is on-board every Gen IV controller.



FEATURES AND BENEFITS

- Easy-to-follow visual guidance on the Gen IV controller graphical screen
- Easy setup — programming takes only minutes
- Once fastener locations are programmed into the Gen IV controller, the system can perform specific actions on specific fasteners
- No external PC or third-party software needed. Control the process using AcraDyne's Gen IV Controller and its integrated software, which is provided free of charge
- Low-cost solution vs. competitive offerings that require third-party PC-based control
- Modular – can be added at any time to an existing AcraDyne system using the Gen IV controller
- No guesswork! Powerful Gen IV data collection enables diagnostics and analysis
- Works with both continuous and discontinuous drive tools

The Gen IV controller provides easy-to-follow visual guidance directly on the graphical screen.



Tool in position over Bolt 1

Bolt 1 OK
Direction to Bolt 2

Tool in wrong location

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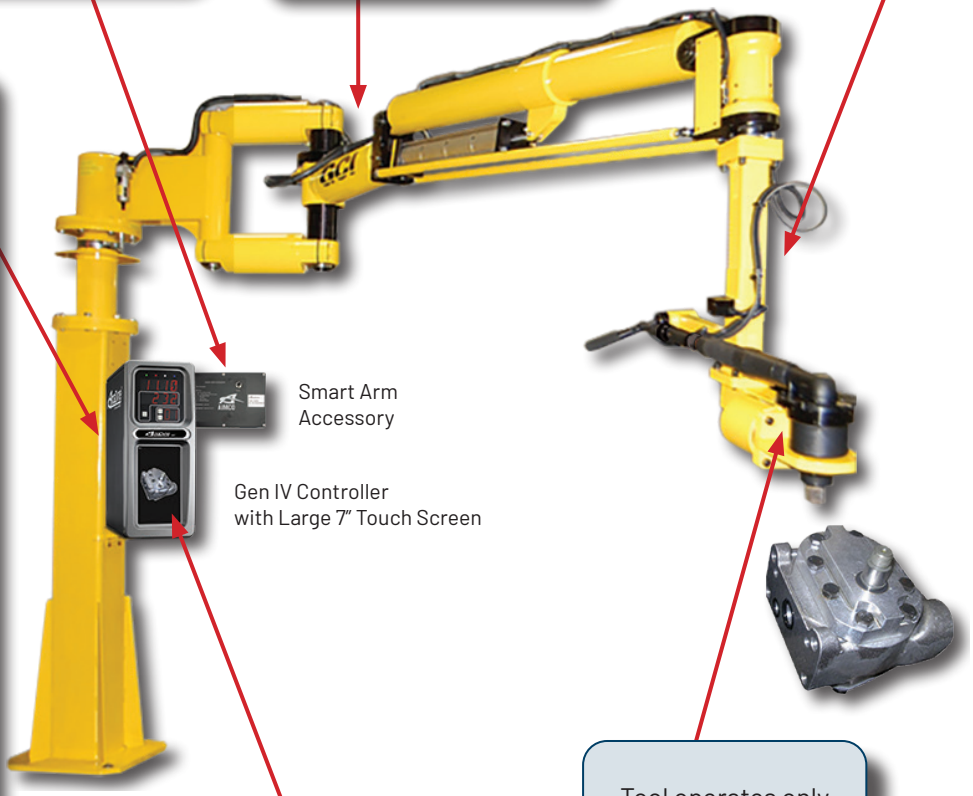
Gen IV Smart Arm System with Process Visualization

Smart Arm Accessory:

- Requires no external PC or third-party software for operation
- Gen IV Controller Software integrates with plant manufacturing execution software or allows custom programming

Encoders located at each joint of the arm.

Smart Arm guides operator in the specified torque pattern and counts fasteners required for correct assembly.



Gen IV Controller captures fastening-process data:

- Data captured and reported in real time with torque and graphing capabilities
- Curve results presented in real time or from stored results
- 20,000 curve results can be stored in memory
- Monitor, control, and report torque, angle, engineering units, fastener count, job/job sequence
- Multiple fastening strategies: 256 parameter sets with 20 stages
- Jobs capabilities – 99

Custom image of run screen with preprogrammed fastener locations/specifications. Updates in real time.

Tool operates only when it is at the correct specified fastener location.

FRL ASSEMBLY KIT

For use with the iAC controller, AcraDyne's FRL assembly kit includes a regulator and solenoid. The kit attaches to the controller or can operate as a stand-alone unit.



Top view



30850 FRL Assembly Kit

CONTROLLER BRACKETS



20322



20853

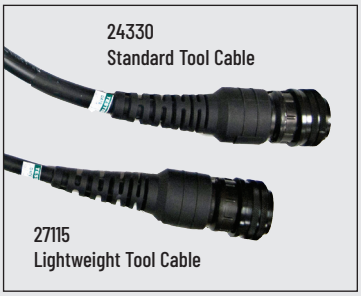


Model	Description
20322	Basic wall-mounting plate
20853	Table stand free standing platform
27816	Mounting bracket with internal wireways

CABLE ASSEMBLIES

The AcraDyne DC electric nutrunner tool system uses a single cable to carry all necessary conductors for superior ergonomics and durability.

- Flexible polyurethane cover for maximum durability, abrasion and transmission fluid resistant
- Quick disconnects at both ends facilitate tool changeover and troubleshooting
- The CAN data/signal is via RJ45 for products such as the KDM socket tray or computer



24330
Standard Tool Cable

27115
Lightweight Tool Cable

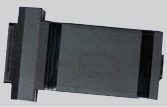
Model	Description	Length M	Length Ft
Tool Cables			
24330	G3/G4 Tool Cable 3M	3	9.8
25350	G3/G4 Tool Cable 5M	5	16.4
24320	G3/G4 Tool Cable 10M	10	32.8
27110	G3/G4 Tool Cable 3M Lightweight*	3	9.8
27115	G3/G4 Tool Cable 5M Lightweight*	5	16.4
27122	G3/G4 Tool Cable 10M Lightweight*	10	32.8
Extensions			
24320	Extension cable 10M	10	32.8
25518	Extension cable 20M	20	65.6

*Lightweight cables are for use only with 1000 & 2000 Series tools.

CABLE ADAPTERS AND CONNECTORS

	Model	Description
Adapters and Connectors		
	26364	G3/G4 Right Angle Cable Adapter
	25491	G3/G4 Breakaway Cable Connector – Ensures disconnect of cable should stress in excess of 40 lbs. occur (see below)
	30355	Y Cable Harness connects G4 iAC controller and controller's I/O to tool's EC/MCCBL cable. Compatible with UA-40S(D)MC, UA-50S(D)MC, UA-60S(D)MC, UA-70SMC, and UA-150MC tools.

DATA INTERFACE OPTION

	Model	Description
Data Interface Options		
	27348	I/O Wiring Connector – Simple module to facilitate connections to I/O on iEC Controllers
	28292	System Port Cable, USB 2.0 Cable, A Male to B Male, 3M









U.S. Patent D968491





















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