STANLEY ASSEMBLY TECHNOLOGIES
QBE CONTROLLERS

QBE Controllers

THE QBE CONTROLLER PLATFORM delivers **industry-leading advanced process control, system configuration flexibility, ease of set-up options both on-screen and with embedded software utilities, and exceedingly high performance.** From an error proofing system to assembly line control system, STANLEY QBE Controllers are the standard for all others in precision threaded fastening control.

THE QBE CONTROLLER PLATFORM FEATURES:

- **Low Cost of Ownership:** Single control platform for the complete range of STANLEY Assembly Technologies Tools to 2000 Nm, handheld and fixtured.
- **Durability:** All controllers have an Ingress Protection rating 54 (IP 54)
- **Flexibility:** Connectivity options include 24V I/O, USB, Ethernet, Serial and Fieldbus
- **Ease of Use:** QBE Expert, Specialist, Advanced and Standard controllers can be setup from the front panel or from a computer's web browser using the Alpha Toolbox Ethernet connection
- **Intelligent Connectivity:** Alpha Toolbox, included in every QBE Controller, is used to program strategies, collect fastening cycle and trace data, and perform online diagnostics of the tool and controller (see page 84)
- **Intuitive Design:** The Wizard provides an easy method to control programming directly from the keypad on the controller or with Alpha Toolbox software
- **Inexpensive Upgrade Path:** The QBE Controller is designed to power the complete STANLEY Assembly Technologies tool product line:
  - » EB-Series Corded Tools
  - » EB-Series Corded Fixtured Tools
  - » B-Series Cordless Tools
  - » E-Series Corded and Fixtured Tools
  - » Previous generations (EA-Series and EC-Series Tools)

The QBE Controller platform includes options that are based on our customer's requirements. Please choose from our range of controller options:

- **QBE Expert Controller** is the premier Single Tool Controller and Lead Controller in a Multi-Spindle System
- **QBE Specialist Controller** is a Multi-Spindle and Cordless Tool Controller
- **QBE Advanced Controller** is a Single Spindle Controller or a Lead Controller for a Dual-Spindle System
- **QBE Standard Plus Controller** is a Single Spindle Controller without Ethernet or Fieldbus Options
- **QBE Node Controller** is a Single Spindle Controller used for trailing spindles in Multiple Tool (Fixtured) Applications or in Multi-Tool Systems
- **QBE Network Node Controller** is a Cordless Tool Controller for up to 6 B-Series Cordless Tools

SPECIFICATIONS FOR QBE CONTROLLERS:

- **Dimensions (W x H x D):** 15 cm x 36 cm x 26 cm (6 in x 14 in x 10 in)
- **Weight:** 7.6 kg (16.7 lb)
- **I/O Power Supply:** 24V DC, 1A Internal, Ready for External Power Supply
- **AC Power Source:** Auto Detect 100 – 126.5V or 200 – 253V AC, 50 or 60 Hz
- **Humidity:** 0 to 95% non-condensing
- **Temperature:** 32 – 122 °F (0 – 50 °C)

How to Order

STEP 1: Refer to the matrix on the specific controller page to identify the Model Number and Options based requirements.

STEP 2: Select a power cord by the supply voltage and country, if required. Or select No Power Cord.

Power Cord Description	Part No.
Argentina Power Cord 230V, 2m	20C105202
Australia Power Cord 230V, 2m	20C102103
Brazil Power Cord 230V, 2m	20C102104
China Power Cord 230V, 2m	21C103905
Euro Power Cord 230V, 2m	20C102102
Japan Power Cord 125V, 2m	20C102101
Japan Power Cord 250V, 2m	20C102105
US Power Cord 115V, 2m	20C102002
US Power Cord 115V, 7m	20C102007
US Power Cord 230V, 2m	21C103902

Power Cord Description	Part No.
UK Power Cord 230V, 2m	20C102202
Power Distribution Panel Cord, 1m	20C203401
Power Distribution Panel Cord, 2m	20C203402
Twist Lock Power Cord 115V, 2m	20C103802
Twist Lock Power Cord 115V, 4m	20C103804
Twist Lock Power Cord 115V, 7m	20C103807
Twist Lock Power Cord 230V, 2m	20C106302
Twist Lock Power Cord 230V, 7m	20C106307
GFI 30ma 250V Assembly for Europe	21E102300
India Power Cord 250V, 2m	20C102106

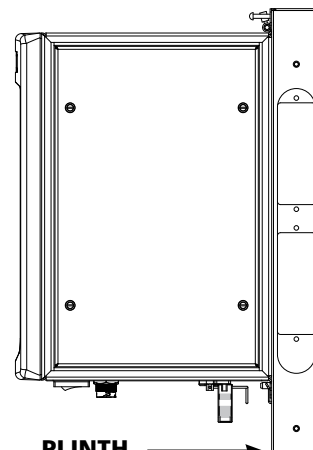**STEP 3:** A plinth is selected as standard. If no plinth is required, select No Plinth.

STEP 4: Select I/O Cable options, if required.

I/O Mating Connector Description	Standard/ Optional	Part No.
24V I/O Mating Connector, Phoenix for Basic Alpha	Standard	21C104806
24V I/O Mating Connector, Solder Cup (Standard, Advanced, Expert, Network Node)	Standard	21C104800
24V I/O Mating Connector, Crimp Pins (Standard, Advanced, Expert, Network Node)	Optional	21C104802
24V I/O Mating Connector, Crimp Pins, with Crimp Tool (Standard, Advanced, Expert, Network Node)	Optional	21C104804
5M, 24V I/O Ext. Cable (I/O Connector to Pigtail)	Optional	21C202005
20M, 24V I/O Ext. Cable (I/O Connector to Pigtail)	Optional	21C202010
10M, 24V I/O Ext. Cable (I/O Connector to Pigtail)	Optional	21C202020
I/O Bracket Assembly, 19-Pin to Phoenix	Optional	21E102202

STEP 5: Select a floor stand, if required.

Floor Stand Description	No. of Spindles	Dimensions	Part No.
Floor Stand Kit	1 to 6	198H x 61W x 56D cm	21F100404
Assembled System with Floor Stand	1 to 6	78H x 24W x 22D in	Add /F to Model No.
Floor Stand Kit	7 to 12	198H x 61W x 88D cm	21F100402
Assembled System with Floor Stand	7 to 12	78H x 24W x 34.5D in	Add /F to Model No.

Please Note: If UL or CSA certification are required, please contact the STANLEY team to have this quoted to you.

PLINTH
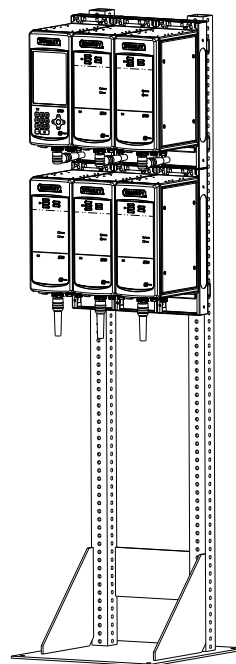- Quick-change mounting by hand
- Cable management and routing

FLOOR STAND
- Top row of controllers require a 90° Extension.
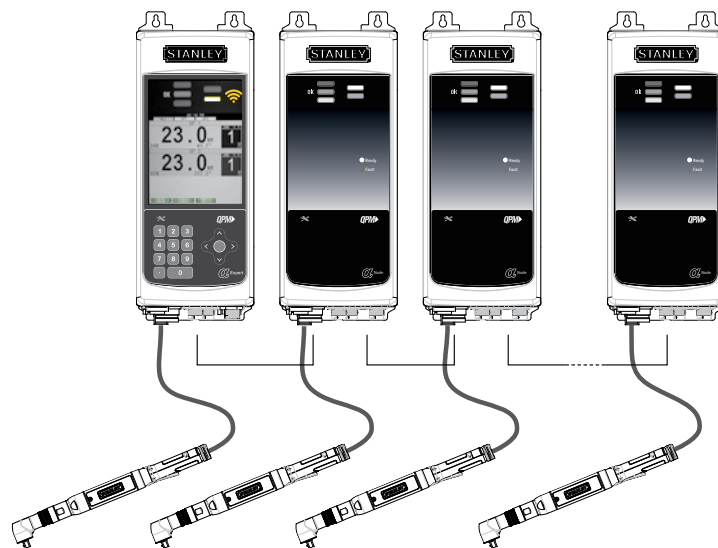- See pages 52-55 for Cable Options

QBE Expert Controller

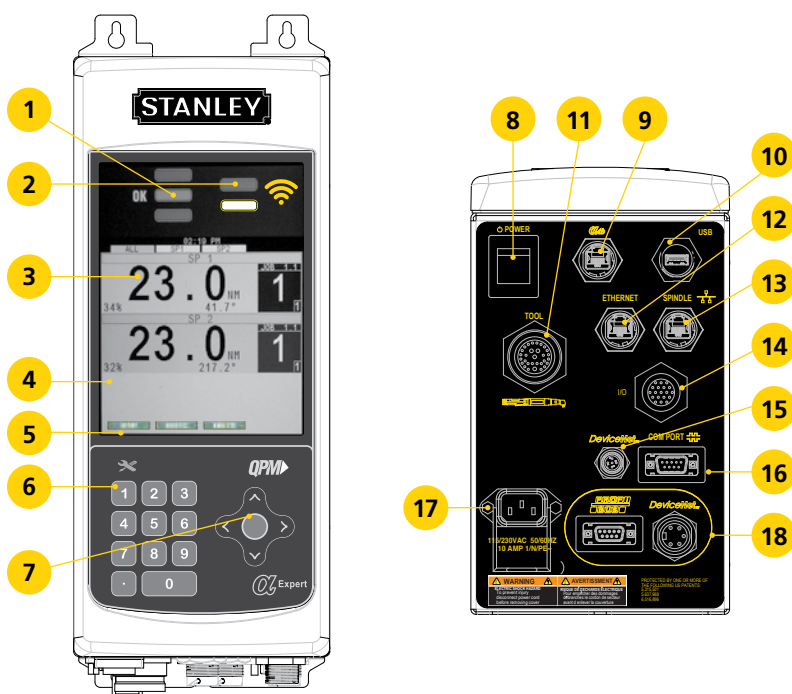## QBE Expert Controller is the premier Multi-Spindle Controller

BENEFITS:

- **Large Touchscreen, Color Display and Keypad**
- **Quick Set-up from the Controller Keypad, or with a PC, tablet, or smart phone**
- **Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- One Network Connection for Multiple Spindles
- Operates as a Standalone Controller or as the Lead Controller of a multiple (fixtured) system
- Manages up to 24 trailing spindles (Advanced or Nodes) or Cordless Tools
- A maximum of 15 Cordless Connections are supported
- An 802.11 b/g/n wireless access point for B-Series Cordless Tools to connect as trailing spindles
- Stores Trace Data for 30,000 Fastening Cycles for Corded Tools
- 255 jobs, 99 tasks, 12 steps including smart steps and all advanced strategies
- Includes a USB port, a plant network Ethernet port, a Spindle network Ethernet port, a Serial port, and an emulated PLC function
- Embedded Modbus TCP
- Fieldbus options: Profibus, Profinet, DeviceNet and Ethernet IP
- 24V DC I/O, 8 Inputs / 8 Outputs, assignable

Spindles 1-24 connect using an isolated Ethernet Spindle Network

	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Display
4	Function Keys with Active Label Above
5	Maintenance Due Indicator
6	Numeric Keypad to Enter Numbers or Select Options
7	Cursor Keys with Center Button to Expand Lists
8	Power Switch
9	Alpha Toolbox Connector
10	USB Port for Data Transfer
11	Tool Connector
12	Plant Network Ethernet Connector
13	Spindle Network Ethernet Connector
14	24V DC Input/Output Connector
15	Optional Master DeviceNet Connector
16	Serial Port Connector
17	Power Input
18	Optional Fieldbus Connector(s)

Standard Features	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox
All Models	✔	✔	✔	✔	✔	✔

Note: M12 Ethernet port available upon request. Contact STANLEY for more details.

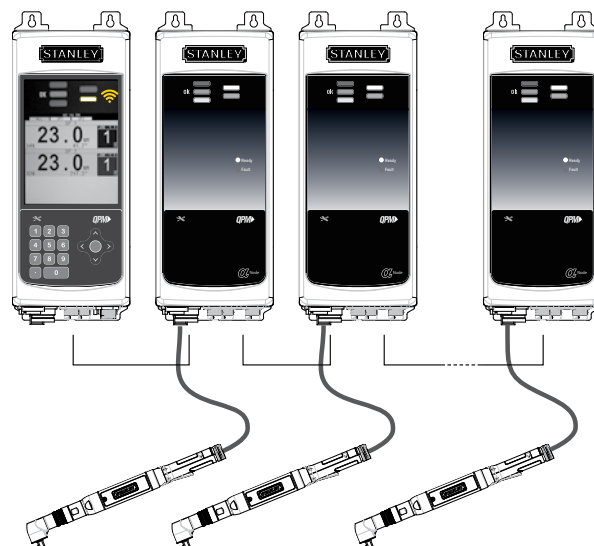| Alpha Model Number for Optional Features	DeviceNet	PROFIBUS	EtherNet/IP	PROFINET	GM Ports Lead	Devicenet Available	M12 EtherNet/IP ports
QB4101-MGV					✔	✔	
QB4101-MXV						✔	
QB4101-XEV			✔				
QB4101-XDV	✔						
QB4101-XGV				✔			
QB4101-XMV			✔				✔
QB4101-XNV				✔			
QB4101-XPV		✔					
QB4101-XXV							

QBE Specialist Controller

QBE Specialist Controller is a Multi-Spindle and Cordless Tool Controller
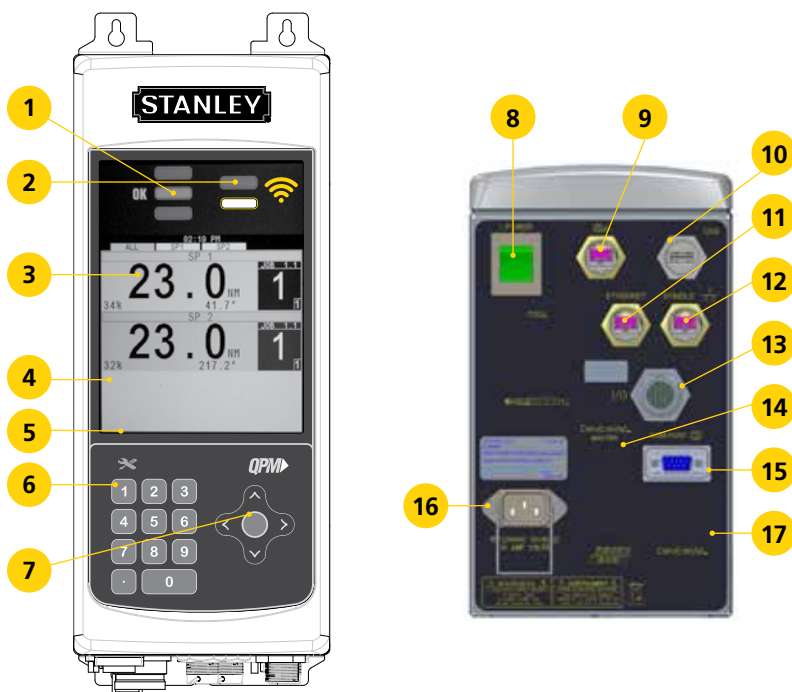
BENEFITS:

- **Large Touchscreen, Color Display and Keypad**
- **Quick Set-up from the Controller Keypad, or with a PC, tablet, or smart phone**
- **Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- Large touchscreen, color display and on-screen keypad
- Operates as the Lead Controller of a multiple (fixtured) system and manages up to 24 trailing spindles (Advanced or Nodes) or Cordless Tools
- A maximum of 15 Cordless Connections are supported
- 802.11 b/g/n and 802.15.4 (Option) wireless access point for B-Series Cordless Tools to connect as trailing spindles
- Includes a USB port, a plant network Ethernet port, a Spindle network Ethernet port, a Serial port, fieldbus options, and an emulated PLC function
- 24V DC I/O, 8 Inputs / 8 Outputs, assignable

Spindles 1-24 connect using an isolated Ethernet Spindle Network

	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Touchscreen Color Display
4	Function Keys with Active Label Above
5	Maintenance Due Indicator
6	Numeric Keypad to Enter Numbers or Select Options
7	Cursor Keys with Center Button to Expand Lists
8	Power Switch
9	Alpha Toolbox Connector
10	USB Port for Data Transfer
11	Plant Network Ethernet Connector
12	Spindle Network Ethernet Connector
13	24V DC Input/Output Connector
14	Optional Master DeviceNet Connector
15	Serial Port Connector
16	Power Input
17	Optional Fieldbus Connector(s)

Standard Features	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox
All Models	✔	✔	✔	✔	✔	✔

Note: M12 Ethernet port available upon request. Contact STANLEY for more details.

Alpha Model Number for Optional Features	DeviceNet	PROFIBUS	EtherNet/IP	PROFINET	GM Ports	Lead Devicenet Available		M12 EtherNet/IP ports
QB5100-MGV					✔	✔	IEEE 802.11	
QB5100-MXV						✔	IEEE 802.11	
QB5100-XDV	✔						IEEE 802.11 b/g/n	
QB5100-XEV			✔				IEEE 802.11 b/g/n	
QB5100-XGV					✔	✔		
QB5100-XMV			✔				IEEE 802.11	✔
QB5100-XNV				✔			IEEE 802.11 b/g/n	
QB5100-XPV		✔					IEEE 802.11 b/g/n	
QB5100-XXV						✔		
QB5300-XXV						✔	IEEE 802.15.4	

QBE Controllers

QBE Advanced Controller

QBE Advanced Controller is a Single Spindle Controller or a Lead Controller for a Dual-Spindle System
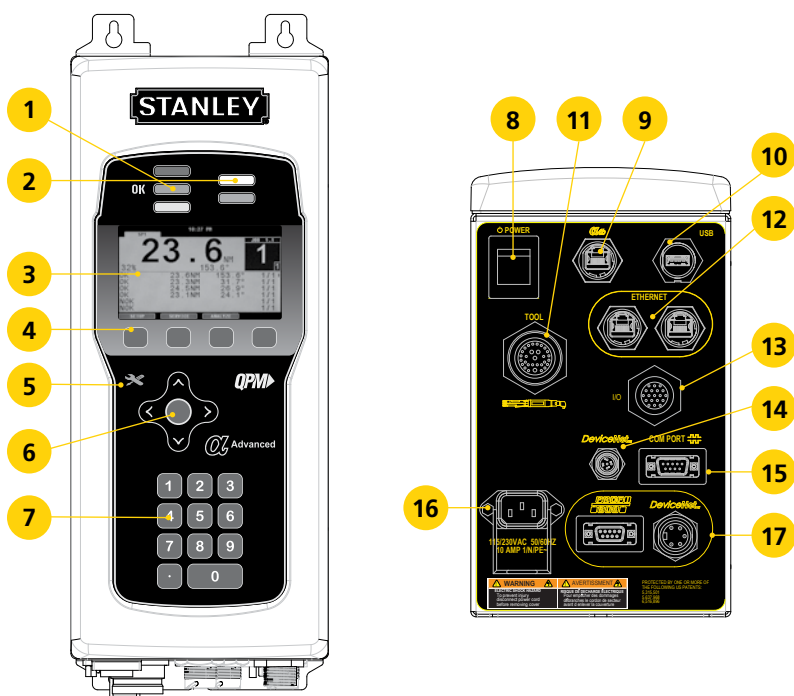
BENEFITS:

- **Color Display with Keypad**
- **Quick Set-up from the Controller Keypad, or with a PC through Ethernet**
- **Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- Two-line color display and soft key keypad
- Operates as a Standalone Controller or as part of a dual spindle system
- The Advanced controller can control up to 2 spindles including its own (typically Nodes or Advanced controllers can be used)
- Stores Trace Data for 30,000 Fastening Cycles
- 255 jobs, 99 tasks, 12 steps including smart steps and all advanced strategies
- Includes a USB port and 2 Ethernet ports, a Serial port, fieldbus options, an integrated PLC
- 24V DC I/O, 8 Inputs / 8 Outputs, assignable

Dual Spindle Operation

	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Display
4	Function Keys with Active Label Above
5	Maintenance Due Indicator
6	Numeric Keypad to Enter Numbers or Select Options
7	Cursor Keys with Center Button to Expand Lists
8	Power Switch
9	Alpha Toolbox Connector
10	USB Port for Data Transfer
11	Tool Connector
12	Plant / Spindle Network Ethernet Connectors
13	24V DC Input/Output Connector
14	Optional Master DeviceNet Connector
15	Serial Port Connector
16	Power Input
17	Optional Fieldbus Connector(s)

Standard Features	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox
All Models	✔	✔	✔	✔	✔	✔

Note: M12 Ethernet port available upon request. Contact STANLEY for more details.

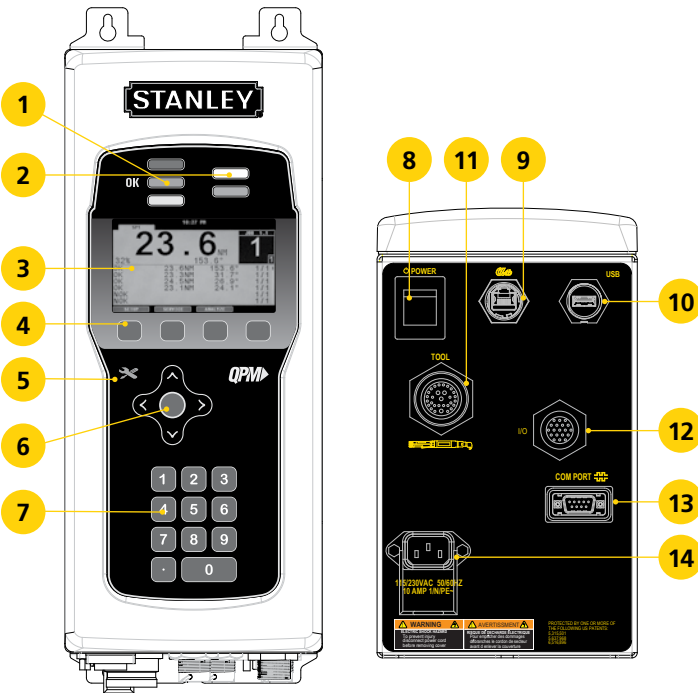| Alpha Model Number for Optional Features	DeviceNet	PROFIBUS	EtherNet/IP	PROFINET	GM Ports Lead	Devicenet Available	M12 EtherNet/IP ports
QB3101-MGV					✔	✔	
QB3101-MXV						✔	
QB3101-XDV	✔						
QB3101-XEV			✔				
QB3101-XGV				✔			
QB3101-XMV			✔				✔
QB3101-XNV				✔			
QB3101-XPV		✔					
QB3101-XXV							

QBE Standard Plus Controller

QBE Standard Plus Controller is a Single Spindle Controller

BENEFITS:

- **Color Display with Keypad**
- **Economical, single Controller system option**
- **Quick Set-up from the Controller Keypad, or with a PC through Ethernet Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- Two-line color display and soft key keypad
- Operates as a Standalone Controller
- Stores Trace Data for 30,000 Fastening Cycles
- 255 jobs, 99 tasks, 12 steps including smart steps and all advanced strategies
- Includes a USB port and a Serial port
- 24V DC I/O, 8 Inputs / 8 Outputs, assignable

Alpha Model Number	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox
QB2201	✓		✓	✓		✓

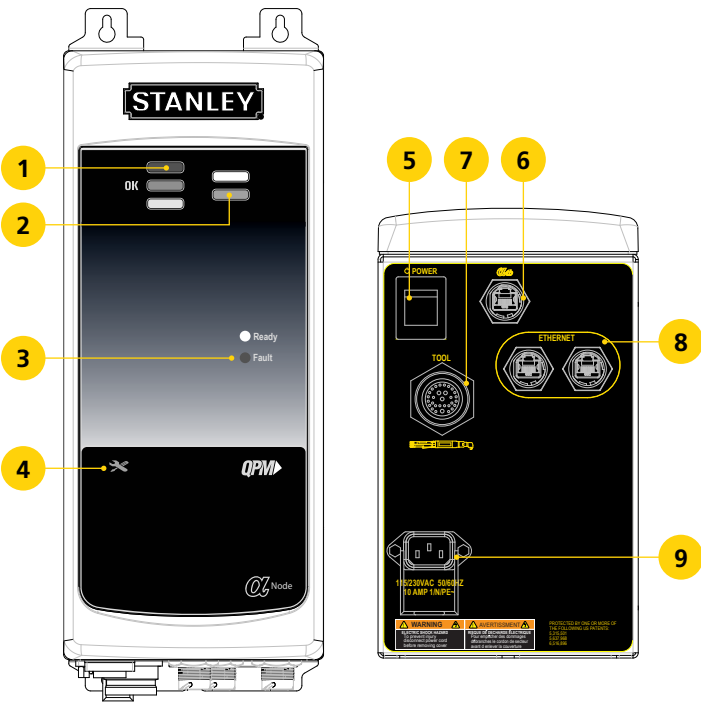|	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Display
4	Function Keys with Active Label Above
5	Maintenance Due Indicator
6	Cursor Keys with Center Button to Expand Lists
7	Numeric Keypad to Enter Numbers or Select Options
8	Power Switch
9	Alpha Toolbox Connector
10	USB Port for Data Transfer
11	Tool Connector
12	24V DC Input/Output Connector
13	Serial Port Connector
14	Power Input

QBE Node Controller

QBE Node Controller is a Single Spindle Controller used for trailing spindles in Multiple Tool (Fixtured) Applications

BENEFITS:

- **Simplified user interface with LEDs**
- **Program through the USB port with Alpha Toolbox or through the Lead Controller**
- **Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- No onscreen display, Red, Green, Yellow LEDs for Limits Evaluation, Tool Ready and Fault
- Operates as part of a multiple (fixtured) system
- Stores Trace Data for 30,000 Fastening Cycles
- 255 Jobs and 99 Tasks with 12 Steps
- 1 Serial ports and Ethernet Port for Spindle Network Connections

Alpha Model Number	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox
QB0101		✔				✔

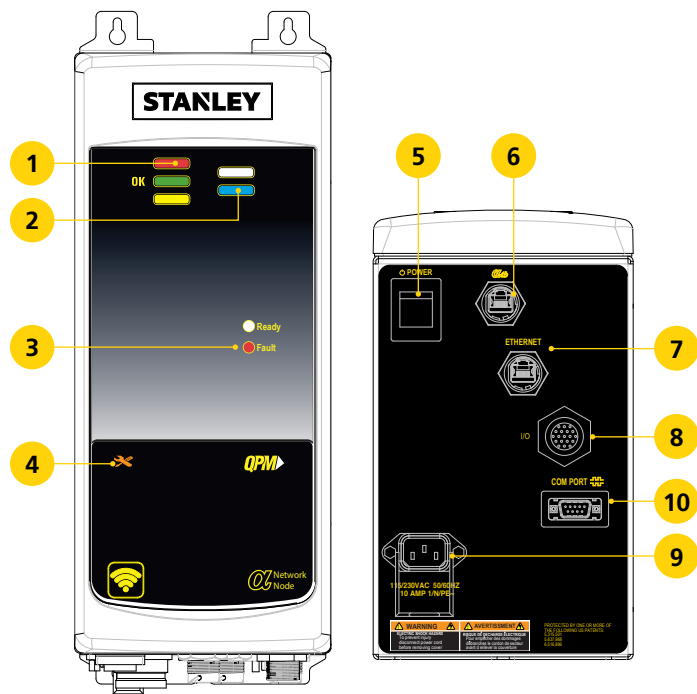|	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Ready / Fault LEDs
4	Maintenance Due Indicator
5	Power Switch
6	Alpha Toolbox Connector
7	Tool Connector
8	Spindle Network Ethernet Connectors
9	Power Input

QBE Network Node Controller

QBE Network Node Controller is a Cordless Tool Controller for up to 6 B-Series Cordless Tools

BENEFITS:

- **Simplified user interface with LEDs**
- **Alpha Toolbox, STANLEY's web-based software for programming, collecting data and performing diagnostics**
- **Less training, less inventory and spare parts: STANLEY offers the same Controller platform for Cordless B-Series Battery Tools as well as Corded Handheld and Fixtured EB-Series, E-Series and EA-Series Tools**

TECHNICAL FEATURES:

- No onscreen display, Red, Green, Yellow LEDs for Limits Evaluation, Tool Ready and Faults
- One-to-One wireless connection (802.15.4)
- Operates as an interface between the B-Series Cordless tools and customers' Error Proofing or Data Collection system
- Up to 6 B-Series Cordless Connections (802.11 b/g/n)
- Node controllers include an Ethernet port and a Serial port
- IEEE 802.15.4 wireless option communication to Network Node (QB0301)
- 24V DC I/O, 8 Inputs / 8 Outputs, assignable

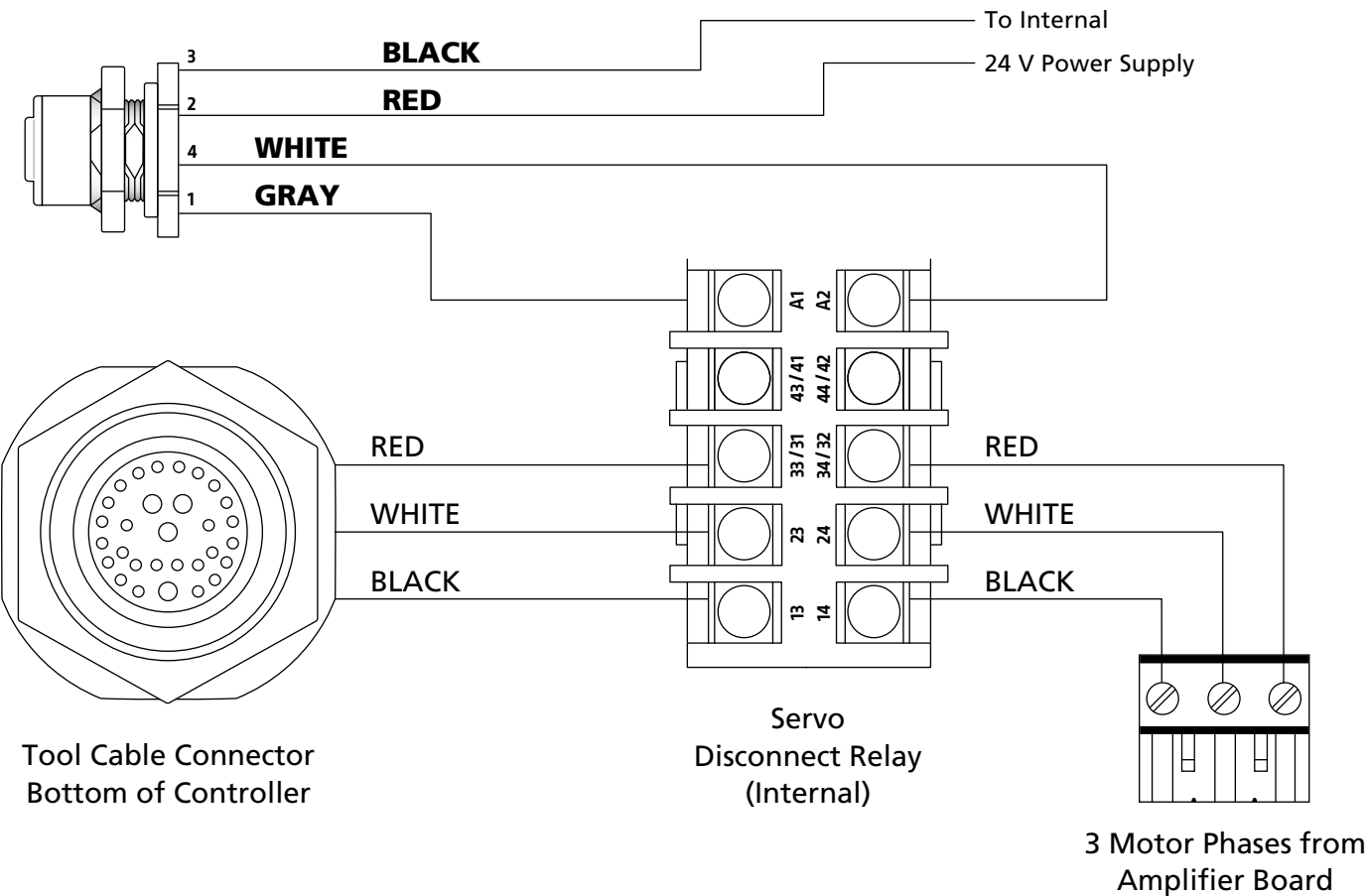| Alpha Model Number	Serial	Ethernet	USB	24V DC I/O	Modbus/TCP	Alpha Toolbox	
QB0201	✓	✓		✓	✓	✓	IEEE 802.11 b/g/n
QB0301	✓	✓		✓	✓	✓	IEEE 802.15.4

	Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Programmable and Tool Ready LEDs
3	Ready / Fault LEDs
4	Maintenance Due Indicator
5	Power Switch
6	Alpha Toolbox Connector
7	Network Ethernet Connector
8	24V DC Input/Output Connector
9	Power Input
10	Serial Port Connector

QB Spindle Disconnect Controllers

Spindle Disconnect controllers are the same as the controllers on the previous pages with the exception they have a contactor inside to disconnect the 3-phases to the motor to stop the tool when activated. These controllers are designed to operate as part of a multiple (fixtured) system.

SPINDLE DISCONNECT
Connector on Bottom of Controller

Tool Cable Connector
Bottom of Controller

Servo
Disconnect Relay
(Internal)

3 Motor Phases from
Amplifier Board

The controllers that have the Spindle Disconnect are the Expert, Advanced and Node. The model numbers will change from the previous pages. See chart.

Controller	Part No.
Node	QB0111
Advanced	QB3111-XXX
Expert	QB4111-XXX

If options for the controller are required, use the extensions from the appropriate controller page to add the proper extension. For instance, if Profibus is required on an Advanced controller use QB3111-XPV to get the Advanced controller with the Servo Disconnect and the Profibus fieldbus for the controller.

Accessories	Part No.
M12 Spindle Disconnect Tee	21R202205
M12 Spindle Disconnect Cable	21C102302

Alpha Toolbox Software

STANLEY Assembly Technologies – Alpha Toolbox Software for QBE Controllers

Alpha Toolbox, included in every QBE Controller, is used to program strategies, collect fastening cycle and trace data, and perform online diagnostics of the tool and controller. This powerful software utility enables:

- Tool configuration
- Tool diagnostics
- Data collection and maintenance intervals
- Advanced user integration

BENEFITS:

- No set-up is required
- Intuitive and Easy to Use
- Flexible Connectivity

QBE Controllers include a dedicated Alpha Toolbox port. This browser based software is executed from an Ethernet connection to the controller or wirelessly on a tablet, PC or phone. Simply connect a computer to the port, type "ATB.QPM" into a web browser and the software is available for use. The Wizard provided by STANLEY, offers an easy method to control programming directly from the keypad on the controller or with Alpha Toolbox. Users can also take advantage of advanced programming using Alpha Toolbox or Alpha Gateway software with a computer. For advanced, multiple tool systems, Alpha Toolbox includes a PLC Editor for easy integration.