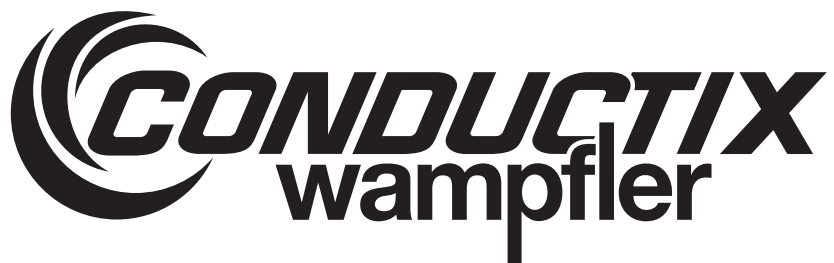


Push Button Pendants

80 Series

Installation, Operation & Maintenance Manual



CONDUCTIX INCORPORATED

The technical data and images which appear in this manual are for informational purposes only. **NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE CREATED BY THE DESCRIPTIONS AND DEPICTIONS OF THE PRODUCTS SHOWN IN THIS MANUAL.** Conductix Inc. makes no warranty (and assumes no liability) as to function of equipment or operation of systems built according to customer design or of the ability of any of its products to interface, operate or function with any portions of customer systems not provided by Conductix Inc.

Seller agrees to repair or exchange the goods sold hereunder necessitated by reason of defective workmanship and material discovered and reported to Seller within one year after shipment of such goods to Buyer.

Except where the nature of the defect is such that it is appropriate, in Seller's judgment, to effect repairs on site, Seller's obligation hereunder to remedy defects shall be limited to repairing or replacing (at Seller's option) FOB point of original shipment by Seller, any part returned to Seller at the risk and cost of Buyer. Defective parts replaced by Seller shall become the property of Seller.

Seller shall only be obligated to make such repair or replacement if the goods have been used by Buyer only in service recommended by Seller and altered only as authorized by Seller. Seller is not responsible for defects which arise from improper installation, neglect, or improper use or from normal wear and tear.

Additionally, Seller's obligation shall be limited by the manufacturer's warranty (and is not further warranted by Seller) for all parts procured from others according to published data, specifications or performance information not designed by or for Seller.

Seller further agrees to replace or at Seller's option to provide a refund of the sales price of any goods that do not conform to applicable specifications or which differ from that agreed to be supplied which non-conformity is discovered and forthwith reported to Seller within thirty (30) days after shipment to the Buyer. Seller's obligation to replace or refund the purchase price for non-conforming goods shall arise once Buyer returns such goods FOB point of original shipment by Seller at the risk and cost of Buyer. Goods replaced by Seller shall become the property of Seller.

There is no guarantee or warranty as to anything made or sold by Seller, or any services performed, except as to title and freedom from encumbrances and, except as herein expressly stated and particularly, and without limiting the foregoing, there is no guarantee or warranty, express or implied, of merchantability or of fitness for any particular purpose or against claim of infringement or the like.

Seller makes no warranty (and assumes no liability) as to function of equipment or operation of systems built to Buyer's design or of the ability of any goods to interface, operate or function with any portions of Buyer's system not provided by Seller.

Seller's liability on any claim, whether in contract, tort (including negligence), or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any products or services shall in no case exceed the price paid for the product or services or any part thereof which give rise to the claim. In no event shall Seller be liable for consequential, special, incidental or other damages, nor shall Seller be liable in respect of personal injury or damage to property not the subject matter hereof unless attributable to gross misconduct of Seller, which shall mean an act or omission by Seller demonstrating reckless disregard of the foreseeable consequences thereof.

Seller is not responsible for incorrect choice of models or where products are used in excess of their rated and recommended capacities and design functions or under abnormal conditions. Seller assumes no liability for loss of time, damage or injuries to property or persons resulting from the use of Seller's products. Buyer shall hold Seller harmless from all liability, claims, suits and expenses in connection with loss or damage resulting from operation of products or utilization of services, respectively, of Seller and shall defend any suit or action which might arise there from in Buyer's name - provided that Seller shall have the right to elect to defend any such suit or action for the account of Buyer. The foregoing shall be the exclusive remedies of the Buyer and all persons and entities claiming through the Buyer.

CONDUCTIX-WAMPFLER FIELD SERVICE

Need Field Service for our products? We Can Handle It!

Ask us for a quote on expert system installations, inspections, preventative maintenance, and repairs/retrofits.

As the world's largest single source manufacturer of mobile electrification products, Conductix-Wampfler has the unique ability to offer a degree of service not found anywhere else. Conductix-Wampfler's team of highly qualified service technicians and engineers have years of experience servicing our complete line of products.

We can provide:

- **Annual Service contracts**
- **Installation**
- **Commissioning**
- **Installation supervision** to ensure your installers avoid common mistakes.
- **Troubleshooting** to get you up and running.
- **Pre-planned inspections** to complement your preventive maintenance program.

Call 1-800-521-4888 for further details.



TABLE OF CONTENTS

SECTION 1 - SAFETY	5
1.0 Safety Information Responsibility	5
1.1 Safety Messages	5
1.2 Limitation of Liability	5
1.3 Personnel Requirements-Qualifications	6
1.4 Personnel Requirements-Unauthorized Personnel	6
1.5 Personnel Requirements - Training	7
1.6 Personnel Protective Equipment	7
SECTION 2 - PRODUCT DISPOSAL	8
2.0 Product Disposal & Recycling	8
SECTION 3 - SPECIFICATIONS	9
3.0 Mechanical Specifications	9
3.1 Electrical Specifications	9
3.2.1 Outdoor Usage	9
3.2.2 Certification Reminder	9
3.2.3 Outdoor Use Warning	9
SECTION 4 - INSTALLATION	10-13
4.0 Disassembly of the Enclosure	10
4.1 Mounting Switches	10
4.2 Mounting Mushroom Head and Selector, Switches	11
4.3 Cable Installation	12
4.4 Button Legends	13
4.5 Vertical Legends	13
4.6 Reassembly of the Enclosure	13
SECTION 5 - SWITCH SCHEMATICS	14-15

SECTION 1 - SAFETY

1.0 Safety Information Responsibility

- 1.0.1 All owner, operator, and maintenance personnel must read and understand all manuals associated with this product before installation, operation, or maintenance.
- 1.0.2 The manual provides information on the recommended installation, operation, and maintenance of this product. Failure to read and follow the information provided could cause harm to yourself or others and/or cause product damage. No one should install, operate, or attempt maintenance of this product prior to familiarizing themselves with the information in this manual.

1.1 Safety Messages

The following safety messages are used in this manual to alert you to specific and important safety related information.

CAUTION

CAUTION indicates unsafe actions or situations that have the potential to cause injury, and/or minor equipment or property damage.

DANGER

DANGER indicates hazards that have the potential to cause severe personal injury or death.

WARNING

WARNING indicates unsafe actions or situations that have the potential to cause severe injury, death, and/or major equipment or property damage.

NOTE

NOTE is used to alert you to installation, operation, programming, or maintenance information that is important, but not hazard related.

1.2 Limitation of Liability

- 1.2.1 All data and information in this mounting instructions have been compiled in compliance with the applicable standards and regulations, best practice and our many years of experience and knowledge.
- 1.2.2 The manufacturer accepts no liability for damages resulting from:
- Failure to comply with this document
 - Improper use
 - Use by untrained personnel
 - Unauthorized modifications
 - Technical changes
 - Use of unauthorized replacement parts and accessories
 - The actual scope of delivery may differ from the explanations and descriptions provided here if the model in question is a special one, if additional equipped has been ordered or due to recent technical changes.
- 1.2.3 The obligations agreed upon in the delivery agreement and our General Terms and Conditions of business apply, as do the delivery conditions of the manufacturer and the legal regulations applicable at the time the contract was concluded.
- 1.2.4 All products are subject to technical modifications in the context of improvement of function and further development.

SECTION 1 - SAFETY

1.3. Personnel Requirements-Qualifications

WARNING

- **Inadequately trained persons are at risk of injury!**
Improper use can result in serious personal injury or material damage. All activities must only be performed by qualified personnel.

1.3.1 Only persons who can be expected to perform their work reliably are acceptable personnel. People whose reactions are impaired by drugs, alcohol or medications, for example, are not authorized.

1.3.2 When selecting personnel, follow all age- and occupation-specific guidelines applicable at the location of use.

1.3.3 The following qualifications are specified in the operating instructions for certain fields of activity.

1.3.4 Trained personnel and operators

- Will have participated in a training session, given by the owner, on the tasks assigned to them and the potential hazards in case of improper conduct.
- The owner of the machine or system must document that the appropriate training has taken place.

1.3.5 Specialist personnel

- Will consist of persons capable of performing assigned tasks and independently identifying and avoiding potential hazards based on their specialist training, knowledge and experience as well as their knowledge of the applicable regulations. Persons are deemed to be technically qualified if they have successfully completed training as a master electrician, apprentice electrician, electrical engineer or electrical technician. Persons are also considered technically qualified if they have been employed in an appropriate capacity for several years, receiving theoretical and practical training in that line, and their knowledge and skills have been tested by a specialist in the appropriate field of training.
- The machine or system owner must document that the appropriate certificates or other proofs of qualification have been or are being provided.

1.4 Personnel Requirements-Unauthorized Personnel

WARNING

- **Danger due to unauthorized personnel!**
Unauthorized persons who do not meet the requirements described here are not acquainted with the dangers in the working area. Keep unauthorized personnel away from the working area. In case of doubt, address the person and direct them away from the working area. Stop working, as long as unauthorized persons are in the working area.

SECTION 1 - SAFETY

1.5 Personnel Requirements-Training

1.5.1 Before commissioning the equipment, personnel must be trained by the owner. Log the implementation of training for better traceability.

Example of a training log:

Date	Name	Training Type	Training Instructor	Signature
11/5/2019	John Doe	First safety training for personnel	Dave Miller	

1.6 Personal Protective Equipment

1.6.1 For every task, always use:

Safety helmet: For protection against falling or flying parts and materials.

Protective gloves: For the protection of hands against friction, scrapes, puncture or deeper wounds, as well as against contact with hot surfaces.

Protective work clothing: Primarily for protection against entrapment by moving machine parts. Work clothing must be close fitting with a low resistance to tearing; it must have close-fitting sleeves and no protruding parts.

Protective footwear: For protection against heavy falling parts and slipping on slippery floors.
For special tasks, specific protective equipment is required when executing particular tasks:

Safety eye wear: For eye protection against harmful influences such as strong light, chemicals, dust, splinters or weather effects.

Hearing protection: For protection against loud noises and to prevent acoustic trauma.

Breathing mask (FFP-3 - according to country-specific requirements): For protection against materials, particles, and organisms.
In this case, for protection against the dust produced by the abrasion of carbon brushes and the PVC insulation of the conductor rail.

SECTION 2 - PRODUCT DISPOSAL

2.0 Product Disposal and Recycling

2.0.1 Once the product has reached it's end of life it must be disassembled and disposed of in accordance with local and regional environmental requirements.

2.0.2 In the absence of a return and disposal agreement, disassembled components must be recycled as follows:

- All metallic parts must be sorted and recycled by material type
- All plastic components must be sorted and recycled by material type
- All other components are to be disposed of in accordance with their material composition. Take care with items identified as Substances of Concern.

2.0.3 Local authorities or special disposal companies can provide information about environmentally appropriate disposal.

SECTION 3 - SPECIFICATIONS

3.0 Mechanical Specifications

3.0.1 Recommended cable: Pendant Control cable or equivalent, copper conductors 75oC

3.0.2 Bushings are available for cables ranging from 0.30" to 1.16" in diameter.

3.0.3 External Strain-Relief: An external strain-relief tie point on the bushing collar has been supplied for the connection of an external relief wire attached to the upper junction box of the cable. Pre-assembled pendants are supplied with an "S" hook for strain relief attachment.

3.0.4 Torque Values:

- Enclosure Screws: 15in-lbs.
- Switch Mounting Screws: 20in-lbs.
- Internal Cable Clamp: 10in-lbs.
- Bushing Clamp: 25in-lbs.
- Terminal Screws: 10in-lbs.

3.1 Electrical Specifications

3.1.1 Contacts rated 5A at 120V AC, continuous resistive load or clamped inductive load, 2A at 240V-AC for 500,000 operations.



WARNING

- Turn off all power supply sources and follow Lock-out/Tag-out Procedures while working on pendant.

3.2 Environmental Specifications



WARNING

- Use only mild detergents for cleaning pendant housings. Solvents and brake cleaners will damage the housings.

3.2.1 Outdoor Usage

3.2.1.1 Conductix-Wampfler allows for outdoor use when the pendant is properly shielded from UV light, direct sunlight, ice, snow, and other weather extremes. Conductix-Wampfler recommends storing the pendant in a protective case, cover, or outdoor-rated enclosure when not in active use.

3.2.2 UL Certification Reminder

3.2.2.1 This pendant is UL-certified as NEMA 4X for indoor use only. Any outdoor use is outside the scope of UL certification and must follow Conductix-Wampfler's recommendations to minimize risks.

3.2.3 Outdoor Use Warning

3.2.3.1 While the 80 Series Pendant is designed for NEMA 4X rated environments and certified for indoor use only by UL, Conductix-Wampfler permits outdoor use under specific conditions. Proper shielding and storage (e.g., protective case and cover) are essential to protect the pendant from weather extremes such as UV light, ice, or snow. Please note that outdoor use is not covered under UL certification.

SECTION 4 - INSTALLATION

4.0 Disassembly of the Enclosure (see figure 4.1)

4.0.1 Remove Bushing and Collar by loosening the bushing collar screws.

4.0.2 Remove Enclosure Cover by loosening the enclosure screws.

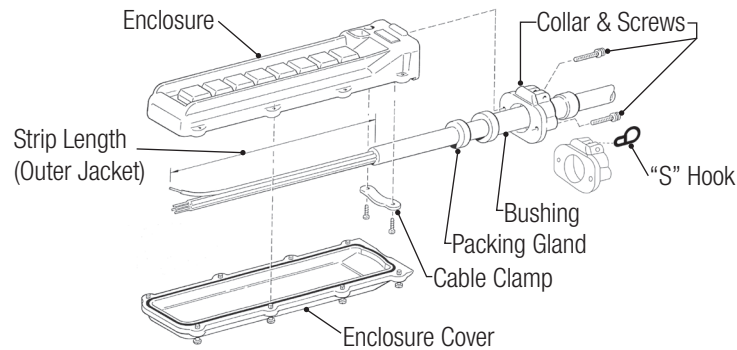


Figure: 4.1

4.1 Mounting Switches (refer to Figure: 4.1 & Figure: 4.2)

4.1.1 Skip to Section 4.3 if pendant is pre-assembled.

4.1.2 Remove Enclosure Cover if not already removed.

4.1.3 Remove the Silicon Switch Boot for switches not requiring a boot. On/Off switches are provided with green and red boots. Swap boots as needed before installing switches.

4.1.4 Fit switch into enclosure casing, aligning screw holes. Ensure switch boot is properly in place. Damaged or incorrectly installed boots will not seal properly, and moisture may leak inside the enclosure. Tighten switch screws securely. (Depending on switch, there will be either two or four screws.) Torque to 20 in-lbs.

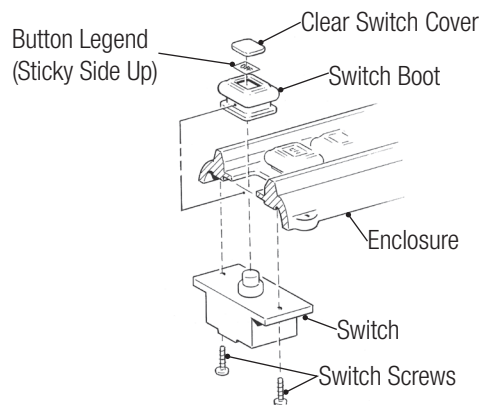


Figure: 4.2

SECTION 4 - SPECIFICATIONS

4.2 Mounting Mushroom Head and Selector, Switches

4.2.1 Remove enclosure cover is not already removed

4.2.2 Install switch frame by inserting it from the front of the enclosure through the square hole. Make sure the gasket and legend are in the correct position. From the back, install the tightening ring, make sure to align notches of the tightening ring with the tabs of the switch, and tighten (see Figure: 4-3).

4.2.3 Install switch to enclosure by using two screws provided. Make sure the designated letter on the switch read correctly from the top of the enclosure.

4.2.4 Follow Section 4.3 for cable installation, and wire as needed. (see switch schematics Section 6).

4.2.5 Apply appropriate legend label from the selector legend sheet

NOTE: Legend sheet is provided with Selector, Mushroom and on/off switches.

IMPORTANT: Firmly fasten tightening ring to secure frame. Align the notches for the tightening ring with the screw holes in the enclosure. The switch has tabs that fit into the cut-outs on the frame. Misalignment will prevent the switch from seating properly.

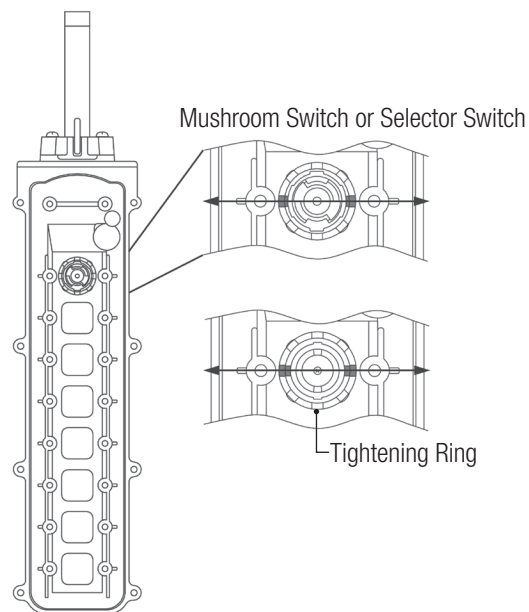


Figure: 4.3

SECTION 4 - INSTALLATION

4.3 Cable Installation (See Figure: 4.1, Page 10)

4.3.1 Disassemble pendant according to instructions in Section 4.0.

4.3.2 Cut the two packing glands apart and use only one. The glands are labeled in millimeters (see Table: 4.1, below). Be sure to choose the correct cable gland for the cable used. If the cable gland is loose, an adequate seal will not be achieved and moisture may leak inside the enclosure.

Part Number	Diameter / Inches	Diameter / Millimeters
34411	.295 - .354 .346 - .413	7.50 - 9.00 8.80 - 10.5
34412	.406 - .472 .464 - .531	10.3 - 12.0 11.8 - 13.5
34413	.524 - .591	13.3 - 15.0
*39825	.583 - .650	14.8 - 16.5
34414	.642 - .709	16.3 - 18.0
*39826	.701 - .768	17.8 - 19.5
34415	.760 - .827 .819 - .886	19.3 - 21.0 20.8 - 22.5
34416	.878 - .945 .937 - 1.004	22.3 - 24.0 23.8 - 25.5
34417	.996 - 1.063 1.055 - 1.122	25.3 - 27.0 26.8 - 28.5
34418	1.114 - 1.161	28.3 - 29.5

Table: 4.1 (* 39825 & 39826 used on enclosures with large collar.)

4.3.3 Pull cable through the bushing collar, bushing, and packing gland. Then feed the cable through the cable hole of the enclosure casing. Determine amount of outer jacket that needs to be stripped. Strip the outer jacket.

4.3.4 Position cable so that the cable clamp will clamp the jacketed part of the cable. Secure the cable by installing the cable clamp and tightening cable clamp screws.

4.3.5 Secure the bushing and collar firmly to the enclosure casing with the two collar screws after adjusting wiring length and clamping cable.

NOTE: Tighten all applicable screws using the recommended torque values from Section 3.0.4

4.3.6 Connect wiring connections to the push button terminals using UL listing ring terminals. (See switch schematics on pages 14-15.) Wire lengths must be a minimum of 6" long according to NEC code. Route wires along the inside of the housing. Never leave wire on top of switch due to interference with back cover installation.

SECTION 4 - INSTALLATION

4.4 Button Legends - Part Number: 34326

NOTE: A button legend sheet is supplied with all pre-assembled pendants. Switch covers are sent loose with all pendants.

4.4.1 Select the appropriate label from the legend sheet. Carefully remove from sheet. Labels have adhesive on the printed side. Carefully place label on the larger side of the clear switch cover.

4.5 Vertical Legends - Part Number: 34327

4.5.1 Select the appropriate label from the legend sheet. Carefully remove from sheet. Labels have adhesive on the backside, carefully place label on enclosure casing beside appropriate switch.

4.6 Reassembly of the Enclosure

NOTE: Refer to Figure: 4.1 on page 10 for image.

4.6.1 Ensure that all conductors are insulated from one another.

4.6.2 Ensure that the enclosure seal gasket is in place in the slot of the enclosure cover.

4.6.3 Remove all wire waste and debris from inside the enclosure case.

4.6.4 Install the enclosure cover and tighten enclosure screws.

SECTION 5 - SWITCH SCHEMATICS

34292	
34293	
34308	34308
34309	34309
34310	34310
34321	34321
34322	34322
34294	34294
34295	34295
34305	34305
34306	34306
34307	34307
37114	37114
37199	37199
34296	34296
34297	34297
34298	34298
34323	34323
37107	37107
37108	37108
34317	34317
34318	34318
34319	34319
34320	34320
37109	37109
37110	37110
34313	34313
37122	37122
37123	37123
37124	37124
37125	37125
34299	34299
34300	34300
37126	37126
34301	34301
34302	34302
37127	37127
34314B - (1K)	34314B - (1K)
34314D - (2K)	34314D - (2K)
34314 - (5K)	34314 - (5K)
34314C - (10K)	34314C - (10K)
34304	34304

SECTION 5 - SWITCH SCHEMATICS

Part Number	Switch Description
34292	Maintained On-Off, 1 NO
34293	Maintained On-Off, 1NC 1NO
34308	Momentary On-Off, 1NC, 1NO
34309	Momentary, 2NO without interlock
34310	Momentary, 2NC, 2NO, without interlock
34321	Momentary, 4NO with interlock
34322	Momentary, 4NC, 4NO, with interlock
34294	Momentary, 2NO with interlock
34295	Momentary, 2NC, 2NO with interlock
34305	Momentary, 1NC
34306	Momentary, 1NO
34307	Momentary, 1NC, 1NO
37114	Momentary, 2NC
37199	Momentary, 2NO
34296	2-speed, 4NO, with interlock
34297	2-speed, double contact, 2NC, 4NO, with interlock
34298	2-speed, double contact, 2NC, 2NO x 2 with interlock (late break)
34323	3-speed, 1NC, 6NO
37107	2 position selector, 1NC
37108	2 position selector, 1NO
34317	2 position selector, 1NC, 1NO (A-B)
34318	2 position selector, 2NO
34319	3 position selector, 2NC (A-Both-B)
34320	3 position selector, 2NO (A-Off-B)
37109	2 position selector, 2NC
37110	3 position selector, 1NO, 1NC
34313	Mushroom, 30mm, Red, 1NC (HORN)
37122	Mushroom, 30mm, Red, 1NO
37123	Mushroom, 30mm, Red, 1NO, 1NC
37124	Mushroom, 30mm, Red, 2NC
37125	Mushroom, 30mm, Red, 2NO
34299	Alternative, 1NO
34300	Alternative, 1NC, 1NO
37126	Alternative, 2NO
34301	1NO
34302	Toggle, 1NC, 1NO
37127	Toggle, 1NO, 1NC
34314B	Variable position resistor (1K)
34314D	Variable position resistor (2K)
34314	Variable position resistor (5K)
34314C	Variable position resistor (10K)
34304	Blind rubber gasket with metal plate

www.conductix.us

Conductix-Wampfler

has just one critical mission:

To provide you with energy and data transmission systems that will keep your operations up and running 24/7/365.

To contact your nearest sales office, please refer to:

www.conductix.contact

