PBM Pendant Pushbutton Stations

2040

Catalog 2040 • December 1987 • New

Features

- Light Weight, Rugged Molded Enclosures, "Safety Yellow."
- Molded-in Stainless Steel hangar brackets for external strain-relief cable (See note 1).
- Five Enclosure sizes, 1 motion to 5 motion with provision for single function option - pilot light, selector switch, push-pull unit, etc. (See note 2).
- Enclosures gasketed for NEMA 4X rating; Watertight, Dust-tight, Corrosion Resistant.
- Enclosure arranged for internal #8 grounding screw.
- Cord-Connector Kits -
  - 3/4" N.P.T. (19mm) for 2- and 4-button enclosures.
  - 1" N.P.T. (25mm) for 6-, 8-, and 10-button enclosures.
- Plastic Hole Plugs for unused holes, plugs available in yellow or black (See note 2).
- 22mm Oil-tight pushbutton elements available from stock —
  - 1 speed pushbuttons, black, red, green
  - 2 speed pushbuttons, black
  - 120 volt, 60 hertz neon pilot lights
    — red lens, red bulb
    — clear lens, green bulb
    — amber lens, red or green bulb
- Mechanical Interlock Attachment

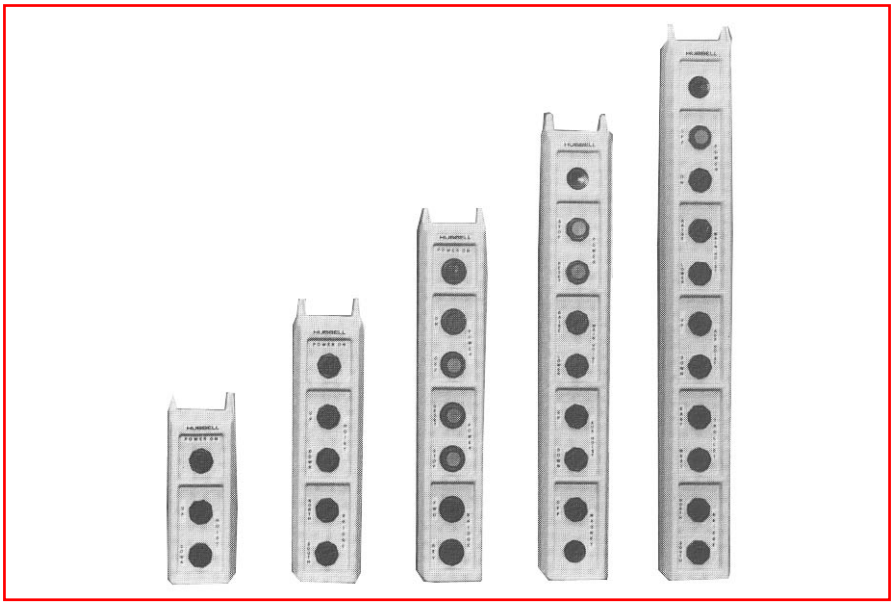
NOTES:

1. Enclosure arranged for 1/4"-20 screw for internal strain relief if desired.
2. Enclosures shipped with black hole plug for the top front hole of enclosure (single function option).

General

The Multi-Purpose PBM Pendant Pushbutton Stations have been designed to accept standard 22mm oil-tight pushbutton elements to provide full flexibility. Spacing of the mounting holes will permit drilling out the hole to install the larger 30mm oil-tight pushbutton elements if desired. Each enclosure is provided with a full compliment of standard self-adhesive nameplates to meet most pendant pushbutton applications. Hole spacing allows standard 2" x 2" square (51mm square) nameplates of oil-tight pushbutton lines to be installed.

The multiple screws used for fastening the front and back portions of the enclosures provide rigidity to the enclosures for added strength to survive severe blows delivered in typical material handling applications.



Specifications

Enclosures:

- General Enclosure Rating NEMA 1, 2, 12, 13 (Enclosures are rated NEMA 3, 3R, 4, 4X when equipped with Hubbell PBM NEMA 4X inserts and Hubbell Cord Connector Kits or comparable approved devices.

Cord Connector Kits:

- 3/4" N.P.T. Corrosion Resistant Nylon for cable diameter 5/8" to 7/8" (15.7mm to 22.2mm)
- 1" N.P.T. Corrosion Resistant Nylon for cable diameters 7/8" to 1-1/8" (22.2mm to 28.6mm)

Operators:

- 22mm Oil-tight Elements — NEMA 4X Rating
  - Neon Pilot Lights, 120V, 60 Hz
    - Red
    - Green
  - Resistor Type Pilot Lights, 120V, AC DC 250V DC
    - Red
    - Green
  - Extended Pushbuttons, 1 speed, NO-NC contacts.
    - Red
    - Green
    - Black
  - Extended Pushbuttons, 2 speed, ECNO-NO contacts
    - Black
  - Mushroom Head Pushbuttons, 1 speed, NO-NC contacts
    - Red
    - Green
    - Black
  - 2-position Selector Switch, NO-NC contact
    - Black

Contact Ratings

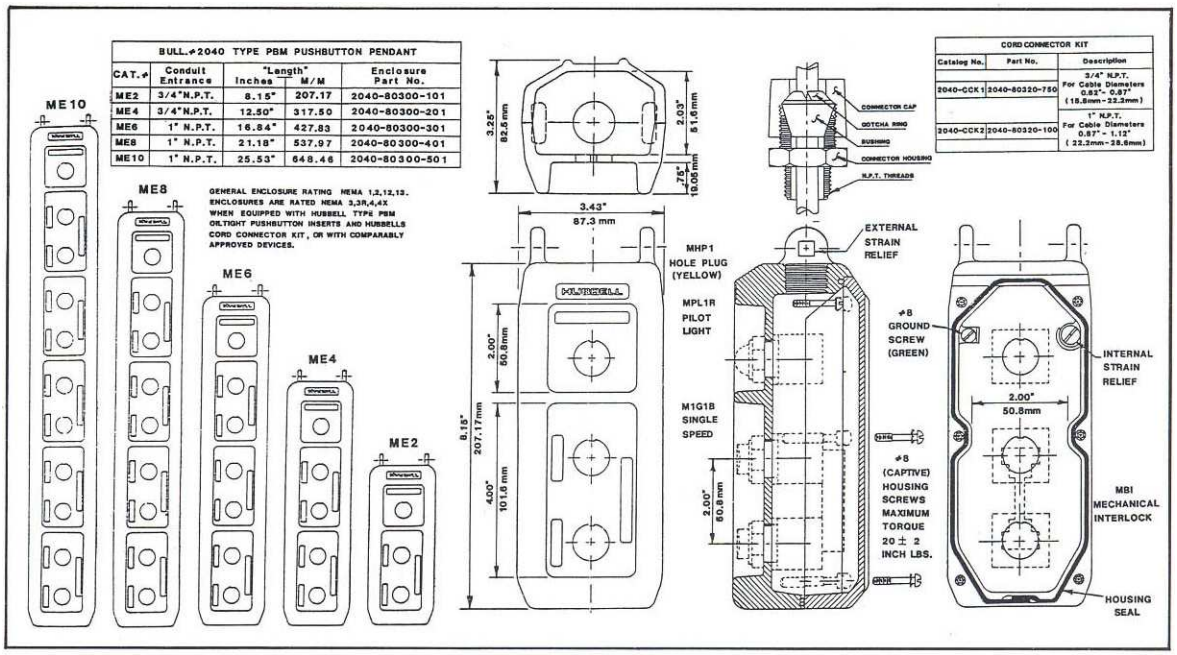
- NEMA A-600 AC
- NEMA P-300 DC

See chart below:

STANDARD CONTACT BLOCK RATINGS (Heavy Duty)

Meet or exceed NEMA Rating Designations A600, A300, B300 for ac, and P300 for dc

Description	V ac 50 or 60 Hz				V dc		
	120	240	480	600	24/28	125	250
Make & Emerg. Interrupting Capacity	60.0	30.0	15.0	12.0	5.7	1.1	0.55
Normal Load Brake	6.0	3.0	1.5	1.2	5.7	1.1	0.55
Continuous Amperes	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Volt-amperes —							
Make & Emerg. Inter Cap. .	7200	7200	7200	7200	138	138	138
Normal Load Brake	720	720	720	720	138	138	138



Description

Enclosures:
PBM Multi-Purpose Pendant Pushbutton Station Enclosures range from 1-motion (2-button) through 5-motion (10-button) units, each including a top front hole with molded hole plug (MHP2), label packs for motion and operator designations. Enclosures are fully gasketed, NEMA 4X rated, in size range per chart below:

Catalog Identification	Catalog Part. No.	DESCRIPTION			
		NEMA 4X Enclosure	ELK1 Label Pack	ELK2 Label Pack	MHP2 Black Hole Plug
2040-ME2	2040-80300-101	2-Button, 1-Motion	Included	-	One Included
2040-ME4	2040-80300-201	4-Button, 2-Motion	Included	-	One Included
2040-ME6	2040-80300-301	6-Button, 3-Motion	Included	Included	One Included
2040-ME8	2040-80300-401	8-Button, 4-Motion	Included	Included	One Included
2040-ME10	2040-80300-501	10-Button, 5-Motion	Included	Included	One Included

Enclosure Accessories:
Cord Connector Kits for use with PBM Enclosures, corrosion resistant nylon, UL Listed, for cable diameters ranging from 0.375" through 1.125" (9.5mm - 28.6mm) utilizing Kellems Catalog Numbers SHC-1035-CR through SHC-1044-CR as shown in chart below:

Catalog Identification No.	Catalog/Part Number	Description
2040-CCK1	2040-80820-750	Cord Connector Kit for PBM Enclosures 2040 ME2 & 2040ME4, 3/4" N.P.T. conduit hub size for cable diameters 0.620" - 0.875" (15.7mm - 22.2mm)
CCk2	2040-80820-100	Cord Connector Kit for PBM Enclosures 2040ME6, 2040ME8 and 2040ME10, 1" N.P.T. conduit hub size for cable diameters 0.875" - 1.125" (22.2mm - 28.6mm)

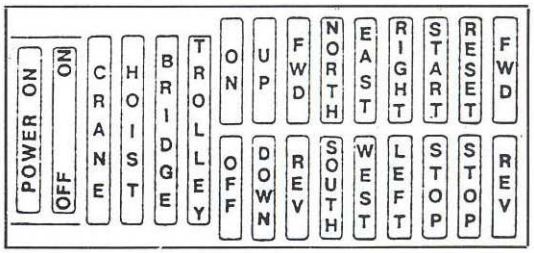
Enclosure Accessories: (continued)
Molded Hole Plugs, NEMA 4X Rated, Yellow or Black, for unused front mounting hole of PBM Enclosures:

Catalog Identification No.	Catalog/Part Number	Description
2040-MHP1	2040-80313-100	Molded Hole Plug, Yellow, with self-tapping mounting screw.
MHP2	2040-80313-101	Molded Hole Plug. Black with self-tapping mounting screw.

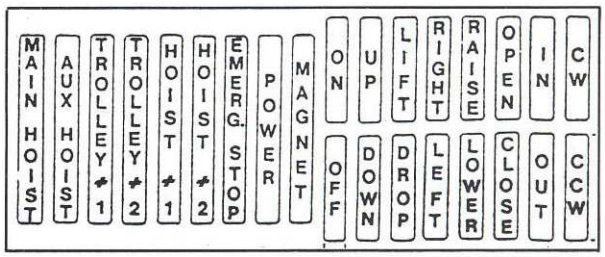
Additional Label Packs for PBM Enclosures can be ordered as follows: (Labels included in each Kit are shown in charts below)

Catalog Identification No.	Catalog/Part Number	Description
2040-ELK1	2040-80318-001	Label Pack, 1- and 2-motion PBMs
2040-ELK2	2040-80318-002	Label Pack, supplemental, adds to ELK1 for 3-, 4- and 5-motion PBM's

2040-ELK1



2040-ELK2



Description

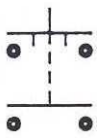
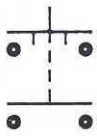
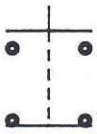
Control Elements:

The contact element configuration for typical control insert is shown in Figure 1 (M1G1 Series shown with dimensions in Figure 2).

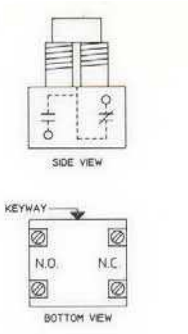
Figure 3 pictures the inserts with gaskets and octal nuts used to seal the inserts to pendant enclosures.
Figure 3a - Pushbutton (M1G1 Series)
Figure 3b - Selector Switch (MSS Series)
Figure 3c - Pilot Light (MPL1 Series)

Standard inserts are listed in the table below, but any 22mm oil-tight pushbutton element can be provided for the selected PBM pendant enclosure. Spacing between the mounting holes is sufficient to facilitate machining the hole to mount the larger 30mm oil-tight elements.

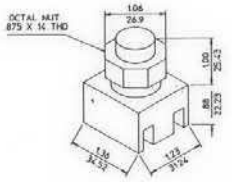
A typical schematic diagram is shown in Figure 4 (see Instruction 2040 for additional information).

Catalog Ident. No 2040	Catalog/Part Number 2040	Description	Contact Arrangement	Approximate Dimensions
M1G1B	80320-100	One Speed, NEMA 4X Insert, Black Button, NO-NC Contacts		1.875" Side View 1.25" x 1.375" Top and Bottom Views
M1G1R	80320-101	One Speed, NEMA 4X Insert, Red Button, NO-NC Contacts		
M1G1G	80320-102	One Speed, NEMA 4X Insert Green Button, NO-NC Contacts		
M2G1B	80320-110	Two Speed, NEMA 4X Insert Black Button, EC NO-NC Contacts		1.875" Side View 1.25" x 1.375" Top and Bottom View
MSS1	80321-100	2 Pos. Sel. Switch, NEMA 4X Insert, Black Knob, Maintained Both Pos NO-NC Contacts		1.875" Side View 1.25" x 1.375" Top and Bottom Views
M1G2B	80322-100	One Speed, Mushroom Head, NEMA 4X Insert Black, NO-NC Contacts		2.125" Side View 1.25" x 1.375" Top and Bottom Views
M1G2R	80322-101	One Speed, Mushroom Head, NEMA 4X Insert Red, NO-NC Contacts		
M1G2G	80322-102	One Speed, Mushroom Head, NEMA 4X Insert Green, NO-NC Contacts		
MPL1R	80324-100	120V 60Hz Pilot Light, Neon, Red Lamp and Lens		2.200" Side View 1.25" x 1.375" Top and Bottom Views
MPL1A	80324-101	120V 60Hz Pilot Light, Neon, Amber Lamp and Lens		
MPL1G	80324-102	120V 60Hz Pilot Light, Neon, Green Lamp and Lens		
MPL2R	80324-210	120V Pilot Light, Res. Type Red Lamp and Lens		
MPL2A	80324-211	120V Pilot Light, Res. Type Amber Lamp and Lens		
MPL2G	80324-212	120V Pilot Light, Res. Type Green Lamp and Lens		

INSERT ACCESSORIES		
MBI	80325-100	Mechanical Interlock Attachment for M1G and M2G Inserts
MNW	80325-101	Molded Nut Wrench for 22mm Inserts



Typical Arrangement (Standard M1G1 shown) Figure 1



Approximate Dimensions Pushbutton Insert Figure 2



Pushbutton Insert Figure 3a



Selector Switch Figure 3b



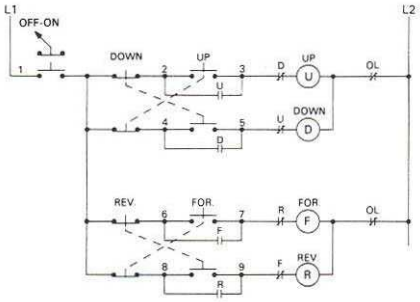
Pilot Light Figure 3c

Application

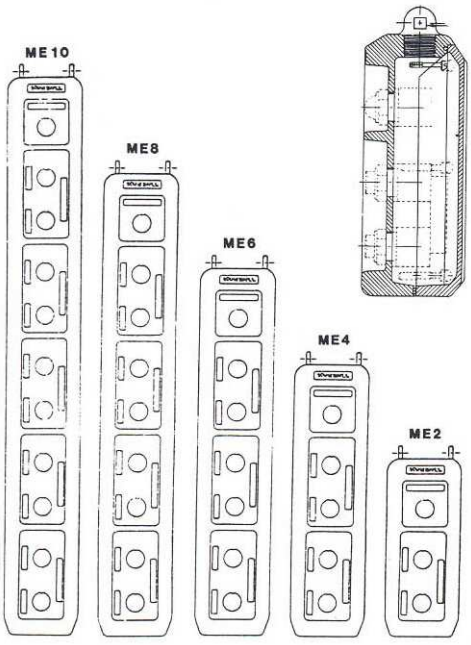
PBM Pendant Pushbutton Stations are designed for control of electrically powered industrial equipment such as electric overhead travelling (E.O.T.) cranes or hoists where one- or two-speed motors are used. The lightweight comfort-designed, enclosures fit readily into an operator's hand and yet are built using a polymer selected to resist hock treatment.

Standard indicator plate markings (self-adhesive) are included with each enclosure, but special nameplates or markings can be provided.

Select standard 22mm oil-tight contact elements from the table or specify the type required for your completed control station.



Typical Schematic Diagram
Figure 4



Ordering Information

When ordering, specify:

- Enclosure size from page 2
  (ME2, ME4, ME6, ME8, ME10)
- Enclosure Accessories from page 2
  - Cord Connector Kit
  - Hole Plugs for unused insert mounting holes
  - Additional Label Packs if required
- Control Inserts from page 3 (See Notes 1, 2, 3)
  - Pushbuttons, Selector Switch, Pilot Lights
  - Mechanical Interlocks

Note 1: Inserts are one-button units. Two are required for each motion.

Note 2: When assembled pendant stations are desired, specify assembled pendant enclosure with accessories and list the desired inserts from top to bottom. (Assembled stations do not include the application of labels from label packs).

Note 3: Consult factory for pushbuttons, selector switches or pilot lights not shown.

Enclosure Dimensions (Approx.)						
	Length		Width		Depth	
	Inches	MM	Inches	MM	Inches	MM
ME2	8.156	207	3.437	87	2.781	71
ME4	12.500	318	3.437	87	2.781	71
ME6	16.843	428	3.437	87	2.781	71
ME8	21.187	538	3.437	87	2.781	71
ME10	25.531	648	3.437	87	2.781	71

External Mounting Brackets extend 0.818" (20.8mm) above each enclosure and include 0.375" (9.5mm) square holes for strain relief cable. Each mounting hole in enclosure is 0.880" (22mm +) for oil-tight pushbutton elements. "Pairs of Mounting Holes" for each motion are 2.0" (51mm) on centers.

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