

ENCLOSURES & CONTROLS

UNICODE 2 INDUSTRIAL CONTROL STATION INSTALLATION INSTRUCTIONS



**IT IS IMPORTANT TO READ, UNDERSTAND AND FOLLOW THESE
INSTRUCTIONS TO MAINTAIN THE OUTLET BOX APPROVALS.
RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

- The Unicode 2 Industrial Control Stations are certified to CENELEC, IEC, CEC, and NEC standards.
- Equipment must be installed in accordance with all National and Local codes, acceptable to the Authority Having Jurisdiction.
- Only qualified personnel should install, inspect, and perform regular maintenance on an industrial control station.
- The Unicode 2 industrial control stations and components have been certified by CSA International for use in hazardous locations in the United States and Canada.
- This instruction manual and CE declaration shall be kept per the Directive 1999/92/EC in the Explosive Protection Documentation.
- Refer to the product label for important information regarding the hazardous location ratings, environmental ratings, and agency approvals. Adhere to all warning and caution statements.
- All unused openings shall have a close-up plug installed which has the same environmental rating as the enclosure. To maintain the Ex / AEx hazardous location rating, the ingress protection of the enclosure must not be compromised.
- Disconnect circuits before opening cover.
- Take extreme care not to damage the cover gasket. Damaging the cover gasket could affect the enclosure's integrity to protect the hazardous area.
- Dirt, grease, and other foreign material must not accumulate on the joint surface between the body and cover. The cover and body must fully mate against each other to provide the proper ingress protection.
- Do not attempt to repair the cover gasket. If the gasket is damaged contact factory for replacement.
- Only use the original cover screws that were provided with enclosure.
- Always keep the cover screws tight to maintain the ingress protection of the enclosure.
- Care should be exercised in material selection if the equipment is to be used in extremely corrosive environment.
- Since the conditions of use are outside of our control, the purchaser should determine the suitability of the outlet box for the intended use and assumes all risk and liability in regards to the specific application.

MOUNTING INSTALLATION



WARNING

**TO AVOID RISK OF
ELECTRICAL SHOCK TURN POWER
OFF BEFORE INSTALLATION AND MAINTENANCE**

1. Perform all assembly operations prior to installing the industrial control station.
2. Do not install/use the Unicode 2 industrial control station in a Zone 0 or 20 (classified) hazardous area.
3. It is the responsibility of the installer to properly install the enclosure using the mounting method provided. Do not drill into the back of enclosure; this will compromise the enclosure's protection method and ingress protection rating.
4. Mount the enclosure on a flat surface capable of supporting the box, wiring, etc.
5. Take care not to damage the cover gasket.
6. Conduits hubs shall be installed per the manufacturer's installation instructions and the applicable National and Local Electrical Codes. Hubs shall have the same or better ingress protection of the enclosure.
7. All unused cable entries must be sealed with blanking plugs.
8. Accessories mounted on the enclosures walls, such as packing boxes, blanking plugs, etc., must be certified themselves or compatible with the material certification.
9. Inspect and perform a continuity test for all electrical connections, including an insulation resistance testing for unwanted grounds.
10. Line up the cover and body bolt holes. Hand start the cover bolts first, before tighten bolts.
11. Cover must fully seat against the body to provide a proper seal.

UNICODE 2 COMPONENT CERTIFICATION

Unicode 2 Components	CSA International Component Certification	Hazardous Location Rating	Operating Temperature Range	Ingress Protection Rating	Enclosure Type Rating	Electrical Rating
Polyester Enclosure  U21 U22 U23	 164460 CSA Classes:4418-02 & 4418-82	Canadian Rating CL I, Div 2, Grp ABCD CL II, Grp EFG; CL III Ex e II DIP A21 United States Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e II AEx tD 21	-55°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Stainless Steel Enclosure  U61 U62 U63	 164460 CSA Classes:4418-02 & 4418-82	Canadian Rating CL I, Div 2, Grp ABCD CL II, Grp EFG; CL III Ex e II DIP A21 United States Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e II AEx tD 21	-55°C ≤ Ta ≤ +70°C	IP66	Type 4X	N/A
Feed-Through Earth Stud Terminal  PRESSTM20 PRESSTM25	 164460 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Selector Switch  US16	 164460 CSA Classes:4658-01 & 4658-81	Canadian Rating CL I, Div 2, Grp ABCD T6 Ex de IIC T6 United States Rating CL I, Div 2, Grp ABCD T6 CL I, Zone 1, AEx de IIC T6	-55°C ≤ Ta ≤ +80°C	N/A	N/A	A600 600Vac, 20A N150 125Vdc, 10A
Contact Block  UCB5 UCB9	 164460 CSA Classes:3218-02 & 3218-82	Canadian Rating CL I, Div 2, Grp ABCD Ex de IIC United States Rating CL I, Div 2, Grp ABCD CL I, Zone 1, AEx de IIC	-40°C ≤ Ta ≤ +75°C	N/A	N/A	A600 600V Heavy Duty
Pilot Light  UPG UPR UPW	 164460 CSA Classes:3218-02 & 3218-82	Canadian Rating CL I, Div 2, Grp ABCD Ex de IIC United States Rating CL I, Div 2, Grp ABCD CL I, Zone 1, AEx de IIC	-40°C ≤ Ta ≤ +75°C	N/A	N/A	12-264 Vac, 50/60 Hz, 12-60 Vdc
Pilot Light Head w/ Pilot Light  UPGO UPRO UPWO UPBO UPYO	 164460 CSA Classes:3218-02 & 3218-82	Canadian Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III Ex de IIC DIP A21 United States Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	12-264 Vac, 50/60 Hz, 12-60 Vdc
Illuminated Push Button w/ Pilot Light  ULGO ULRO ULWO ULBO ULYO	 164460 CSA Classes:3218-02 & 3218-82	Canadian Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III Ex de IIC DIP A21 United States Rating CL I, Div 2, Grp ABCD CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	12-264 Vac, 50/60 Hz, 12-60 Vdc

Enclosure catalog numbers may be followed by additional suffixes denoting entries, cover configuration, etc.

UNICODE 2 CERTIFICATION

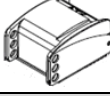
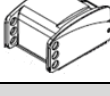
Unicode 2 Components	CSA International Component Certification	Hazardous Location Rating	Operating Temperature Range	Ingress Protection Rating	Enclosure Type Rating	Electrical Rating
Plug Head  UBP	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Push Button  UAORG UAOG UAOR UAOW UAOG UAQY	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Spring Return Mushroom Head Push Button  URO UBO	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Push-Pull Mushroom Head Push Button  UDO	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Rotary Actuator Head  UHO UJO UKO UMO UNO	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Pilot Light Head  UPGL UPRL UPWL UPBL UPYL	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Illuminated Push Button  ULGL ULRL ULWL ULBL ULYL	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-40°C ≤ Ta ≤ +60°C	IP66	Type 4X	N/A
Selector Switch  USH2 USH3 USH4	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grps FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-20°C ≤ Ta ≤ +74°C	IP66	Type 4X	N/A
Selector Switch Panel Mount  USH2P USH3P USH4P	 CSA Classes:3218-02 & 3218-82	Canadian Rating CL II, Div 2, Grp FG; CL III Ex e IIC DIP A21 United States Rating CL II, Div 2, Grp FG; CL III CL I, Zone 1, AEx e IIC AEx tD 21	-20°C ≤ Ta ≤ +74°C	IP66	Type 4X	N/A

Operator Heads, Contacts, and Pilot Lights catalog numbers may be followed by the suffix R or P.

UNICODE 2 PRODUCT LINE CROSS REFERENCE

Operator Heads	Contacts	Pilot Lights	Adapters	Optional Accessories
Plug Head  UBP				
Push Button  UAORG UAOG UAOR UAOW UAOG UAQY	Contact Block (3 max.)  UCB5 UCB9		Panel Mount Adapter  UPMA	
Spring Return Mushroom Head Push Button  URO UBO	Contact Block (3 max.)  UCB5 UCB9		Panel Mount Adapter  UPMA	Mushroom Guard  098657
Push-Pull Mushroom Head Push Button  UDO	Contact Block (3 max.)  UCB5 UCB9		Panel Mount Adapter  UPMA	Mushroom Guard  098657
Rotary Actuator Head  UHO UJO UKO UMO UNO	Contact Block (3 max.)  UCB5 UCB9		Panel Mount Adapter  UPMA	
Pilot Light Head  UPGL and UPGO UPRL and UPRO UPWL and UPWO UPBL and UPBO UPLY and UPYO		Pilot Light (1 max.)  UPG UPR UPW	Panel Mount Adapter  UPMA	
Illuminated Push Button  ULGL and ULGO ULRL and ULRO ULWL and ULWO ULBL and ULBO ULYL and ULYO	Contact Block (2 max.)  UCB5 UCB9	Pilot Light (1 max.)  UPG UPR UPW	Panel Mount Adapter  UPMA	
Selector Switch  USH2 USH3 USH4	Rotary Switch  US16			
Selector Switch Panel Mount  USH2P USH3P USH4P	Rotary Switch  US16			

Operator Heads, Contacts, and Pilot Lights catalog numbers may be followed by the suffix R or P.

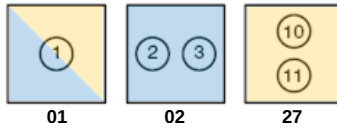
SHEET			Enclosure Type Rating	Ingress Protection Rating	Method of Protection	Temperature Code	Polyester Ind. Ctr. Eq. Encl. Series U2  U21 U22 U23	Stainless Steel Ind. Ctr. Eq. Encl. Series U6  U61 U62 U63
							Operating Ambient Temperature Range	Operating Ambient Temperature Range
Optional Accessories	Reserved for Future Use							
Padlockable Guard								
 UPLD1S UPLD2S			Type 4X	IP66	Ex e	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD1S UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD1S UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD1S UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
Padlockable Guard								
 UPLD1S UPLD2S			Type 4X	IP66	Ex de	T6	-40°C ≤ Ta ≤ +60°C	-40°C ≤ Ta ≤ +60°C
			Type 4X	IP66	Ex de	T6	-20°C ≤ Ta ≤ +60°C	-20°C ≤ Ta ≤ +70°C
			Type 4X	IP66	Ex de	T6	-20°C ≤ Ta ≤ +60°C	-20°C ≤ Ta ≤ +70°C

Enclosure catalog numbers may be followed by additional suffixes denoting entries, cover configuration, etc.

UNICODE 2 COVER LAYOUT

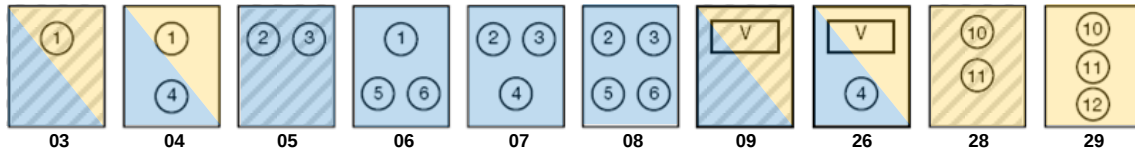
Unicode 2 Industrial Control Equipment Size 1 Enclosures U21 and U61

 Polyester
Cover Layout

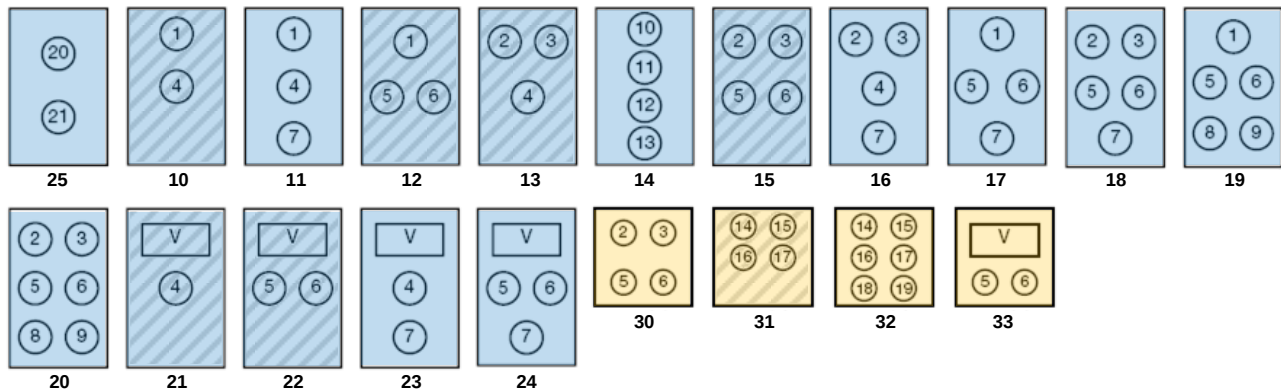


Stainless Steel
Cover Layout 

Unicode 2 Industrial Control Equipment Size 2 Enclosures U22 and U62



Unicode 2 Industrial Control Equipment Size 3 Enclosures U23 and U63

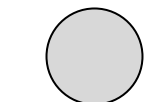


MAXIMUM ELECTRICAL COMPONENTS ALLOWED

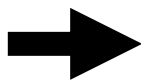


IMPORTANT

MAXIMUM
POWER DISSIPATION
TABLES NOT APPLICABLE



Operator Opening



3 - Contact Blocks

OR



2 - Contact Blocks
1 - Pilot Light

OR



1 - Pilot Light

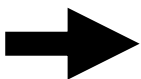
OR



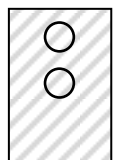
1 - Rotary Switch



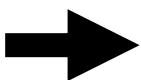
Enclosure Window



1 - Ammeter*



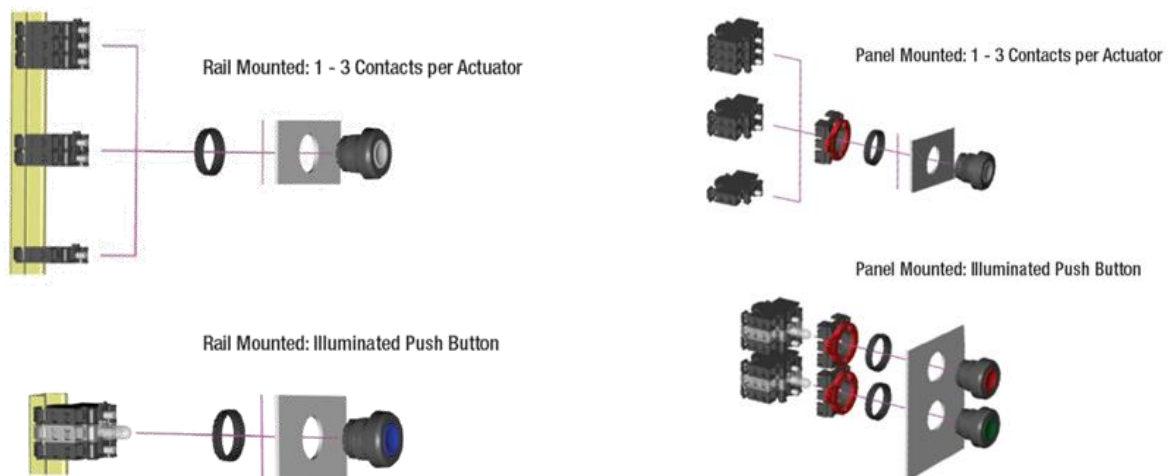
Shaded Layouts



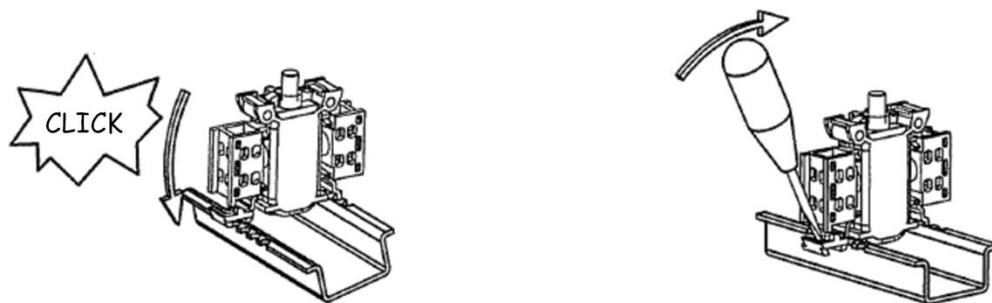
Ex e | AEx e Terminal Block
2.5 mm² / 10A Max.
Maximum 10

* - Ammeter only suitable for use in Ordinary Locations in North America.

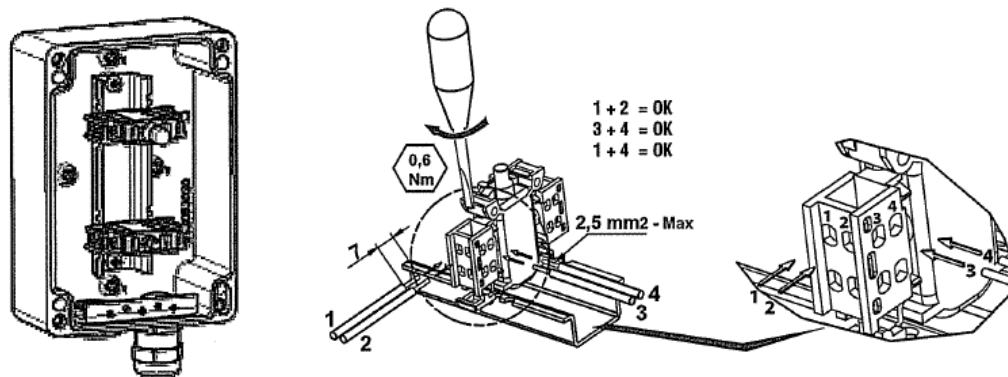
RAIL AND PANEL MOUNT



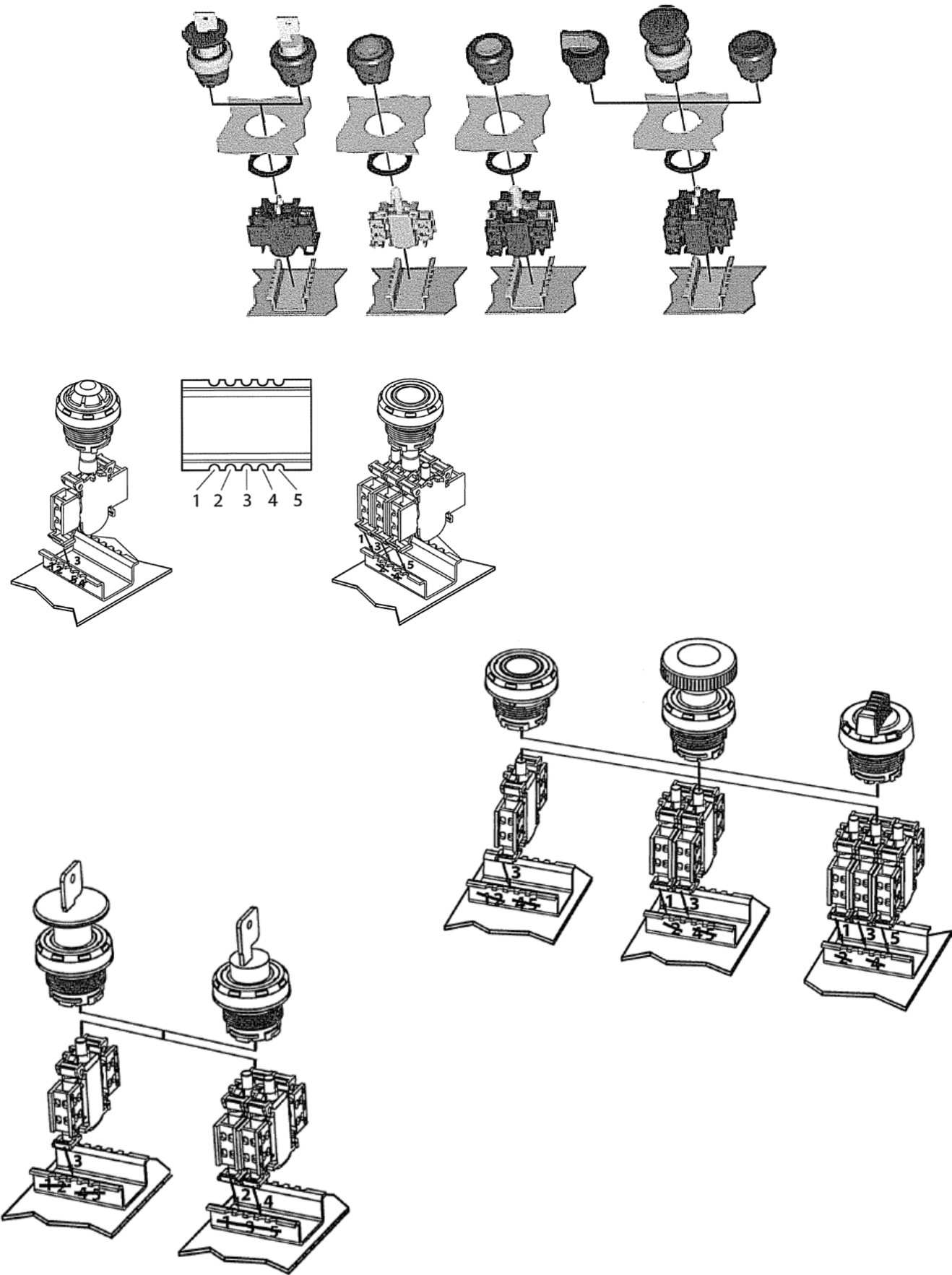
RAIL MOUNTING



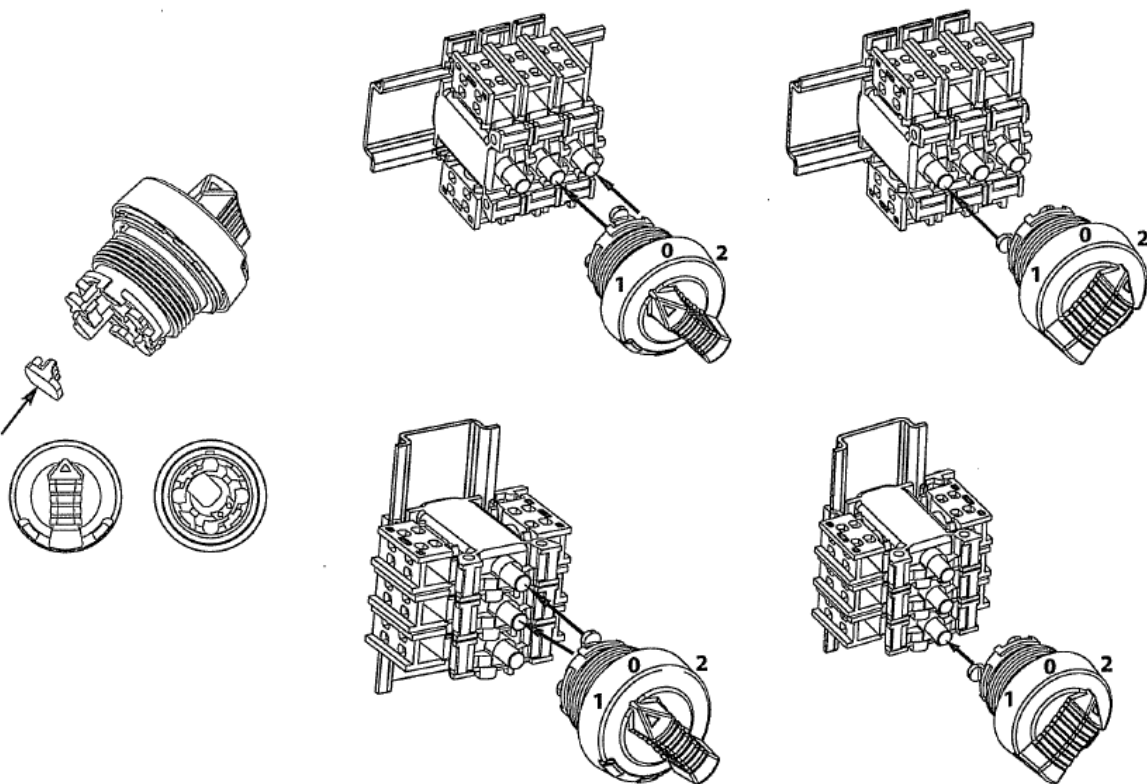
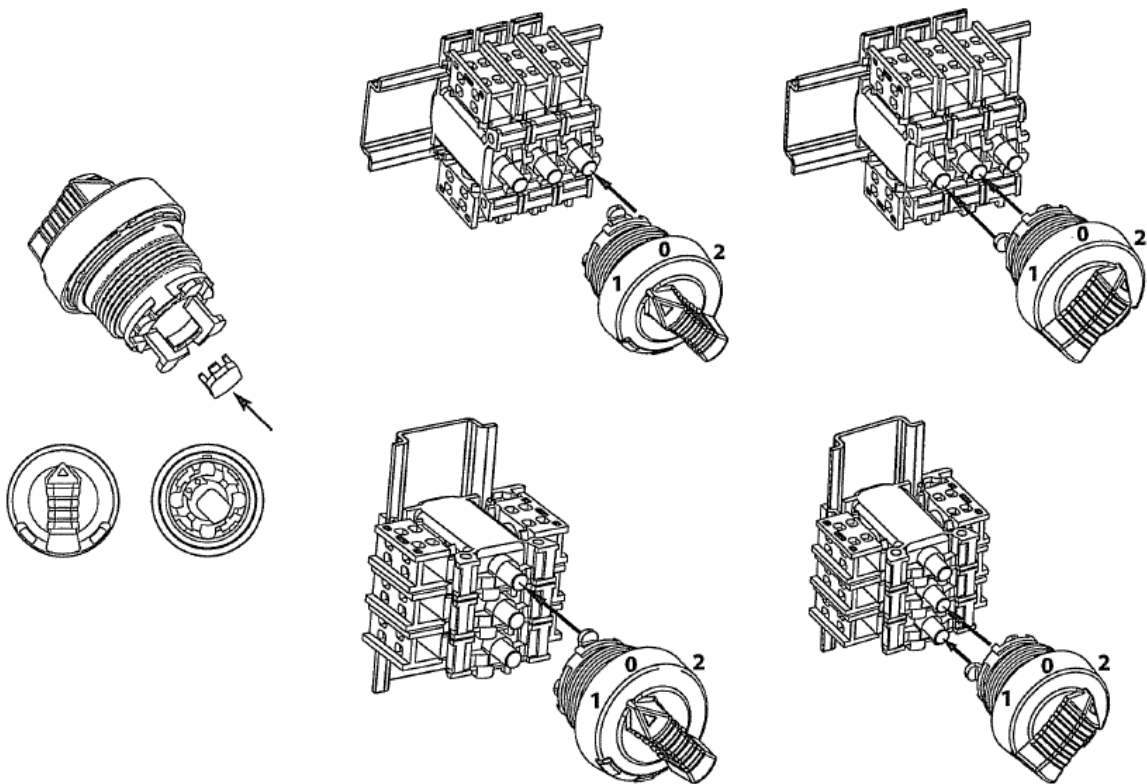
ELECTRICAL CONNECTION



MOUNTING OF COMPONENTS

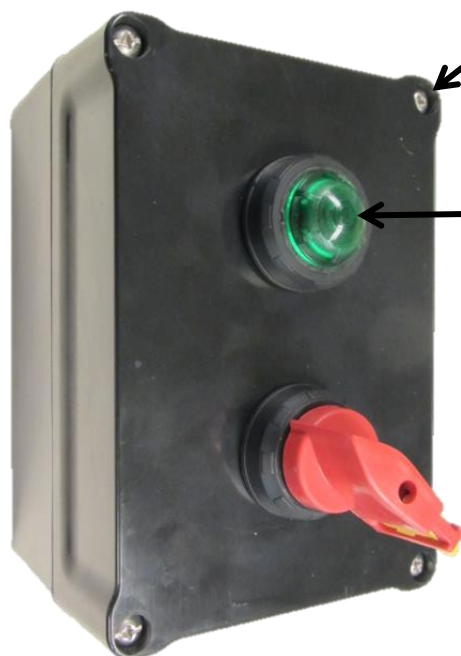


ASSEMBLY OF INSERT FOR ROTARY ACTUATOR HEAD



MARKING EXAMPLE

➤ Example on how to determine the ratings for a Unicode 2 Control Station.



Type CSPe – U21 Polyester Enclosure

Canadian Rating: CL I, Div 2, Grp ABCD; CL II Grp EFG; CL III
Ex e IIC; DIP A21
United States Rating: CL I, Div 2, Grp ABCD; CL II, Div 2, Grp FG; CL III
CL I, Zone 1, AEx e IIC; AEx tD 21
Operating Temperature Rating: $-55^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$
Ingress Protection Rating: IP66
Enclosure Type Rating: Type 4X
Electrical Rating: Not Applicable

Type TCe – UPG Pilot Head

Canadian Rating: CL II, Div 2, Grp FG; CL III
Ex e IIC; DIP A21
United States Rating: CL II, Div 2, Grp FG; CL III
CL I, Zone 1, AEx e IIC; AEx tD 21
Operating Temperature Range: $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$
Ingress Protection Rating: IP66
Enclosure Type Rating: Type 4X
Electrical Rating: Not Applicable

Type CVe – UP Pilot Light

Canadian Rating: CL I, Div 2, Grp ABCD
Ex de IIC T6
United States Rating: CL I, Div 2, Grp ABCD
CL I, Zone 1, AEx de IIC
Operating Temperature Range: $-40^{\circ}\text{C} \leq T_a \leq +75^{\circ}\text{C}$
Ingress Protection Rating: Not Applicable
Enclosure Type Rating: Not Applicable
Electrical Rating: 12-264Vac, 50/60 Hz | 12-60Vdc

Type TCe – USH Selector Switch Operator Head

Canadian Rating: CL II, Div 2, Grp FG; CL III
Ex e IIC; DIP A21
United States Rating: CL II, Div 2, Grp FG; CL III
CL I, Zone 1, AEx e IIC; AEx tD 21
Operating Temperature Range: $-20^{\circ}\text{C} \leq T_a \leq +74^{\circ}\text{C}$
Ingress Protection Rating: IP66
Enclosure Type Rating: Type 4X
Electrical Rating: Not Applicable

Rotary Switch - Series US16

Canadian Rating: CL I, Div 2, Grp ABCD T6
Ex de IIC T6
United States Rating: CL I, Div 2, Grp ABCD T6
CL I, Zone 1, AEx de IIC T6
Operating Temperature Range: $-55^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$
Ingress Protection Rating: Not Applicable
Enclosure Type Rating: Not Applicable
Electrical Rating: A600 | 600Vac, 20A | N150 | 125Vdc, 10A

Unicode 2 Control Station

Canadian Rating

CL I, Div 2, Grp ABCD T6
CL II, Div 2, Grp FG
CL III
Ex de IIC T6
DIP A21, IP66

United States Rating

CL I, Div 2, Grp ABCD T6
CL II, Div 2, Grp FG
CL III
CL I, Zone 1, AEx de IIC T^Δ
AEx tD 21, IP66

Temperature Code T6

Operating Temperature Range: $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$

Ingress Protection Rating: IP66

Enclosure Type Rating: Type 4X

UP Pilot Light Electrical Rating: 12-264Vac, 50/60 Hz | 12-60Vdc

US16 Selector Switch Electrical Rating: A600 | 600Vac, 20A | N150 | 125Vdc, 10A

All technical information and recommendations contained in this instruction sheet are based on industry practices and standards we believe to be reliable and accurate. It is the responsibility of the user to ensure the product is installed and used in safe manner that comply with all national and local electrical codes acceptable to the authority having jurisdiction