Primary Distribution Switchgear

UTX MTX

Technical Instruction
Disconnecting withdrawable unit UTX
Metering withdrawable unit MTX

Schneider Electric

As a global specialist in energy management with operations in more than 100 countries, Schneider Electric offers integrated solutions across multiple market segments, including leadership positions in energy and infrastructure, industrial processes, building automation, and data centers/networks, as well as a broad presence in residential applications. Focused on making energy safe, reliable, and efficient, the company's 100,000 plus employees achieved sales of more than 15.8 billion Euros in 2009, through an active commitment to help individuals and organizations make the most of their energy.

Schneider Electric EcoStructure™ Solutions

With the professional know-how in multi markets we operate and the close care of our customers, as well as our best practices in energy management, Schneider Electric has grown up from a provider of best-in-class products into an integrated solution provider. This year, we launched Ecostructure™, an architectural approach which unites Schneider Electric's unique expertise in power, datacenters, process and machines, building control and physical security to enable intelligent energy management solutions for customers seeking to optimize energy efficiencies across multiple domains of their business. By providing our customers with clear and comprehensive reference architectures across key environments and applications, we intend to reduce inefficiencies and save energy up to 30%.

IMPORTANT NOTE

The Operating Instructions, which are exclusively valid, are always supplied by Schneider Electric T&D together with the product in question. Our products may only be commissioned, operated, serviced, repaired or decommissioned together with Operating Instructions which have been directly enclosed to the product in question by the factory.

On the other hand, these operating instructions are provided to the customer at his/her request for information only. None of our products may be commissioned, operated, serviced, repaired or decommissioned on the basis of these operating instructions.

Non-compliance with this instruction may entail serious damage to the product, the objects pertaining to it, as well as a health hazard or mortal danger. Schneider Electric T&D shall not be held liable for any such damage.

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1 Schneider Electric at your service

Schneider Electric request the carefully reading of the following instructions in order to familiarize yourself with the product in this document before trying to install, operation, put into service or conduct the maintenance on it.

Our products are fully quality controlled and tested at the factory in accordance with the standards and regulations currently in force.

The correct functioning and lifespan of the product depend on respecting the installation, commissioning and exploitation instructions found in this manual. Not respecting these instructions is likely to invalidate any guarantee.

Local safety requirements which are in accordance with these instructions, especially those regarding the safety of product operators and other site workers, must be observed.

Schneider Electric declines any responsibility for the following points:
- the non respect of the recommendations in this manual which make reference to the international regulations in force.
- the non respect of the instructions by the suppliers of cables and connection accessories during installation and fitting operations,
- possible aggressive climatic conditions (humidity, pollution, etc.) acting in the immediate environment of the materials that are neither suitably adapted nor protected for these effects.

1.1 Particular instructions for operations and interventions

This user manual does not list the locking-out procedures that must be applied. The interventions described are carried out on de-energized equipment (in the course of being installed) or locked out (non operational).

Whilst commissioning and operating the product all general safety instructions for electrical applications (protective gloves, insulating stool, etc.) must be respected, this in addition to the standard operating instructions.

All operations must be completed once started.

The durations (for completing the operations mentioned) given in the maintenance tables are purely an indication and depend on on-site conditions.

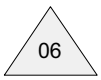
1.2 Protection equipments

Only qualified and accredited people can operate on our products. They must be equipped with all the correct protective equipment required for the task being performed.

A qualified person is one who has the skills and knowledge related to the construction, installation and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Except when it is imposed, the wearing of the gloves has been voluntarily limited in this manual so as to have clear visuals of the hands and operations described.

1.3 Symbols of information



Code for a product recommended and marketed by Schneider Electric

Tightening torque value
Example: 21 Nm

Mark corresponding to a key

1.4 Symbols and important safety informations

The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

1.5 Contacts

Groupe Schneider Electric service centers are there for:

- Engineering and technical assistance
- Commissioning
- Training
- Preventive and corrective maintenance
- Spare parts
- Adaptation work

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2 Regulations and Provisions

2.1 Remarks on this Technical Instruction

This Technical Instruction describes transport, assembly, operation, handling and maintenance of disconnecting withdrawable unit UTX and metering withdrawable unit MTX.

It must be stored so that it is at any time readily accessible for and can be used by persons who are to work on the switchgear.

When re-selling the UTX/MTX or the switchgear with UTX/MTX, make sure that this Technical Instruction is transmitted as well.

As our products are subject to continuous further development, we reserve the right to changes regarding standards, illustrations and technical data.

All dimensions not specified in detail are in millimeters.

2.2 Use in line with the intended purpose

The disconnecting withdrawable unit UTX and metering withdrawable unit MTX are intended exclusively as a switching unit in air-insulated medium-voltage switchgear. It may only be used in the scope of the specified standards and the switchgear-specific technical data. Any other use constitutes improper use and may result in dangers and damage.

NOTICE

Operating reliability and useful life depend on correct operation.

Disclaimer of liability

The manufacturer shall not be held responsible for damage which occurs if:
· Instructions in this Technical Instruction are not complied with.
· The UTX/MTX is not operated according to its intended use (see above).
. The UTX/MTX is assembled, connected or operated improperly.
. Accessories or spare parts are used which have not been approved by the manufacturer.
. The UTX/MTX is converted without the manufacturer's approval, or if inadmissible parts are attached.

2.3 Applied Standards

The three-pole disconnecting withdrawable unit UTX and metering withdrawable unit MTX:
. complies with IEC Standard: IEC 62271-102
. complies with Chinese Standard:
GB 1985-2004; GB / T 11022-1999;
DL / T 486-2000

Environmental and operating conditions

Disconnecting cassette UTX and metering cassette MTX may only be operated under normal operating conditions acc. to IEC 62271-1.

Operation under conditions deviating from these is only admissible upon consultation and with the written approval of the manufacturer.

2.4 Safety Provisions

The work described in this Technical Instruction may only be performed by specialist electricians who have proved their experience with the disconnecting cassette UTX and metering cassette MTX and the EN 50110-1 standard.

Applicable standards and regulations

The locally applicable accident prevention, operating and work instructions must be complied with.
. Installation: IEC 61936-1 / HD 637 S1
. Operation of electrical equipment:
EN 50110-1.

Read these instructions carefully before you work on the UTX/MTX,and perform the work detailed in it according to the descriptions. Do not perform any work on the UTX/ MTX which is not described in this Technical Instruction.

2.5 Disposal after the end of the useful life

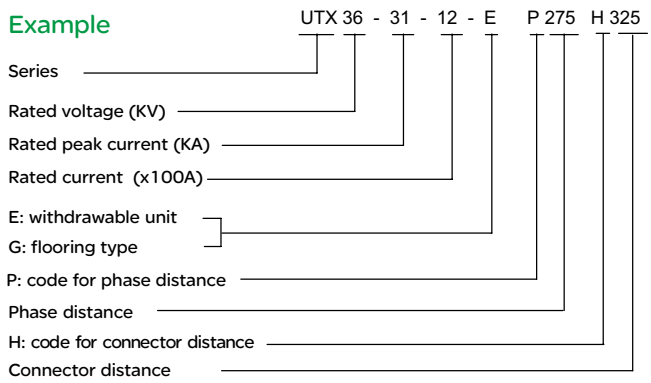
A manual on disposal after the end of the service life is available for disposal of the disconnecting cassette UTX and metering cassette MTX.

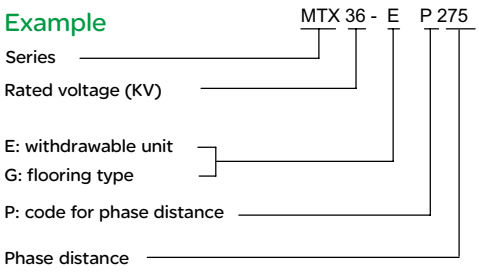
Disposal at the end of the service life is performed as a service by the Service Center at the manufacturer's which is subject to a fee.

3 Technical data

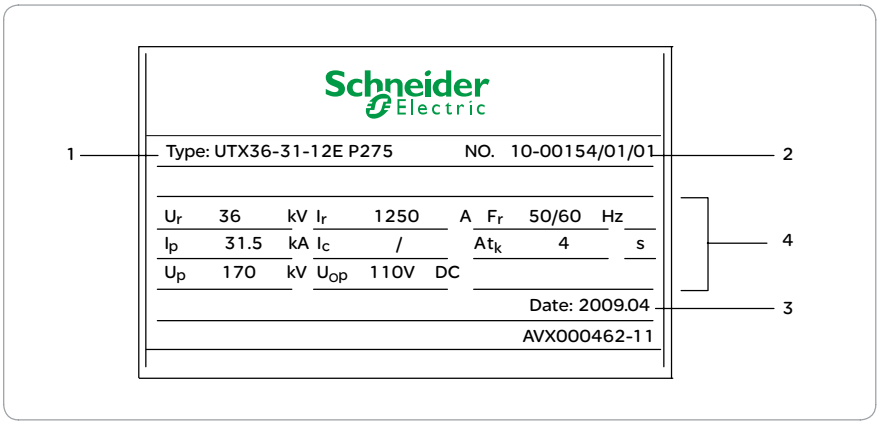
3.1 Type designation

The type designation of the disconnecting withdrawable unit UTX and metering withdrawable unit MTX as indicated on the rating plate provides information about essential technical data(Fig. 3.1 & Fig. 3.2). The following examples explain the coding of the type designation:





The following data on the rating plate are relevant for replacement or in case of any queries



Legend

1. Type designation
2. Serial number
3. Year of construction
4. Technical data

Fig. 3.1 Example of rating plate for UTX

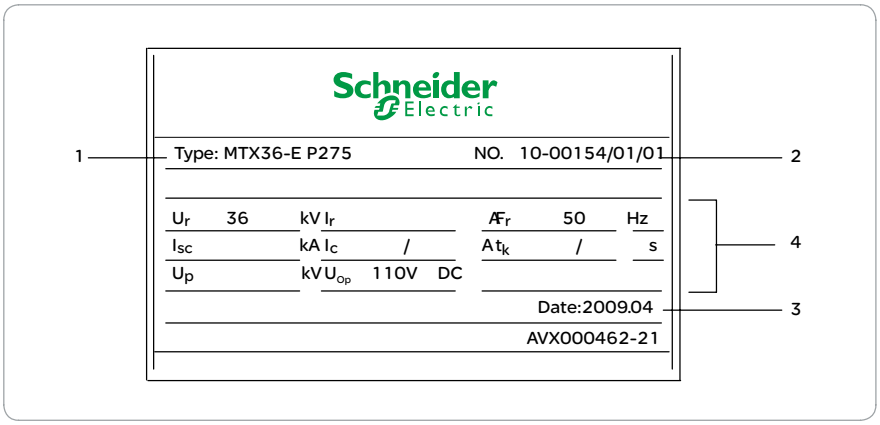


Fig. 3.2 Example of rating plate for MTX

4 Variants

4.1 UTX-E middle rolling disconnecting withdrawable unit

1. Contact arms
2. Disconnecting poles
3. Withdrawable unit
4. Middle wheels
5. ”IP” protection sheet
6. Front plate
7. Nameplate
8. Rollers Secondary terminal
9. Insertion opening for crank to move
10. Frame and mechanism

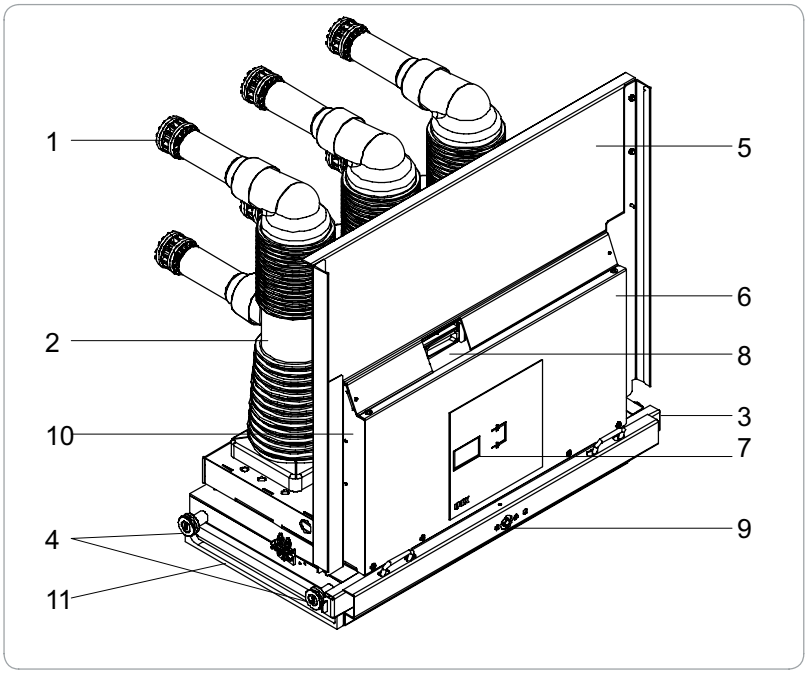


Fig. 4.1 UTX-E middle rolling disconnecting withdrawable unit

4.2 MTX-E middle rolling metering withdrawable unit

1. Contact arms
2. Voltage transformer
3. Withdrawable unit
4. Middle wheels
5. ”IP” protection sheet
6. Front plate
7. Nameplate
8. Rollers Secondary terminal
9. Insertion opening for crank to move
10. Frame
11. Shutter rail

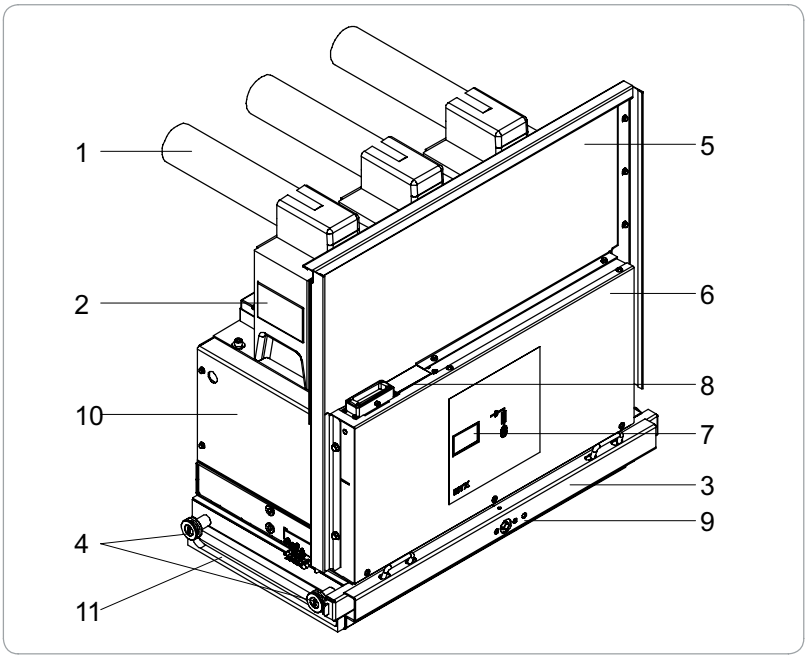


Fig. 4.2 MTX-E middle rolling metering withdrawable unit

5 Delivery, storage and transportation

5.1 Delivery

Handle shipping units carefully when unloading and unpacking them.

Shipping units must be unpacked immediately after receipt. Any damage occurred in transit must be recorded and reported immediately to the manufacturer.

On delivery, the consignment must be checked for completeness.

The supplier must be notified in writing about any discrepancies.

Fig. 5.1 Shipping unit

5.2 Storage

The transport packaging is not interded for storage. The risk of storing the parts in packed condition shall be the consignee's responsibility.

5.3 Transport

Transport using a forklift truck

Only transport the UTX/MTX within its shipping unit on a pallet.

Transport without pallet

Lift UTX/MTX according to Fig. 5.2. A rope (not a metallic steel cable) Ø 12 to 15 mm or a strap is required to this effect.

Use the hanging holes to maintain the circuit breaker roughly in horizontal position when hanged.

No other hanging point allowed.

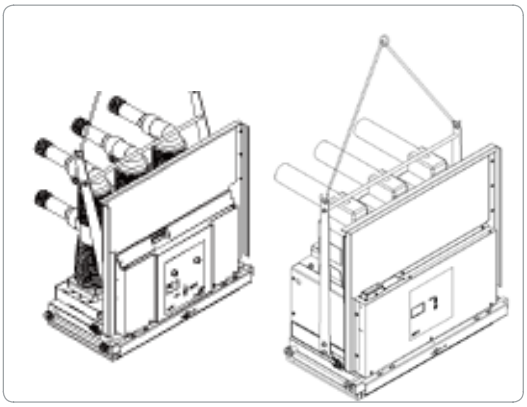


Fig. 5.2 Lifting device for UTX and MTX

⚠ WARNING

Make sure the rope or strap is strong enough to bear the weight of the UTX/MTX and do not touch the product.

⚠ WARNING

Remove the lifting brackets before entering in cubicle.

Weights [kg]

Type	Rated Current [kA]			
	1250A	1600A	2000A	2500A
UTX-E withdrawable Unit	255	260	280	290
MTX-E withdrawable Unit	390			

(Guide values without packaging)

6 Assembly

6.1 Instructions for Assembly

Dimension drawings are made available on request.

Check technical data on rating plate.

Check auxiliary voltage of the control and operating devices installed.

⚠ WARNING

The safety provisions of chapter 2.4 must be observed.

6.2 UTX-E / MTX-E Mechanical assembly - Mounting the transport truck (optional)

Fig. 6.1 Transport truck

A transport truck (optional) is used to rack the UTX-E/MTX-E into the switchgear panel (Fig 6.1).

For the design and method of operation of the transport truck used, please refer to the instructions for the panel in question.

Placing UTX/MTX on transport truck and racking it into the switchgear.

NOTICE

When performing the following assembly steps, observe and comply with the instructions given for the panel used.

Fig. 6.2 Couple the transport truck to the panel.

Place the UTX/MTX on the transport truck rails.

Lock the UTX/MTX on the transport truck.

Make sure that the lifting brackets are removed.

Grease the disconnecting fingers (Fig. 7.2).

Couple the transport truck to the panel (Fig. 6.2).

Unlock the UTX/MTX from the transport truck.

Push the UTX/MTX into the panel until it is engaged in the interlock rocker.

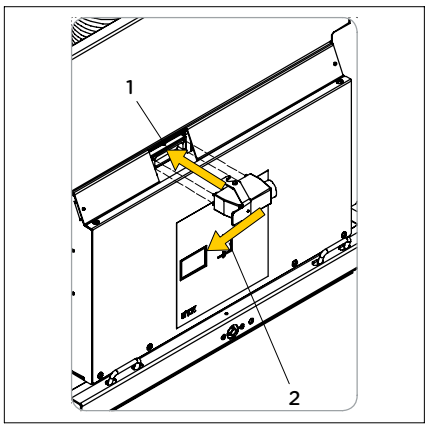
Release the transport truck from the panel.

6.3 Connecting the control lines

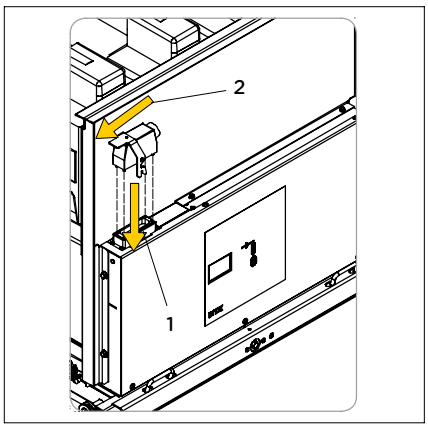
The control lines are connected, depending on design, via control connectors (Fig. 6.3 & Fig. 6.4). The control lines are wired in the UTX/MTX up to the control connector.

Terminal with control connector

Push the 64-pin control connector of cubicle onto the connector of UTX (Fig. 6.3) or MTX (Fig. 6.4) and lock it.



■ Fig. 6.3 UTX control connector 64-pin (with coding).
1. Insert control connector
2. Lock.



■ Fig. 6.4 MTX control connector 64-pin (with coding).
1. Insert control connector
2. Lock.

6.4 Interlocks (where applicable)

Mechanical interlocks

The basic interlocks of UTX/MTX prevent operating errors.

⚠ WARNING

You must be familiar with these interlocks before operating the withdrawable unit.

Electrical interlocks

They have been designed according to the circuit diagram.

Interlock	Function of interlock	Method of operation of interlock
Between the withdrawable unit and the earthing switch	The withdrawable unit cannot be racked in while the earthing switch of the switchgear panel is in “ON” position	The moving crank handle is blocked automatically
	The earthing switch cannot be switched on as soon as the withdrawable unit has left its disconnected position	The earthing switch cannot be switched on. Do not force!
Between the withdrawable unit and the door of the switchgear panel (only UTX/MTX with door interlock)	The withdrawable unit cannot be racked in while the door of the switchgear panel is open	The moving crank handle is blocked automatically
	The door of switchgear cannot open as soon as the withdrawable unit has left its disconnected position	Do not force for opening!
Between the control connector and the withdrawable unit	The withdrawable unit cannot be racked in while the control connector is not well assembly	Do not rack in force!
	The control connector cannot remove as soon as the withdrawable unit has left its disconnected position	Do not remove in force!

7 Maintenance

7.1 Maintenance schedule

The disconnecting withdrawable unit UTX and the metering withdrawable unit MTX are maintenance-free for an operating time of over 20 years.

A visual inspection of the withdrawable unit is recommended at 4-year intervals, depending on the operating conditions and the stress to which the unit is subjected. In case of frequent condensation or air pollution (dust, smoke or corrosive gases), the maintenance intervals must be adapted to the actual conditions. If dirt deposits are found on the cassette, it must be cleaned by specialists.

Maintenance intervals (ambient conditions according to IEC 62271-1)	Maintenance work
Every 4 years	Check for contamination; condensation can damage. If necessary, clean UTX/MTX (See section 7.2 to 7.4)
After 20 years	Clean, grease UTX/MTX (See section 7.5)

7.2 Cleaning insulating components

To ensure the specified insulating level, the insulating components must be clean. On principle, general cleanliness of the UTX/MTX or of its external parts should be ensured.

Use a dry cleaning cloth for slight soiling

Clean by means of a dry, lint-free cloth. Depending on dirt collected, replace cloth as often as necessary.

Use cleaning agents for severe soiling

⚠ DANGER

The use of other cleaning agents is not admissible.

Wear protective gloves.

Use cleaning agent according to manufacturer's instructions.

Soak the cloth thoroughly and wipe the insulating components. Keep duration of the exposure as short as possible.

Expose the cleaned surface to the air for at least two hours.

7.3 Corrosion protection

Drive mechanisms and covers have a long-term protection against corrosion.

Any damage to the paint, scratches and other damage must be repaired immediately to avoid corrosion.

Contact the manufacturer's Service Center.

7.4 Avoid condensation

To ensure the specified insulating level, the UTX/MTX -especially its insulating components- must not be exposed to condensation.

Measures to take in case of condensation

1. If condensation of the UTX/MTX is detected, the insulating components must be cleaned according to section 7.2.

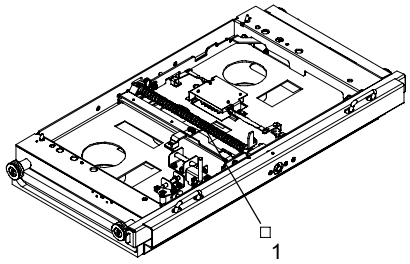
2. Installation or inspection of the appropriate heating. It must provide a sufficient heating performance to prevent condensation on the UTX/MTX.

7.5 Lubrification instructions

Lubricants

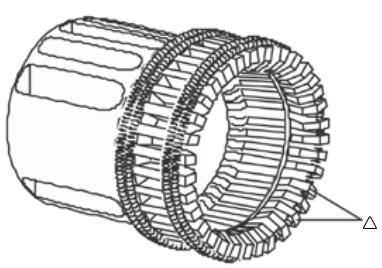
NOTICE

Only approved lubricants may be used (See section 8.2).



□ High-pressure grease
1 Spindle

■ Fig. 7.1 Rack-in mechanism.



△ Contact lubricant Kontasynth

■ Fig. 7.2 Moving contacts.

Lubrication procedure

1. Clean the points of lubrification (Fig. 7.1 to 7.2) using a lint-free cotton cloth; in case of serious contamination, use a cleaning agent (See section 7.2).
2. Apply a thin coat of lubricant, using e.g. a paintbrush.

8 Annex

8.1 Accessories

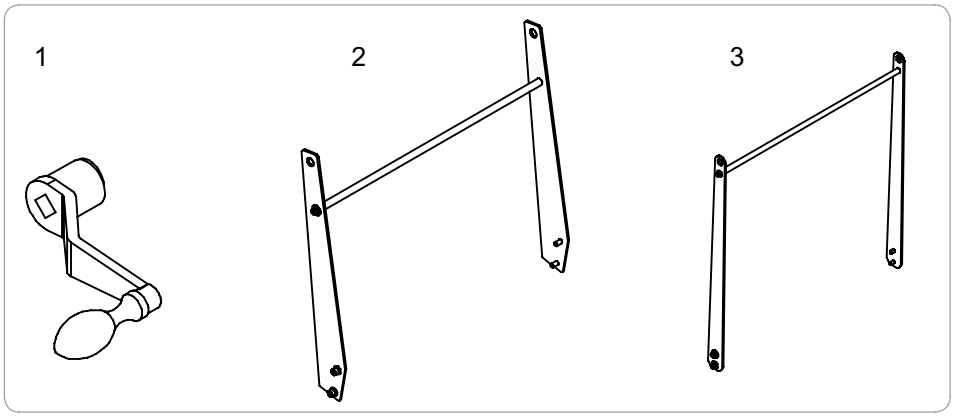


Fig. 8.1
Accessories for UTX and MTX

The accessories must be enquired about if necessary.

1. Moving crank handle
2. Lifting bracket for UTX
3. Lifting bracket for MTX

8.2 Auxiliary products

Only the following auxiliary products may be used, which are available from Schneider Electric. The use of other auxiliary products is not admissible.

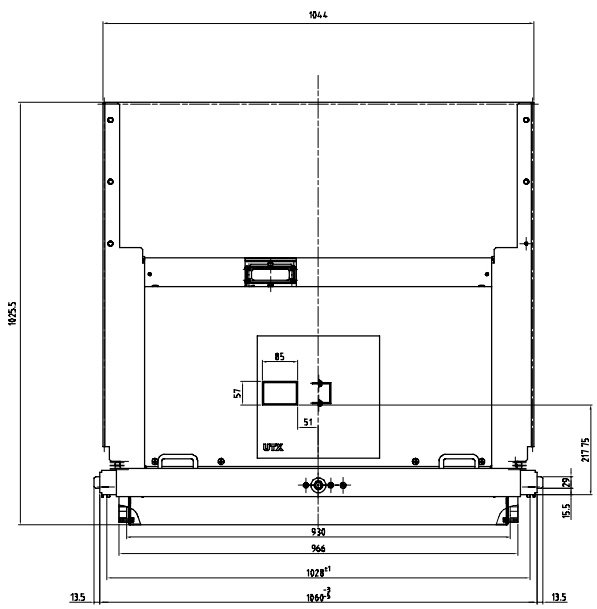
Designation	Order NO.
Contact lubricant Kontasynth, 0.5kg can	S 008167
High-pressure grease, 0.3L can	ST 312-101-833
Cleaning agent, 1L can	S 008152

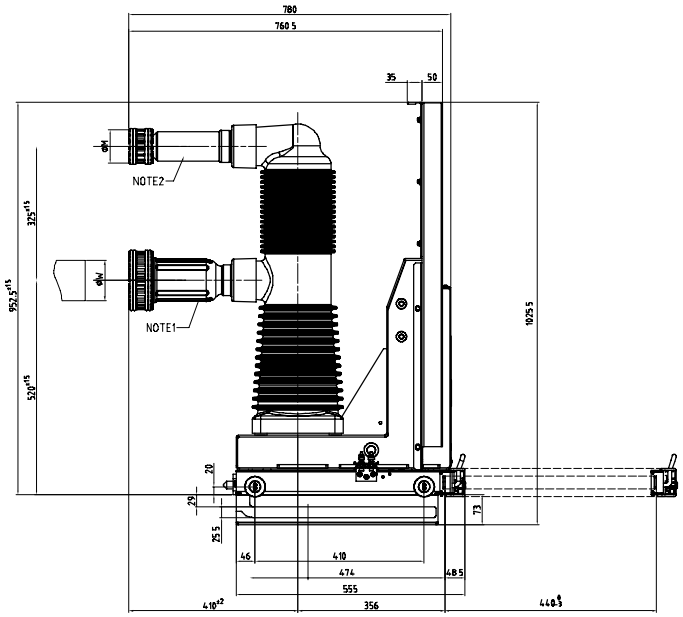
9 Drawing

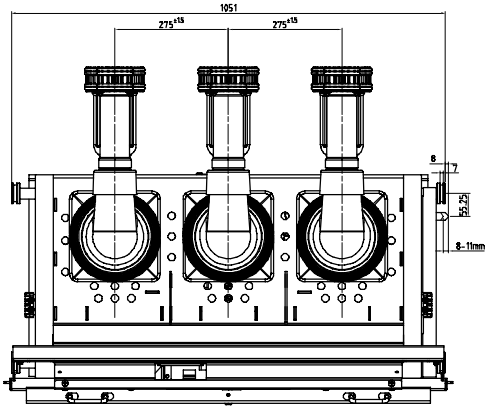
9.1 Outline drawing

UTX-E middle rolling disconnecting withdrawable unit (≤ 2500A, ≤ 31.5KA)

(AVXN00060-01)





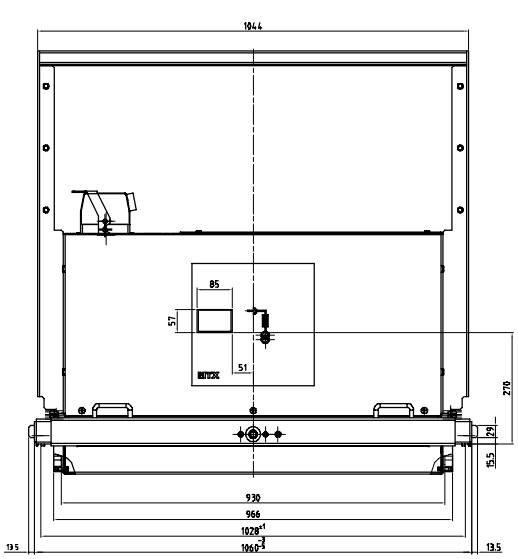


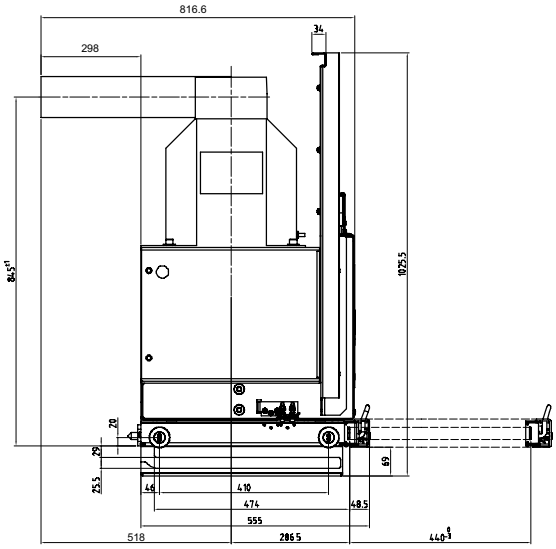
Diameter of connecting finger for different rated current				
Rated current (A)	2500	2000	1600	1250
Ø M (mm)	148	118	118	55
Ø W (mm)	109	79	79	49

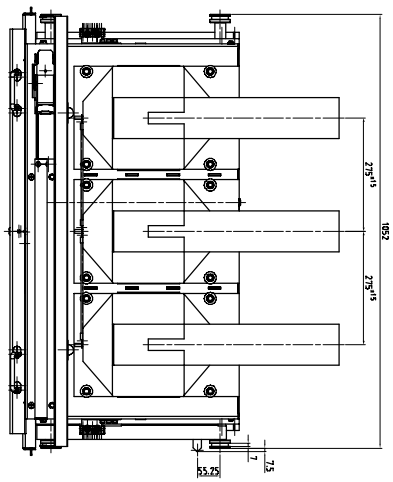
Ø

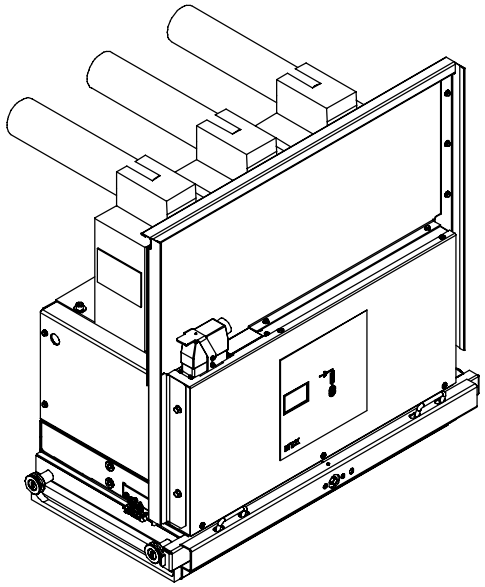
MTX-E middle rolling metering withdrawable unit

(AVXN00080-11)





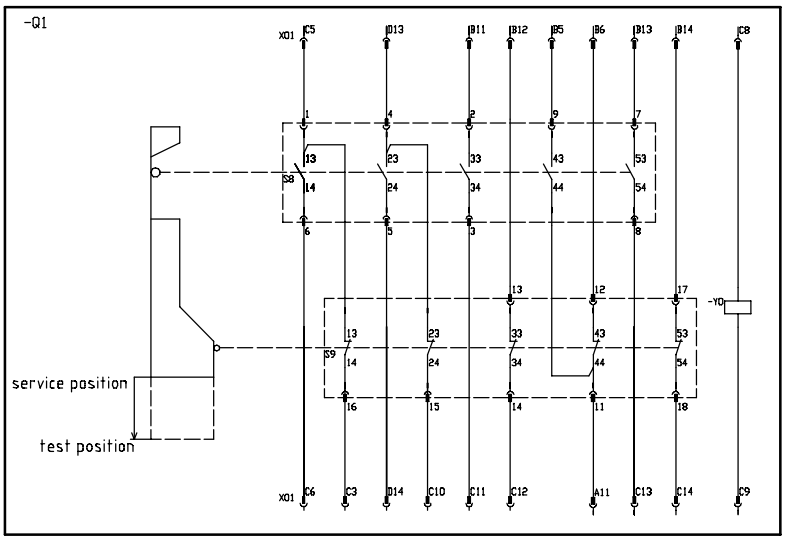




9.2 Standard wiring diagram

UTX-E 64-pin plug

(ASX002100-41)



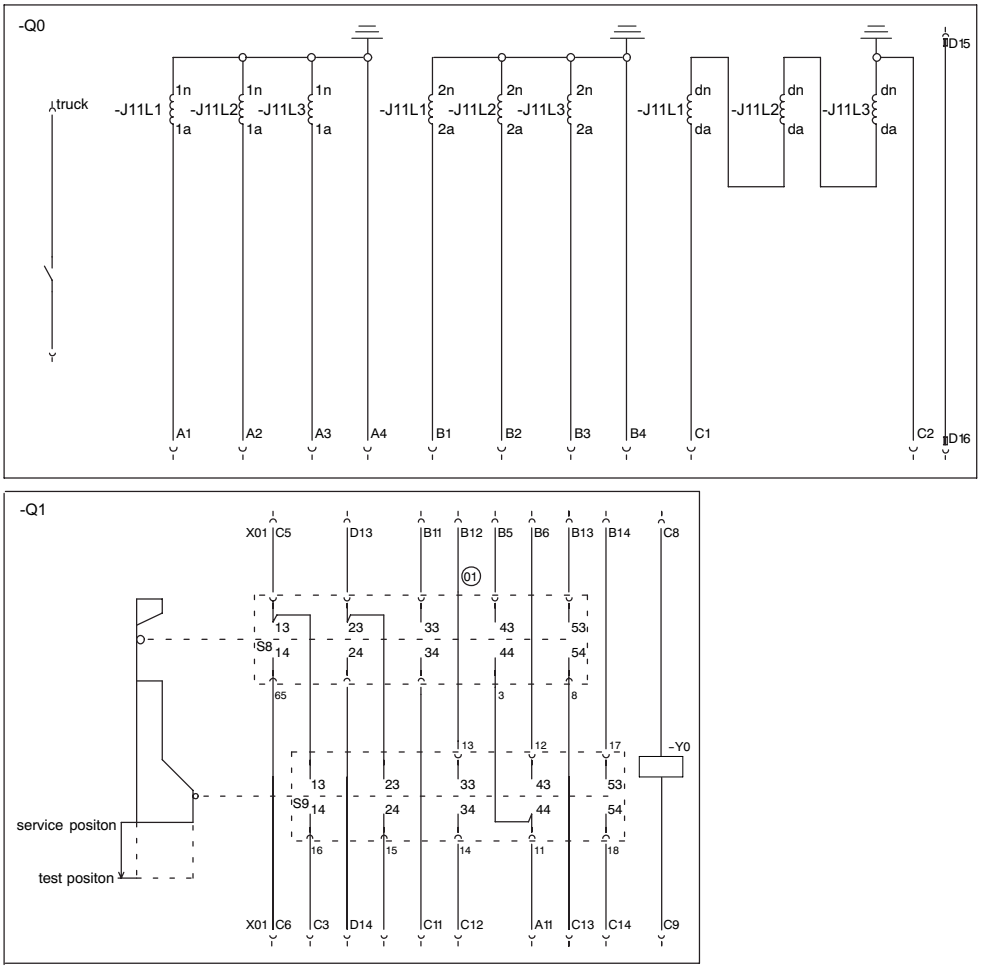
Trolley is in service position.

-Q1 Units incorporated in the switchgear truck in compliance with order
-S8 Test position switch
-S9 Service position switch
-Y0 Blocking magnet blocking for trolley

Note:
UTX 36: 64-pin plug (withdrawable)

MTX-E 64-pin plug

(ASX002100-51)



1. This circuit diagram shows the maximum switchgear equipment. The standard equipment does not include option items; if the customer requires option items, please state it when placeing the order.
2. Trolley is in service position.

-Q0 Units incorporated in the switchgear equipment in compliance with order
-J11 Voltage transformer
-Q1 Units incorporated in the switchgear truck in compliance with order
-S8 Test position switch
-S9 Service position switch
-Y0 Blocking magnet blocking for trolley (option)

Note:
MTX 36: 64-pin plug (withdrawable)

10 Notes

If you have any comments on the use of this document or on the use of the equipment and services that are described in it, please send us your remarks, suggestions and wishes to:

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