

## H02B

**Boards, substations or switching arrangements for the supply or distribution of electric power (basic electric elements, their assembly, including the mounting in enclosures or on bases, or the mounting of covers thereon, see the subclasses for such elements, e.g. transformers H01F, switches, fuses H01H, line connectors H01R; installation of lines, cables, or other conductors for supply or distribution H02G)**

### Definition statement

*This subclass/group covers:*

- Electric enclosures such as electric boxes, circuit-breaker boxes, electric cabinets, low to high voltage switchgear enclosed in casings, cabinets or in switchyards, enclosed and non enclosed substations, for the supply and distribution of electric power.
- The installation, maintenance and association of switching devices and switchgear with each other or with other electric devices, in such enclosures, substations, switchyards.

### Relationship between large subject matter areas

When the focus is on details of switching devices, like constructional details and not so much the association with other electric devices or enclosures, these devices are classified in [H01H](#). The same applies to specific details of electrical connections, to be classified instead in [H01R](#).

Cabinets that are referred to as electric(al) cabinets but are in fact enclosing electronic, telecommunication or data devices are not classified in [H02B](#).

### References relevant to classification in this subclass

*This subclass/group does not cover:*

Basic electric elements, their assembly, including the mounting in enclosures or on bases, or the mounting of covers thereon, are to be classified in the relevant subclass of the element:

|  |                      |
|--|----------------------|
| Transformers                           | <a href="#">H01F</a> |
| Switches, fuses, relays                | <a href="#">H01H</a> |
| Electric connectors                    | <a href="#">H01R</a> |
| Installation of lines, cables, busbars | <a href="#">H02G</a> |

## H02B 1/00

### Frameworks, boards, panels, desks, casings; Details of substations or switching arrangements

#### Definition statement

*This subclass/group covers:*

- Electromechanical aspects of enclosures (boxes, wall mounted casings, electric cabinets) housing electric equipment mostly in the low and medium voltage range and the mounting of electric equipment therein.
- Details of electric equipment insofar as it is related to its mounting in the enclosure (mounting parts).

#### Relationship between large subject matter areas

Details of substations are actually classified either in [H02B 5/00](#) or [H02B 7/00](#).

#### References relevant to classification in this group

*This subclass/group does not cover:*

|   |  |
|---|--|
| Electronic casings, cabinets                    | <a href="#">H05K</a>                                 |
| Telecomm cabinets                               | <a href="#">H04Q 1/00</a>                            |
| Batteries casings                               | <a href="#">H01M 2/1016</a>                          |
| Distribution boxes                              | <a href="#">H02G 3/08</a>                            |
| Electrical centers for vehicles                 | <a href="#">B60R 16/0238</a>                         |
| Enclosures for data-processing equipment        | <a href="#">G06F 1/181</a>                           |
| Housings and supporting racks for energy meters | <a href="#">G01R 11/04</a> <a href="#">G01R 1/04</a> |

Examples of places where the subject matter of this main group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

|   |                           |
|---|---------------------------|
| Electrical casings that relate to the installation of cables in or on buildings, the so called distribution | <a href="#">H02G 3/08</a> |
|---|---------------------------|

|  |                           |
|--|---------------------------|
| boxes, joint or junction boxes, electrical boxes for switches and sockets, their mounting on or in walls |                           |
| Protective tubings or conduits for the installation of electric cables or lines in or on buildings       | <a href="#">H02G 3/04</a> |

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|  |   |
|--|---|
| Mounting of several circuit breakers together              | <a href="#">H01H 71/0271</a>                              |
| Ventilation in electronic enclosures                       | <a href="#">H05K 7/20</a>                                 |
| Electrical connections between juxtaposed circuit breakers | <a href="#">H01R 29/26E</a> , <a href="#">H01H 71/082</a> |
| Cabinet frame  | <a href="#">H05K 7/183</a>                                |

### Special rules of classification within this group

Special details concerning the corner connections or the profile of a chassis of an electric cabinet may be classified in [H02B 1/01](#) or [H02B 1/30](#), but will have to take the corresponding Indexing Code ([H02B 1/014](#), [H02B 1/014](#)).

### H02B 1/06

having associated enclosures, e.g. for preventing access to live parts (shutters or guards for contacts H02B1/14)

### References relevant to classification in this group

*This subclass/group does not cover:*

|                                 |                           |
|---------------------------------|---------------------------|
| Shutters or guards for contacts | <a href="#">H02B 1/14</a> |
|---------------------------------|---------------------------|

### H02B 1/14

Shutters or guards for preventing access to contacts

## (shielding of isolating-contacts in withdrawable switchgear H02B11/24)

### References relevant to classification in this group

*This subclass/group does not cover:*

|  |                            |
|--|----------------------------|
| Shielding of isolating-contacts in withdrawable switchgear | <a href="#">H02B 11/24</a> |
|--|----------------------------|

## H02B 1/16

**Earthing arrangements (earthing arrangements for substations H02B5/01, for switchgear H02B11/28, H02B13/075; earth plates, pins, or other contacts H01R4/66)**

### References relevant to classification in this group

*This subclass/group does not cover:*

|                                       |  |
|---------------------------------------|--|
| Earthing arrangements for substations | <a href="#">H02B 5/01</a>                                |
| Earthing arrangements for switchgear  | <a href="#">H02B 11/28</a> , <a href="#">H02B 13/075</a> |
| Earth plates, pins, or other contacts | <a href="#">H01R 4/66</a>                                |

## H02B 1/24

**Circuit arrangements for boards or switchyards (devices for displaying diagrams H02B15/00; service supply H02J11/00)**

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|                                 |                            |
|---------------------------------|----------------------------|
| Devices for displaying diagrams | <a href="#">H02B 15/00</a> |
| Service supply                  | <a href="#">H02J 11/00</a> |

### Special rules of classification within this group

In groups [H02B 1/26](#) to [H02B 1/56](#), in the absence of an indication to the contrary, an invention is classified in the last appropriate place.

## H02B 1/26

**Casings; Parts thereof or accessories therefor (adapted for a single switch H01H; enclosures for cables, lines or bus-bars H02G; distribution, connection or junction boxes H02G3/08; casings in general H05K)**

### References relevant to classification in this group

*This subclass/group does not cover:*

|                                     |                      |
|-------------------------------------|----------------------|
| Casings adapted for a single switch | <a href="#">H01H</a> |
|-------------------------------------|----------------------|

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |                           |
|--|---------------------------|
| Enclosures for cables, lines or bus-bars   | <a href="#">H02G</a>      |
| Distribution, connection or junction boxes | <a href="#">H02G 3/08</a> |
| Casings in general                         | <a href="#">H05K</a>      |

## H02B 1/54

**Anti-seismic devices or installations (for buildings in general E04B1/98; [N: shock absorbers F16F])**

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |                           |
|--|---------------------------|
| Anti-seismic devices or installations for buildings in general | <a href="#">E04B 1/98</a> |
| Shock absorbers  | <a href="#">F16F</a>      |

## H02B 3/00

**Apparatus specially adapted for the manufacture, assembly,**

## or maintenance of boards or switchgear

### Definition statement

*This subclass/group covers:*

Devices used in the maintenance, replacement, retrofitting, repairing, manufacturing or assembly of boards, electric cabinets, switchgear or substations for the supply or distribution of electric power.

### References relevant to classification in this group

*This subclass/group does not cover:*

|  |                           |
|--|---------------------------|
| Apparatus for installing, maintaining electric cables or lines | <a href="#">H02G 1/00</a> |
|--|---------------------------|

## H02B 5/00

### Non-enclosed substations; Substations with enclosed and non-enclosed equipment

#### Definition statement

*This subclass/group covers:*

- Association of several medium to very high voltage air or gas insulated switchgear in a switchyard, not necessarily involving a transformer.
- Switchgear (transformers, switching devices) mounted on poles.

#### Relationship between large subject matter areas

- When a double busbar/line configuration is involved this is to be also classified in [H02B 1/22](#).
- Documents classified in [H02B 5/06](#) might also be classified in [H02B 13/035](#), when specific details of the switching devices are involved.
- Anti-vibration or anti-seismic installations are to be also classified in [H02B 1/54](#).

## H02B 7/00

### Enclosed substations, e.g. compact substations

#### Definition statement

*This subclass/group covers:*

Association of several medium to very high voltage air or gas insulated switchgear enclosed in a building (above ground level or underground) not necessarily involving a transformer.

### Relationship between large subject matter areas

Cooling details are to be also classified in [H02B 1/56](#).

### References relevant to classification in this group

*This subclass/group does not cover:*

|   |                            |
|---|----------------------------|
| Constructional details of the substation building | <a href="#">E04H 5/04</a>  |
| Details of mounting, supporting the transformer   | <a href="#">H01F 27/06</a> |

## H02B 7/06

**Distribution substations, e.g. for urban network (H02B7/01 takes precedence)**

### References relevant to classification in this group

*This subclass/group does not cover:*

|                           |                           |
|---------------------------|---------------------------|
| Gas-insulated substations | <a href="#">H02B 7/01</a> |
|---------------------------|---------------------------|

## H02B 11/00

**Switchgear having carriage withdrawable for isolation**

### Definition statement

*This subclass/group covers:*

Switchgear normally enclosed in a casing/cubicle having the interrupting unit arranged in or on a withdrawable unit/carriage mostly in the medium to high-voltage range.

Details of the withdrawal mechanism, interlocking means, grounding, shutters, electrical contacts of such switchgear.

### Relationship between large subject matter areas

Smaller low-voltage withdrawable units are usually classified in [H02B 1/36](#).

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|                                    |                            |
|------------------------------------|----------------------------|
| Preventing discharge, corona rings | <a href="#">H01H 33/24</a> |
| Details of contacts                | <a href="#">H01H 1/00</a>  |
| Vacuum switches                    | <a href="#">H01H 33/66</a> |
| Fuses                              | <a href="#">H01H 9/10</a>  |

### H02B 11/04

Isolating-contacts, e.g. mountings, shieldings (shutters or guards for isolating contacts H02B1/14, H02B11/24; switch contacts H01H; line connectors in general H01R)

### References relevant to classification in this group

This subclass/group does not cover:

|   |  |
|---|--|
| Shutters or guards for isolating contacts | <a href="#">H02B 1/14</a> <a href="#">H02B 11/24</a> |
|---|--|

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|                            |                      |
|----------------------------|----------------------|
| Switch contacts            | <a href="#">H01H</a> |
| Line connectors in general | <a href="#">H01R</a> |

### H02B 11/06

Means for duplicate bus-bar selection (layouts for duplicate bus-bar selection H02B1/22)

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|   |                           |
|---|---------------------------|
| Layouts for duplicate bus-bar selection | <a href="#">H02B 1/22</a> |
|---|---------------------------|

## H02B 11/167

truck type (H02B11/127 takes precedence)

### References relevant to classification in this group

*This subclass/group does not cover:*

|                      |                             |
|----------------------|-----------------------------|
| Withdrawal mechanism | <a href="#">H02B 11/127</a> |
|----------------------|-----------------------------|

## H02B 11/173

drawer type (H02B11/127 takes precedence)

### References relevant to classification in this group

*This subclass/group does not cover:*

|                      |                             |
|----------------------|-----------------------------|
| Withdrawal mechanism | <a href="#">H02B 11/127</a> |
|----------------------|-----------------------------|

## H02B 13/00

Arrangements of switchgear in which switches are enclosed in, or structurally associated with, a casing, e.g. cubicle (in association with main transformer H02B5/00 , H02B7/00 ; switchgear having carriage withdrawable for isolation H02B11/00 )

### Definition statement

*This subclass/group covers:*

- Medium to high-voltage switchgear enclosed in a casing that might be a functional unit divided in different compartments (busbar compartment, cable compartment, switch compartment).
- Details of gas insulated switchgear having each component (circuit-breaker, busbar, etc) separately sealed in an enclosure.

### References relevant to classification in this group

*This subclass/group does not cover:*

|  |                             |
|--|-----------------------------|
| Locating faults  | <a href="#">G01R 31/08</a>  |
| Protective circuit arrangements having fault detecting means | <a href="#">H01H 1/0015</a> |
| Lead-in/through insulators                                   | <a href="#">H01B 17/26</a>  |

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

|                         |                             |
|-------------------------|-----------------------------|
| Pressure relief devices | <a href="#">H01H 33/575</a> |
|-------------------------|-----------------------------|

### **H02B 13/025**

**Safety arrangements, e.g. in case of excessive pressure or fire due to electrical defect (for buildings in general E04B1/94; devices for opening or closing safety wings E05F1/00; emergency protective circuit arrangements for distribution gear, e.g. bus-bar systems, or for switching devices H02H7/22)**

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

|   |                            |
|---|----------------------------|
| Safety arrangements for buildings in general  | <a href="#">E04B 1/94</a>  |
| Devices for opening or closing safety wings   | <a href="#">E05F 1/00</a>  |
| Emergency protective circuit arrangements for distribution gear, e.g. bus-bar systems, or for switching devices | <a href="#">H02H 7/22)</a> |

### **H02B 13/045**

**Details of casing, e.g. gas tightness (gas reservoirs for**

switches H01H33/56)

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|                             |                            |
|-----------------------------|----------------------------|
| Gas reservoirs for switches | <a href="#">H01H 33/56</a> |
|-----------------------------|----------------------------|

## H02B 13/055

Features relating to the gas (selection of fluids for switches H01H33/22)

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|                                  |                            |
|----------------------------------|----------------------------|
| Selection of fluids for switches | <a href="#">H01H 33/22</a> |
|----------------------------------|----------------------------|

## H02B 13/065

Means for detecting or reacting to mechanical or electrical defects (for switches H01H9/50, H01H33/26, H01H33/53)

### Informative references

Attention is drawn to the following places, which may be of interest for search:

|  |   |
|--|---|
| Means for detecting or reacting to mechanical or electrical defects for switches | <a href="#">H01H 9/50</a> , <a href="#">H01H 33/26</a> , <a href="#">H01H 33/53</a> |
|--|---|

## H02B 15/00

Supervisory desks or panels for centralised control or display (desks in general A47B )

### Definition statement

*This subclass/group covers:*

Display/Control panels or desks for centralised control or display of switching arrangements for the supply or distribution of electric power.

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|                  |                      |
|------------------|----------------------|
| Desks in general | <a href="#">A47B</a> |
|------------------|----------------------|