



**Switch-disconnector, 4 pole, 2000 A, without protection, IEC,  
Withdrawable**

**Part no.** INX40N4-20W-1  
**Article no.** 184100

**Delivery program**

|  |             |    |  |
|--|-------------|----|--|
| Product range  |             |    | Air circuit-breakers/switch-disconnectors                  |
| Product range  |             |    | Open switch-disconnectors                                  |
| Current Range  |             |    | Up to 4000 A   |
| Protective function  |             |    | without protection   |
| Installation type  |             |    | Withdrawable   |
|  |             |    | Cassette must be separately ordered.                       |
| Construction size  |             |    | INX40  |
| Release system   |             |    | without releases   |
| Standard/Approval  |             |    | IEC  |
| Number of poles  |             |    | 4 pole   |
| Degree of Protection                                       |             |    | IP31 with door seals, IP55 with protective cover           |
|  |             |    | optionally fittable by user with comprehensive accessories |
| Rated current = rated uninterrupted current                | $I_n = I_u$ | A  | 2000   |
| Bemessungskurzschlusseinschaltvermögen bis 440V/690V 42/42 | $I_{cm}$    | kA | 187  |
| Bemessungskurzzeitstromfestigkeit t = 1 s                  | $I_{cw}$    | kA | 85   |
| Bemessungskurzzeitstromfestigkeit t = 3 s                  | $I_{cw}$    | kA | 66   |

**Technical data**

**General**

|                              |          |    |  |
|------------------------------|----------|----|--|
| Standards                    |          |    | IEC/EN 60947                                     |
| Ambient temperature          |          |    |  |
| Storage                      | $\theta$ | °C | -40 - +70  |
| Ambient temperature          |          | °C | -25 - +70  |
| Mounting position            |          |    |  |
| Utilization category         |          |    | B  |
| Degree of Protection         |          |    | IP31 with door seals, IP55 with protective cover |
| Direction of incoming supply |          |    | as required                                      |

**Main conducting paths**

|   |             |      |       |
|---|-------------|------|-------|
| Rated current = rated uninterrupted current | $I_n = I_u$ | A    | 2000  |
| Rated uninterrupted current at 50 °C        | $I_u$       | A    | 2000  |
| Rated uninterrupted current at 60 °C        | $I_u$       | A    | 2000  |
| Rated uninterrupted current at 70 °C        | $I_u$       | A    | 2000  |
| Rated impulse withstand voltage             | $U_{imp}$   | V AC | 12000 |
| Rated operational voltage                   | $U_e$       | V AC | 690   |
| Overvoltage category/pollution degree       |             |      | III/3 |
| Rated insulation voltage                    | $U_i$       | V    | 1000  |

**Switching capacity**

|   |          |    |     |
|---|----------|----|-----|
| Rated short-circuit making capacity         | $I_{cm}$ |    |     |
| up to 440 V 50/60 Hz                        | $I_{cm}$ | kA | 187 |
| up to 690 V 50/60 Hz                        | $I_{cm}$ | kA | 166 |
| Rated short-time withstand current 50/60 Hz |          |    |     |
| Rated short-time withstand current (t=1s)   | $I_{cw}$ | kA | 85  |
| t = 3 s                                     | $I_{cw}$ | kA | 66  |

|  |                           |    |        |
|--|---------------------------|----|--------|
| Operating times                              |                           |    |        |
| Closing delay via spring release             |                           | ms | 30     |
| Total opening delay via shunt release        |                           | ms | 35     |
|  |                           |    |        |
| Total opening delay via undervoltage release |                           | ms | 40     |
| Lifespan                                     |                           |    |        |
| Lifespan, mechanical                         | Switching cycles (ON/OFF) |    | 10000  |
| Lifespan, mechanical with maintenance        | Switching cycles (ON/OFF) |    | 20000. |
| Lifespan, electrical                         | Switching cycles (ON/OFF) |    | 8000   |
| Lifespan, electrical with maintenance        | Switching cycles (ON/OFF) |    | 16000. |
| Maximum operating frequency                  |                           |    |        |
| Maximum operating frequency                  | Operations/h              |    | 60     |
| Heat dissipation at rated current $I_n$      |                           |    |        |
| Withdrawable units (switch with cassette)    |                           | W  | 220    |

## Weight

|              |  |    |    |
|--------------|--|----|----|
| Withdrawable |  |    |    |
| 4-pole       |  | kg | 82 |
| Cassette     |  |    |    |
| 4 pole       |  | kg | 35 |

## Terminal capacities

|  |  |    |             |
|--|--|----|-------------|
| Copper bar   |  |    |             |
| Withdrawable units   |  |    |             |
| Black  |  | mm | 2 x 80 x 10 |
| <p>These are values used in separate switchgear. The actual values will depend on the temperature around the circuit-breaker, which is influenced by the ambient temperature, the degree of protection (IP), the mounting height, the partitions, and any external ventilation. Depending on the specific switchgear design, this may result in derating, which can then be compensated for by increasing the cross-sectional area. Temperature rise tests in the specific switchgear can provide specific and detailed information.</p> |  |    |             |

## Design verification as per IEC/EN 61439

|  |           |    |  |
|--|-----------|----|--|
| Technical data for design verification   |           |    |  |
| Rated operational current for specified heat dissipation   | $I_n$     | A  | 2000   |
| Equipment heat dissipation, current-dependent  | $P_{vid}$ | W  | 220  |
| Operating ambient temperature min.   |           | °C | -25  |
| Operating ambient temperature max.   |           | °C | 70   |
| IEC/EN 61439 design verification   |           |    |  |
| 10.2 Strength of materials and parts   |           |    |  |
| 10.2.2 Corrosion resistance  |           |    |  |
| 10.2.3.1 Verification of thermal stability of enclosures   |           |    | Meets the product standard's requirements.                         |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |           |    | Meets the product standard's requirements.                         |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |           |    | Meets the product standard's requirements.                         |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |           |    | Meets the product standard's requirements.                         |
| 10.2.5 Lifting   |           |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact   |           |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.7 Inscriptions  |           |    | Meets the product standard's requirements.                         |
| 10.3 Degree of protection of ASSEMBLIES  |           |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.4 Clearances and creepage distances   |           |    | Meets the product standard's requirements.                         |
| 10.5 Protection against electric shock   |           |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.6 Incorporation of switching devices and components   |           |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.7 Internal electrical circuits and connections  |           |    | Is the panel builder's responsibility.                             |
| 10.8 Connections for external conductors   |           |    | Is the panel builder's responsibility.                             |

|  |  |  |  |
|--|--|--|--|
| 10.9 Insulation properties                               |  |  |  |
| 10.9.2 Power-frequency electric strength                 |  |  | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage                         |  |  | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material |  |  | Is the panel builder's responsibility.   |
| 10.10 Temperature rise                                   |  |  | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                               |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility                      |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function                                |  |  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 6.0

|   |    |  |   |
|---|----|--|---|
| Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)   |    |  |   |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ec@ss8.1-27-37-14-03 [AKF060010]) |    |  |   |
| Version as main switch  |    |  | Yes   |
| Version as maintenance-/service switch  |    |  | No  |
| Version as safety switch  |    |  | No  |
| Version as emergency stop installation  |    |  | No  |
| Version as reversing switch   |    |  | No  |
| Max. rated operation voltage Ue AC  | V  |  | 690   |
| Rated operating voltage   | V  |  | 690 - 690   |
| Rated permanent current Iu  | A  |  | 2000  |
| Rated permanent current at AC-21, 400 V   | A  |  | 0   |
| Rated operation power at AC-3, 400 V  | kW |  | 0   |
| Rated short-time withstand current Icw  | kA |  | 85  |
| Rated operation power at AC-23, 400 V   | kW |  | 0   |
| Switching power at 400 V  | kW |  | 0   |
| Conditioned rated short-circuit current Iq  | kA |  | 187   |
| Number of poles   |    |  | 4   |
| Number of auxiliary contacts as normally closed contact   |    |  | 0   |
| Number of auxiliary contacts as normally open contact   |    |  | 0   |
| Number of auxiliary contacts as change-over contact   |    |  | 2   |
| Motor drive optional  |    |  | Yes   |
| Motor drive integrated  |    |  | No  |
| Voltage release optional  |    |  | Yes   |
| Device construction   |    |  | Built-in device slide-in technique (withdrawable) |
| Suitable for ground mounting  |    |  | Yes   |
| Suitable for front mounting 4-hole  |    |  | No  |
| Suitable for front mounting center  |    |  | No  |
| Suitable for distribution board installation  |    |  | Yes   |
| Suitable for intermediate mounting  |    |  | No  |
| Colour control element  |    |  | Green   |
| Type of control element   |    |  | Push button                                       |
| Interlockable   |    |  | Yes   |
| Type of electrical connection of main circuit   |    |  | Rail connection                                   |
| Degree of protection (IP), front side   |    |  | IP31  |





- ① Door
- ② Contact surface flange terminal