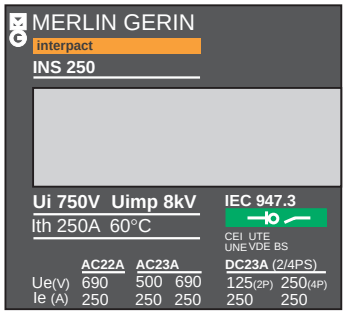


Ith : *conventional thermal current*
Ui : *rated insulation voltage*
Uimp : *rated impulse-withstand voltage*
Ue : *rated operational voltage*
Ie : *rated operational current*
suitable for isolation

Conformity with standards

Interpact switch-disconnectors and auxiliaries comply with the following international recommendations:
- BS EN 60947-1: general rules.
- BS EN 60947-3: switches, disconnectors, switch-disconnectors, etc.
- BS EN 60947-5.1 and following: control-circuit devices and switching elements; automatic-control components.

In that these recommendations are applied in most countries, Interpact switch-disconnectors and auxiliaries comply with European (BS EN 60947-1, BS EN 60947-3, BS EN 60947-5-1) and the corresponding national standards:
- France NF
- Germany VDE
- United Kingdom BS
- Australia AS
- Italy CEI.

Interpact switch-disconnectors are suitable for the control of machine-tools in that they comply with French standard NF C 79-130 and with the recommendations issued by the CNOMO organisation.

Class II front face

This insulation is obtained by:
- Double insulation for the INS range
- Respecting the distances and insulation rules defined in standards BS EN 60661, BS EN 60947-1, EN 60364... For the INV range.

Tropicalisation

Interpact switch-disconnectors meet the tropicalisation T2 requirements as defined in the following standards:
- IEC 68-2-30: 95% relative humidity at 55°C (hot and humid climate conditions)
- IEC 68-2-11: salt mist.

Degree of pollution

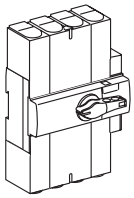
Interpact switch-disconnectors are certified for operation in pollution-degree III environments as defined by IEC standard 60947 (industrial environments).

Ambient temperature

- Interpact switch-disconnectors can be used at temperatures ranging from -25°C to 70°C. Above 60°C, always take into account the derating coefficients indicated in the documentation.
- wherever possible, the switch-disconnectors should be put into service at their normal ambient operating temperature, however this can be done at temperatures between -35°C and -25°C as long as this condition does not last for an extended period.
- In their original packing, Interpact switch-disconnectors may be stored at temperatures ranging from -50°C to +85°C.

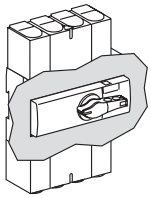
Degree of protection (as per standard BS EN 60529)

IP40



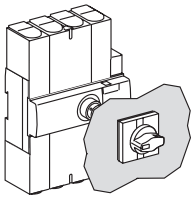
Loose switch-disconnector with terminal shields

IP40



Switch-disconnector in cabinet or enclosure (direct handle)

IP55



Switch-disconnector in cabinet or enclosure (extended handle)

Suitable for isolation with positive contact indication

Suitable for isolation with visible break

Suitable for isolation with positive contact indication

All Interpact switch-disconnectors are suitable for isolation as defined in BS EN 60947-3:

- The isolation position corresponds to the O (OFF) position.
- The operating handle cannot indicate the OFF position unless the contacts are actually open.
- Padlocking in the OFF position is not possible unless the contacts are actually open.

Installation of an extended handle does not alter the suitability for isolation. The isolation function is certified by tests guaranteeing:

- The mechanical reliability of the position-indication system.
- The absence of leakage currents.
- Overvoltage withstand capacity between upstream and downstream connections.

Suitable for isolation with visible break

The physical separation of the main contacts is directly visible through a transparent cover.
The Interpact INV range offers both positive contact indication and visible break indication.

INS250 emergency-off switch-disconnector

INV250 emergency-off switch-disconnector

Emergency-off switch disconnector

This switch-disconnector can be used as an emergency-off device. For this application, it must be easily visible, accessible and identifiable (see standards and rules concerning the safety of machines VDE 0660, VDE 0113, CNOMO, etc.).
For easy identification, the emergency-off switch-disconnector uses special colours stipulated by the standards and different from those of the standard version:

- Yellow for the front face of the device.
- Red for the handle.

The performance characteristics of Interpact emergency-off switch-disconnector are the same as those of the standard version.
The emergency-off switch-disconnectors are available in positive contact indication and visible-break versions.

Interpact INS80 switch-disconnector

Interpact INS160 switch-disconnector

Interpact INS160 emergency-off switch-disconnector

Interpact INS switch-disconnectors		
Number of poles		
Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and BS EN 60947-1 / 60947-3		
Conventional thermal current (A)	**Ith**	at 60 °C
Rated insulation level (V)	**Ui**	AC 50/60 Hz
Impulse-withstand voltage (kV)	**Uimp**	
Rated operational voltage (V)	**Ue**	AC 50/60 Hz
		DC
Rated operational current (A)	**Ie**	**AC 50/60 Hz**
		220-240 V
		380-415 V
		440-480 V **(1)**
		500 V
		660-690 V
		DC
		125 V (2P in series)
		250 V (4P in series)
Rated duties		uninterrupted duty
		intermittent duty
Short-circuit making capacity	**Icm (kA peak)**	min. (switch-disconnector alone)
		max. (with upstream protection circuit breaker)
Short-time withstand current	**Icw (A rms)**	1s
		3 s
		20 s
Suitability for isolation		
Endurance (category A) (CO cycles)		mechanical
		electrical AC AC22A 500 V
		AC22A 690 V
		AC23A 220-240 V
		AC23A 380-415 V
		AC23A 440 V
		AC23A 500 V
		AC23A 690 V
		electrical DC DC23A 250 V
Positive contact indication		
Degree of pollution		
Upstream protection		
See the “Technical details” section, page 72		
Installation and connection		
Fixed, front connection		symmetrical rail
		backplate
Indication and measurement auxiliaries		
Auxiliary contacts		
Voltage-presence indicator		
Current-transformer module		
Ammeter module		
Insulation-monitoring module		
Control auxiliaries		
Auxiliary releases and motor mechanism		
Direct and extended front / lateral rotary handle		
Locking by padlocks		
Manual source-changeover system		
Installation and connection accessories		
Bare cable connectors		
Terminal extensions and spreaders		
Terminal shields and shrouds		
Phase barriers		
Front-panel escutcheon		
Dimensions and weights		
Overall dimensions H x W x D (mm)		3/4 poles
Approximate weight (kg)		3 poles
		4 poles

(1) *Suitable for 480 V NEMA*

	INS40		INS63		INS80		INS100		INS125		INS160	
	3, 4		3, 4		3, 4		3, 4		3, 4		3, 4	
	40		63		80		100		125		160	
	690		690		690		750		750		750	
	8		8		8		8		8		8	
	500		500		500		690		690		690	
	250		250		250		250		250		250	
	AC 22 A	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**
	40	40	63	63	80	80	100	100	125	125	160	160
	40	40	63	63	80	72	100	100	125	125	160	160
	40	40	63	63	80	63	100	100	125	125	160	160
	40	32	63	40	80	40	100	100	125	125	160	160
	-	-	-	-	-	-	100	63	125	80	160	100
	DC 22 A	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**
	40	40	63	63	80	80	100	100	125	125	160	160
	40	40	63	63	80	80	100	100	125	125	160	160
	■		■		■		■		■		■	
	class 120 - 60%		class 120 - 60%		class 120 - 60%		class 120 - 60%		class 120 - 60%		class 120 - 60%	
	15		15		15		20		20		20	
	75		75		75		154		154		154	
	3000		3000		3000		5500		5500		5500	
	1730		1730		1730		3175		3175		3175	
	670		670		670		1230		1230		1230	
	■		■		■		■		■		■	
	20000		20000		20000		15000		15000		15000	
	1500		1500		1500		1500		1500		1500	
	-		-		-		1500		1500		1500	
	1500		1500		1500		1500		1500		1500	
	1500		1500		1500		1500		1500		1500	
	1500		1500		1500		1500		1500		1500	
	1500		1500		1500		1500		1500		1500	
	-		-		-		1500		1500		1500	
	1500		1500		1500		1500		1500		1500	
	yes		yes		yes		yes		yes		yes	
	III		III		III		III		III		III	
	■		■		■		■		■		■	
	■		■		■		■		■		■	
	■		■		■		■		■		■	
	-		-		-		-		-		-	
	-		-		-		-		-		-	
	-		-		-		-		-		-	
	-		-		-		-		-		-	
	-		-		-		-		-		-	
	■		■		■		■		■		■	
	■		■		■		■		■		■	
	-		-		-		-		-		-	
	■		■		■		■		■		■	
	-		-		-		-		-		-	
	■		■		■		■		■		■	
	-		-		-		■		■		■	
	-		-		-		-		-		-	
	90 x 81 x 62.5		90 x 81 x 62.5		90 x 81 x 62.5		135 x 100 x 62.5		135 x 100 x 62.5		135 x 100 x 62.5	
	0.5		0.5		0.5		0.8		0.8		0.8	
	0.6		0.6		0.6		0.9		0.9		0.9	

Interpact INS250 switch-disconnector

Interpact INS250 emergency-off switch-disconnector

Interpact INS switch-disconnectors			
Number of poles			
Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and BS EN 60947-1 / 60947-3			
Conventional thermal current (A)	**Ith**	at 60 °C	
Rated insulation level (V)	**Ui**	AC 50/60 Hz	
Impulse-withstand voltage (kV)	**Uimp**		
Rated operational voltage (V)	**Ue**	AC 50/60 Hz	
		DC	
Rated operational current (A)	**Ie**	**AC**	**50/60 Hz**
			220-240 V
			380-415 V
			440-480 V **(1)**
			500-525 V
			660-690 V
		DC	
			125 V (2P in series)
			250 V (4P in series)
Rated duties		uninterrupted duty	
		intermittent duty	
Short-circuit making capacity	**Icm**	min. (switch-disconnector alone)	
	(kA peak)	max. (with upstream protection circuit breaker)	
Short-time withstand current	**Icw**	1s	
	(A rms)	3 s	
		20 s	
		30 s	
Suitability for isolation			
Endurance (category A) (CO cycles)		mechanical	
		electrical AC	AC22A 500 V
			AC22A 690 V
			AC23A 440 V
			AC23A 500 V
			AC23A 690 V
		electrical DC	DC23A 250 V
Positive contact indication			
Degree of pollution			
Upstream protection			
See the “Technical details” section, page 74			
Installation and connection			
Fixed, front connection			
Fixed, rear connection			
Indication and measurement auxiliaries			
Auxiliary contacts			
Voltage-presence indicator			
Current-transformer module			
Ammeter module			
Insulation-monitoring module			
Control auxiliaries			
Auxiliary releases and motor mechanism			
Direct and extended front rotary handle			
Direct and extended lateral rotary handle			
Locking by padlocks			
Manual source-changeover system			
Installation and connection accessories			
Bare cable connectors			
Terminal extensions, spreaders and one-piece spreader			
Terminal shields and shrouds			
Phase barriers			
Front-panel escutcheon			
Dimensions and weights			
Overall dimensions H x W x D (mm)		3/4 poles	
Approximate weight (kg)		3 poles	
		4 poles	

(1) *Suitable for 480 V NEMA*
(2) *Mounted with adaptation kit for direct rotary handle*

	INS250-100		INS250-160		INS250 -200		INS250	
	3, 4		3, 4		3, 4		3, 4	
	100		160		200		250	
	750		750		750		750	
	8		8		8		8	
	690		690		690		690	
	250		250		250		250	
	AC 22 A	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**
	100	100	160	160	200	200	250	250
	100	100	160	160	200	200	250	250
	100	100	160	160	200	200	250	250
	100	100	160	160	200	200	250	250
	100	100	160	160	200	200	250	250
	DC 22 A	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**
	100	100	160	160	200	200	250	250
	100	100	160	160	200	200	250	250
	■		■		■		■	
	class 120 - 60%		class 120 - 60%		class 120 - 60%		class 120 - 60%	
	30		30		30		30	
	330		330		330		330	
	8500		8500		8500		8500	
	4900		4900		4900		4900	
	2200		2200		2200		2200	
	1800		1800		1800		1800	
	■		■		■		■	
	15000		15000		15000		15000	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	yes		yes		yes		yes	
	III		III		III		III	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■ **(2)**		■ **(2)**		■ **(2)**		■ **(2)**	
	-		-		-		-	
	-		-		-		-	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	140 x 136 x 86		140 x 136 x 86		140 x 136 x 86		140 x 136 x 86	
	2		2		2		2	
	2.2		2.2		2.2		2.2	

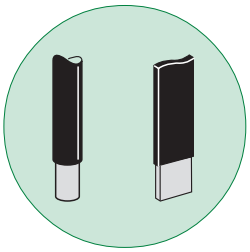
Interpact INS400 switch-disconnector

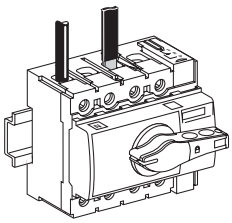
Interpact INS400 emergency-off switch-disconnector

Interpact INS switch-disconnectors			
Number of poles			
Electrical characteristics as defined by IEC 60947-1 / IEC 60947-3 and BS EN 60947-1 / 60947-3			
Conventional thermal current (A)	**Ith**	at 60 °C	
Rated insulation level (V)	**Ui**	AC 50/60 Hz	
Impulse-withstand voltage (kV)	**Uimp**		
Rated operational voltage (V)	**Ue**	AC 50/60 Hz	
		DC	
Rated operational current (A)	**Ie**	**AC**	**50/60 Hz**
			220-240 V
			380-415 V
			440-480 V **(1)**
			500-525 V
			660-690 V
		DC	
			125 V (2P in series)
			250 V (4P in series)
Rated duties		uninterrupted duty	
		intermittent duty	
Short-circuit making capacity	**Icm (kA peak)**	min. (switch-disconnector alone)	
		max. (with upstream protection circuit breaker)	
Short-time withstand current	**Icw (A rms)**	1s	
		3 s	
		20 s	
		30 s	
Suitability for isolation			
Endurance (category A) (CO cycles)		mechanical	
		electrical AC	AC22A 500 V
			AC22A 690 V
			AC23A 440 V
			AC23A 500 V
			AC23A 690 V
		electrical DC	DC23A 250 V
Positive contact indication			
Degree of pollution			
Upstream protection			
See the “Technical details” section, page 74			
Installation and connection			
Fixed, front connection			
Fixed, rear connection			
Indication and measurement auxiliaries			
Auxiliary contacts			
Voltage-presence indicator			
Current-transformer module			
Ammeter module			
Insulation-monitoring module			
Control auxiliaries			
Auxiliary releases and motor mechanism			
Direct and extended front rotary handle			
Direct and extended lateral rotary handle			
Locking by padlocks			
Manual source-changeover system			
Installation and connection accessories			
Bare cable connectors			
Terminal extensions, spreaders and one-piece spreader			
Terminal shields and shrouds			
Phase barriers			
Front-panel escutcheon			
Dimensions and weights			
Overall dimensions H x W x D (mm)		3/4 poles	
Approximate weight (kg)		3 poles	
		4 poles	

(1) Suitable for 480 V NEMA

	INS320		INS400		INS500		INS630	
	3, 4		3, 4		3, 4		3, 4	
	320		400		500		630	
	750		750		750		750	
	8		8		8		8	
	690		690		690		690	
	250		250		250		250	
	AC 22 A	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**	**AC 22 A**	**AC 23 A**
	320	320	400	400	500	500	630	500
	320	320	400	400	500	500	630	500
	320	320	400	400	500	500	630	500
	320	320	400	400	500	500	630	500
	320	320	400	400	500	500	630	500
	DC 22 A	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**	**DC 22 A**	**DC 23 A**
	320	320	400	400	500	500	630	630
	320	320	400	400	500	500	630	630
	■		■		■		■	
	class 120 - 60%		class 120 - 60%		class 120 - 60%		class 120 - 60%	
	50		50		50		50	
	330		330		330		330	
	20000		20000		20000		20000	
	11500		11500		11500		11500	
	4900		4900		4900		4900	
	4000		4000		4000		4000	
	■		■		■		■	
	10000		10000		10000		10000	
	1500		1500		1500		1500	
	1500		1500		1500		1000	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1500	
	1500		1500		1500		1000	
	yes		yes		yes		yes	
	III		III		III		III	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	-		-		-		-	
	-		-		-		-	
	■		■		■		■	
	-		-		-		-	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	■		■		■		■	
	185 x 205 x 120		185 x 205 x 120		185 x 205 x 120		185 x 205 x 120	
	4.6		4.6		4.6		4.6	
	4.9		4.9		4.9		4.9	



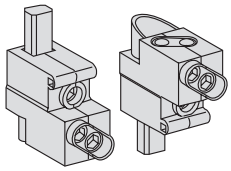


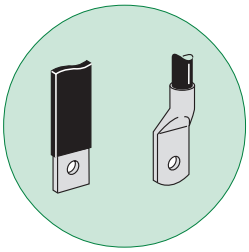
Interpact INS40 to INS80

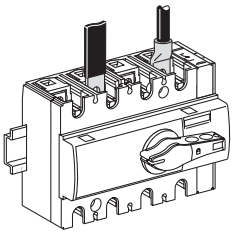
Interpact INS40 to INS80 switch-disconnectors are equipped as standard with connectors for bare copper or aluminium cables.

Distribution connector.
This connector screws directly into the switch-disconnector terminals for connection of three cables of the following types:

- 1 to 10 mm^2 flexible cables
- 1.5 to 16 mm^2 rigid cables
- With crimped or auto-crimping ferrules from 1.5 to 4 mm^2.



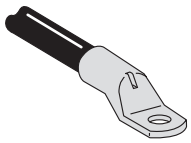




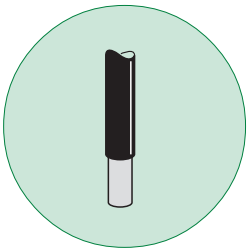
Interpact INS100 to INS160

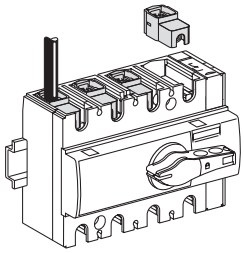
Connection of bars or cables with lugs
Interpact INS100 to INS160 switch-disconnectors are equipped as standard with terminals comprising nuts with M6 screws for direct connection of insulated bars or cables with lugs.

Lugs
The lugs for copper cables may be used for cables with cross-sectional areas up to 95 mm^2. Lugs are supplied with phase barriers and are compatible with the terminal shields.



Lug for copper cable

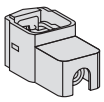




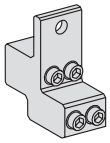
Connection of bare cables (Cu or Al)

- 1-cable connectors for Interpact INS100/125/160 snap directly onto the terminals.
- Distribution connectors are designed for four cables with a cross-section areas of 1.5 to 25 mm^2 rigid / 16 mm^2 flexible. They screw directly to the terminals.

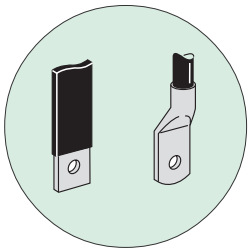
The phase barriers supplied with the distribution connectors may be replaced by long terminal shields.

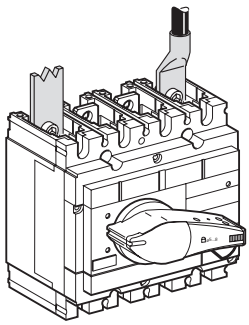


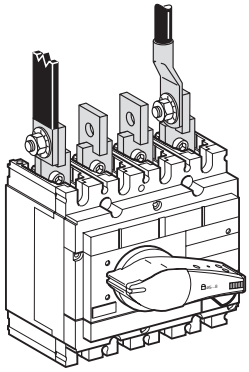
1-cable connector

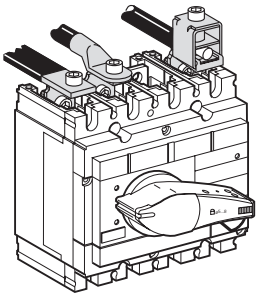


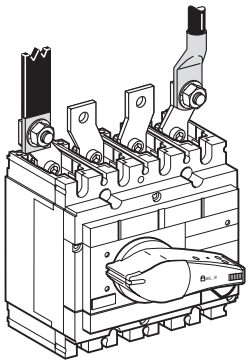
Distribution connector











Front connection of bars or cables with lugs

Interpact INS250 to INS630 and INV100 to INV630 switch-disconnectors are equipped as standard with terminals which receive snap-in nuts and screws (M8 for INS/INV up to 250, M10 from 320 upwards). For direct connection of insulated bars or cables with lugs. Terminal extensions (right-angle, edgewise, spreaders) are available to solve all connection requirements. 52.2 or 70mm spreaders are available for interpact INS/INV 630A switch disconnectors.

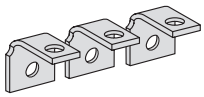
Lugs

Separate lugs are available for copper and aluminium cables. They are supplied complete with phase barriers and are compatible with the long terminal shields.

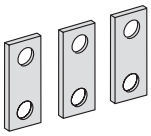
- ■ The crimp lugs for copper cables may be used for cables with the following cross-sectional areas:
- □ 120, 150 or 185 mm^2 (INS/INV up to 250).
- □ 240 or 300 mm^2 (INS/INV up to 630).
- ■ The crimp lugs for aluminium cables may be used for cables with the following cross-sectional areas:
- □ 150 or 185 mm^2 (INS/INV up to 250)
- □ 240 or 300 mm^2 (INS/INV up to 630).

Spreaders

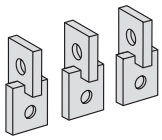
Spreaders increase the pitch of the terminals. They are not compatible with terminal shields. The one-piece spreader increases the pitch to correspond to that of the upstream device and provides protection against direct contact (see page 54).



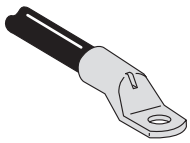
Right-angle terminal extensions



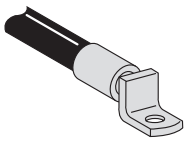
Straight terminal extensions for INS/INV250



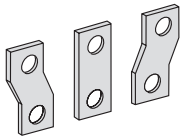
Edgewise terminal extensions for INS/INV320 to 630



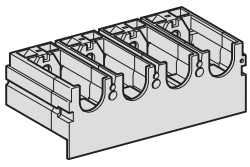
Lug for copper cables



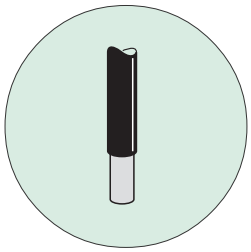
Lug for aluminium cables

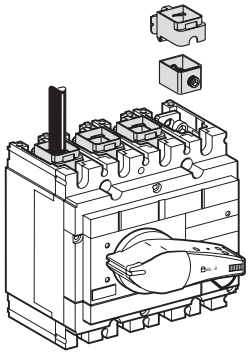


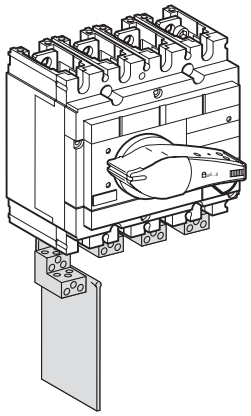
Spreaders



One-piece spreader







Front connection for bare cables

Bare-cable connectors for Interpact INS/INV switch-disconnectors may be used for both copper and aluminium cables.

1-cable connectors for Interpact INS250 and INV100 to 250

The connectors snap directly on to the device terminals or clip onto right-angle and straight terminal extensions as well as spreaders.

1-cable and 2-cable connectors for Interpact INS/INV320 to 630

The connectors are screwed to the device terminals or right-angle terminal extensions.

Distribution connectors for Interpact INS250 and INV100 to 250

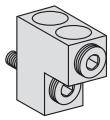
These connectors are screwed directly to the device terminals. Phase barriers are supplied with distribution connectors, but may be replaced by long terminal shields. Each connector can receive six cables with cross-sectional areas ranging from 1.5 to 35 mm^2 each.

Polybloc distribution block for Interpact INS250 and INV100 to 250

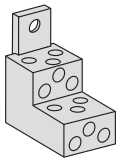
The Polybloc connects directly to the device terminals and is used to connect up to six or nine flexible or rigid cables with cross-sectional areas not exceeding 10 mm^2, to each pole via spring terminals without screws.

1-cable connector for INS250 and INV100-250

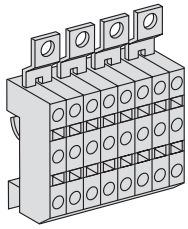
1-cable connector
for INS/INV320 to 630



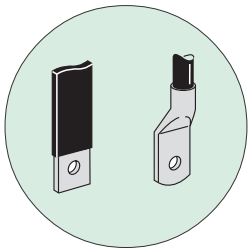
2-cable connector
for INS/INV320 to 630

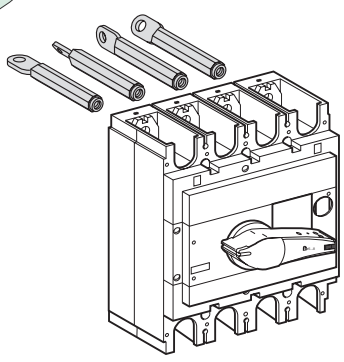


Distribution connector for INS250 and INV100 to 250



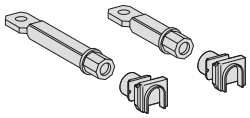
Polybloc distribution block for INS250 and INV100 to 250



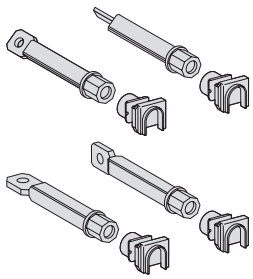


Rear connection

Rear connections for bars or cables are available in two lengths. Bars may be positioned flat, on edge or at 45° angles and are simply fitted to the device connection terminals. All combinations of rear connection lengths and positions are possible on any switch-disconnector. For the connection of cables without lugs, the 1-cable connectors for Interpact INS250 and INV100 to 250 may be simply clipped onto the rear connections.

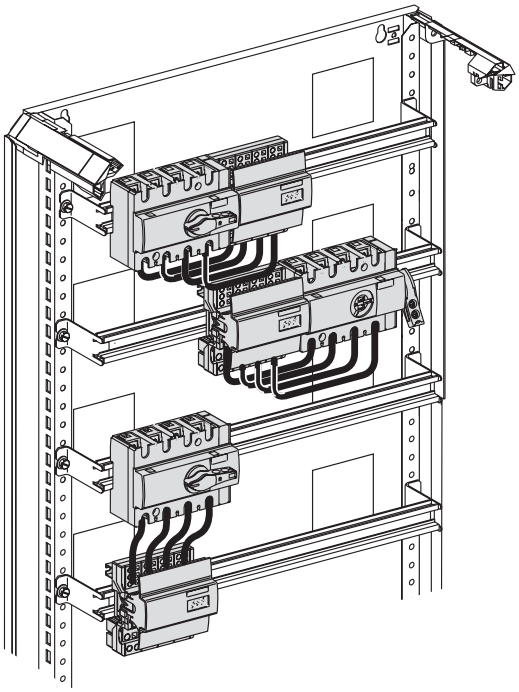


Two lengths

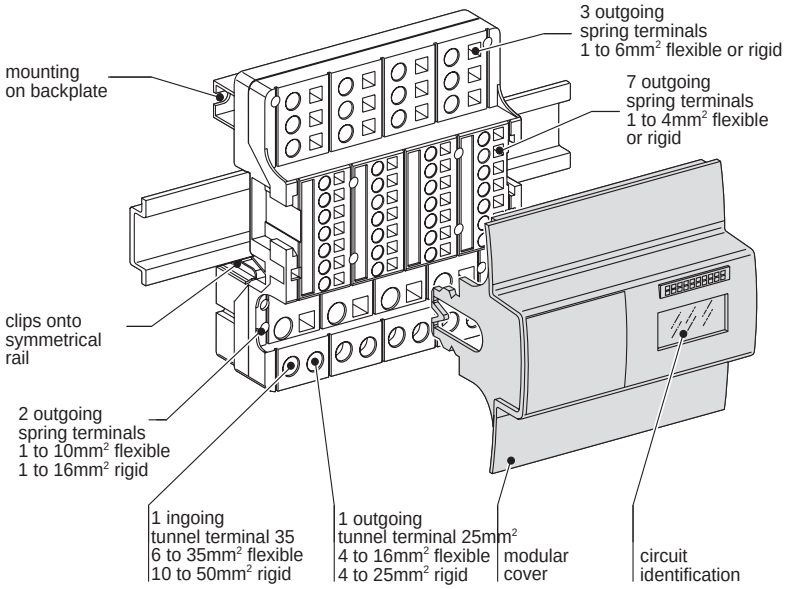


Four positions.

Distribloc 125 A



Distribloc



Distribloc is a four-pole distribution block offering:
- 13 outgoing terminals per phase (12 spring terminals and 1 tunnel terminal).
- 1 incoming tunnel terminal for 35 mm² flexible cable (50 mm² rigid).

Distribloc exists in two versions:
- ☐ Distribloc 125, for switch-disconnectors rated up to 125 A
- ☐ Distribloc 160, supplied with prefabricated connections, for direct connection to switch-disconnectors INS100 to INS160.

Distribloc is supplied with a modular cover that fulfils a number of functions:
- Circuit identification: a protected label identifies the various circuits.
- Aesthetics: the cover has the same design as the associated Interpact INS switch-disconnector.
- User information: all required information is indicated on the cover.

Distribloc can be installed:
- On a symmetrical rail or a backplate
- To the left, the right or under the switch-disconnector, depending on the desired layout of the switchboard. Installation to the left is particularly useful when the INS switch-disconnector is equipped with a lateral handle.

Electrical characteristics
- Rated short-time withstand current (Icw) = 4.5 kA rms / 1 second.
- Rated peak withstand current (Ipk) = 20 kA peak.
- Rated insulation voltage (Ui) = 690 V AC.

One-piece spreader

Connection of large cables may require an increase in the distance between the switch-disconnector terminals. The one-piece spreader is an accessory that can also be fitted on Compact NS circuit breakers and offers the following features:

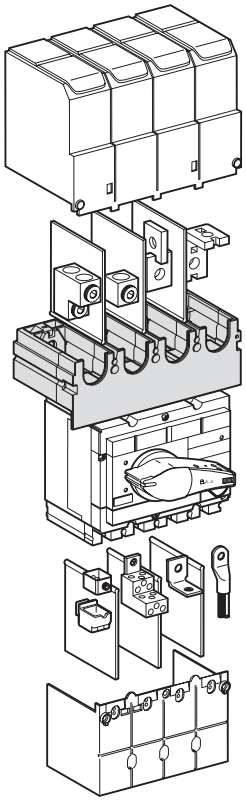
- Increases the pitch of the switch-disconnector terminals to correspond to that of the upstream device.
- Compatible with all the connection and insulation accessories available for the upstream device (connectors, terminal extensions, etc).
- Increased isolation distances for oversized connectors.

	INS250 INV100 to 250	INS320 to 630 INV320 to 630
Pitch **without** spreaders (mm)	35	45
Pitch **with** standard spreaders (mm)	45	52.5 or 70
Pitch **with** one-piece spreader (mm)	45	70

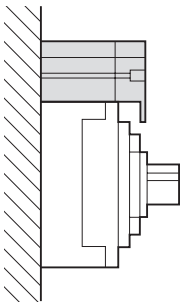
Mounting

When equipped with a one-piece spreader, INS and INV switch-disconnectors may be installed either rear aligned, or front aligned with an alignment base.

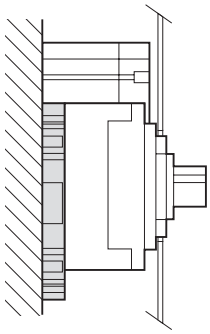
- Devices with different frame sizes can thus be aligned in the switchboard.
- The same mounting plate can be used for all devices (including Compact NS circuit breakers).



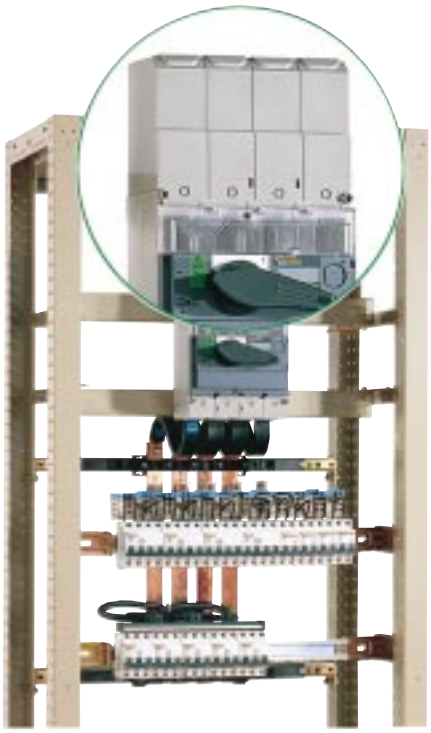
Connection and insulation accessories are identical to those for Compact NS



Rear alignment.



Front alignment with an alignment base.



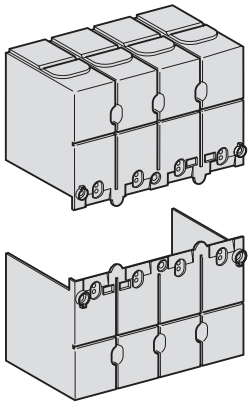
Terminal shields for INS and INV switch-disconnectors
Lead-sealable insulation accessories used to protect against direct contact with power circuits.
- Degree of protection IP 40.
- supplied with lead-sealing accessories.

Phase barriers for INS/INV100 to 630
- Safety barriers providing maximum insulation between the phases of the power connection.
- Easy installation by snapping into the case
- May be combined with all other connection accessories, except for terminal shields and terminal shrouds.

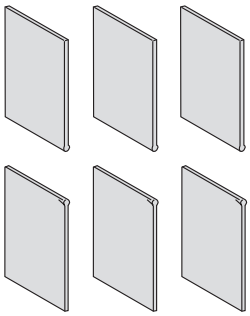
Phase barriers for IN1000 to 2500
These devices can be equipped with phase barriers.

Terminal shrouds for INS40 to 160
These insulation accessories are used for protection against direct contact with live connection screws. It is also possible to attach an insulating plate (not supplied) to the shrouds to avoid any contact with the power conductors.

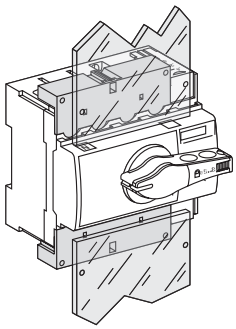
Spare viewport for Interpact INV switch-disconnectors
Viewports are darkened by the electrical arc. A new viewport may be installed to maintain the visible-break function.



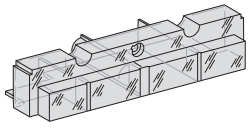
Terminal shields for Interpact INS and INV



Phase barriers for Interpact INS and INV.



Terminal shrouds for Interpact INS40 to 160
(with insulating plate to avoid contact with the conductors).



Spare viewport for Interpact INV.

Auxiliary contact for Interpact INS and INV.

Interpact INS and INV

One or two common-point changeover contacts can be used for remote indication of switch-disconnector status, electrical interlocking, relays, etc.

Functions

Each contact may be used for the following functions:

- ■ OF (open/closed): indicates the position of the switch-disconnector poles.
- ■ CAM (early-make or early-break function): indicates the position of the handle.

Used in particular for:

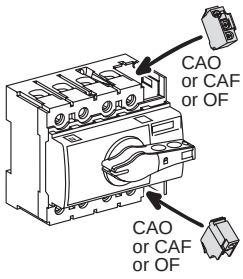
- ☐ CAO early-break switch (auxiliary contacts open before the main contacts).
- ☐ CAF early-make switch (auxiliary contacts close before the main contacts).
- ■ switching of very small loads. A “low-level” version of the auxiliary switches exists for switching very small loads (for example, to control a PLC or electronic circuits).

Standards

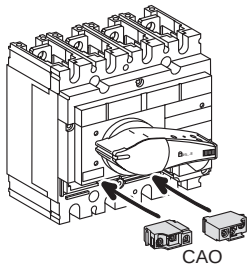
The auxiliary switches comply with international standard IEC 60947-5.1.

Installation

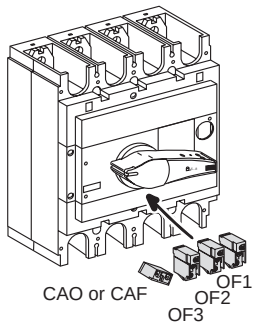
Auxilliary contacts snap into place in the space provided behind the auxilliary covers.



Interpact INS40 to 160.



Interpact INS250
and INV100 to 250



Interpact INS/INV 320 to 630

Electrical characteristics of auxiliary contacts for Interpact INS and INV

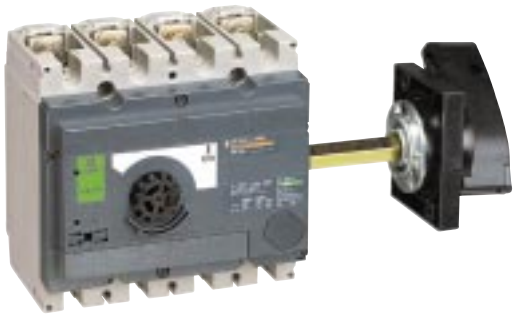
		Standard				Low level			
Rated thermal current (A)		6				5			
Minimum load		10 mA at 24 V				1 mA at 4 V			
		AC		**DC**		**AC**		**DC**	
Utilisation category (IEC 60947-5-1)		AC12	AC15	DC12	DC14	AC12	AC15	DC12	DC14
Operational current (A)	24 V	6	6	2.5	1	5	3	5	1
	48 V	6	6	2.5	0.2	5	3	2.5	0.2
	110 V	6	5	0.8	0.05	5	2.5	0.8	0.05
	220/240 V	6	4			5	2		
	250 V			0.3	0.03			0.3	0.03
	380/415 V	6	3			5	1.5		
	440 V	6	3			5	1.5		
	660/690 V	6	0.1						

Interpact IN1000 to IN2500

Possible combinations

Interpact	2 OF block	CAM block
IN1000, IN1600	1	+1
IN2500	1	+1

Interpact INS160 with lateral direct rotary handle



Interpact INS250 with lateral extended rotary handle

Interpact INS630 with front extended rotary handle

Interpact INS250 emergency-off version with front direct rotary handle

	INS40 to 160	INS250 INV100 to 250	INS320 to 630 INV320 to 630	IN1000 to 2500
Standard rotary handle				
Front direct	Standard	Standard	Standard	Standard
Lateral direct	Standard	With conversion	No	No
Front extended	Optional	Optional	Optional	Optional
Lateral extended	Optional **(1) (2)**	Optional	No	No
Red and yellow rotary handle for emergency-off switch-disconnectors				
Front direct	Standard	Standard	Standard	No
Lateral direct	Standard	With conversion	No	No
Front extended	Optional	Optional	Optional	No
Lateral extended	Optional **(1) (2)**	Optional **(1)**	No	No

(1) *The basic switch-disconnector must be the emergency-off (red and yellow) version*
(2) *Two models for universal enclosures and for Prisma G enclosures.*

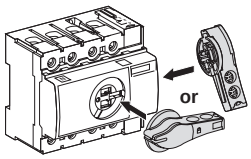
Interpact INS and INV

Direct rotary handle

- Degree of protection IP 40
- The switch-disconnector may be locked in the OFF position by one to three padlocks, hasp diameter 5 to 8 mm (not supplied).

Models

- Standard with black handle
- Emergency-off version with red handle and yellow front for machine-tool control.



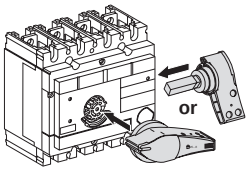
Direct rotary handle on INS40 to 160

Extended rotary handle

Enables front or side operation with the enclosure door in the closed position.

Operation

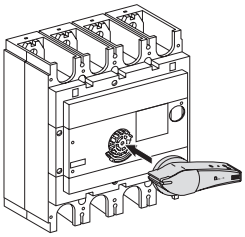
- Suitability for isolation is maintained.
- Door opening is prevented when the switch-disconnector is in ON position (for front handle only).
- The switch-disconnector may be locked in the OFF position by one to three padlocks, hasp diameter 5 to 8 mm (not supplied). Locking prevents opening of the switchboard door (for front handle only).



Direct rotary handle on INS250 and INV100 to 250

Models

- Standard: with black handle.
- Emergency-off: with red handle and yellow front for machine-tool control.



Direct rotary handle on INS/INV320 to 630

Installation

The extended rotary handle is made up of:

- An assembly that replaces the direct rotary handle on the Interpact switch-disconnector (secured by screws).
- An assembly (handle and front plate) to be mounted on the door or the side of the switchboard. This assembly is always secured in the same position, whether the switch-disconnector is installed vertically or horizontally.
- An adjustable extension shaft (see page 60).

Interpact IN1000 to IN2500

Extended rotary handle (IP 55)

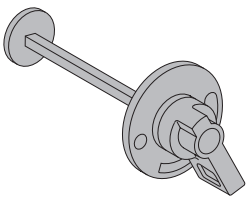
The extended handle is obtained by adding a set of optional accessories to the standard direct rotary handle (front or lateral).

The accessories include:

- A front plate
- An extension shaft.

The extended rotary handle can be optionally fitted with:

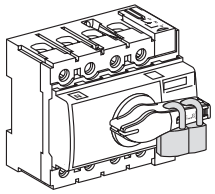
- A door interlock that prevents door opening when the handle is not in the OFF position.



Padlocked Interpact INS250 switch-disconnector

Padlocking

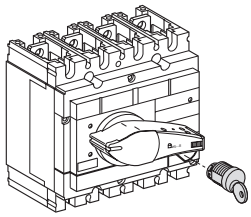
Interpact INS and INV switch-disconnectors may be locked in the OFF position. The handle is designed for locking by up to three padlocks (not supplied).
Locking in the OFF position guarantees isolation as defined by the IEC 60947-3 standard. The handle may also be lead-sealed in the OFF position.



Device with padlocks

Keylocking

Interpact INS250 to 630, INV100 to 630 and IN1000 to IN2500 switch-disconnectors may be locked in the OFF position using a keylock (optional). The key may not be removed when the switch-disconnector is in the ON position.
Keylocks can also be fitted on switch-disconnectors equipped with extended rotary handles.

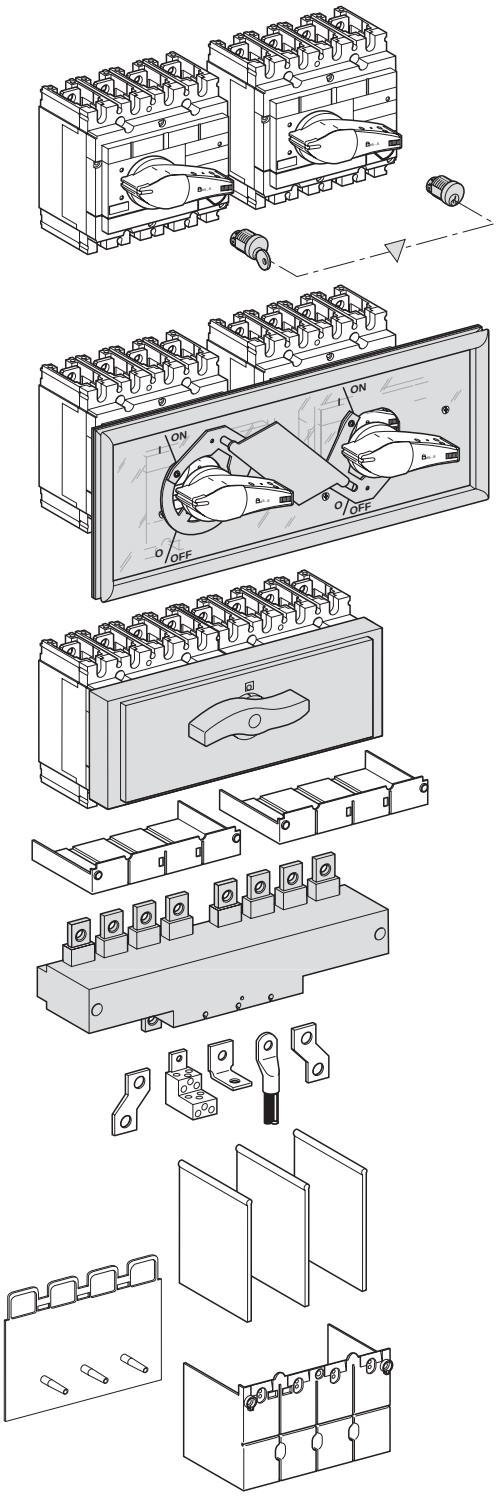


Device with keylock

Type of locking		Type of rotary handle			
		Front direct	Front extended	Lateral direct	Lateral extended
Locking by 3 padlocks	ON (I)	■ (1)	■ (1)	■ (1)	■ (1)
	OFF (O)	■	■	■	■
Locking by Ronis or Profalux keylock	ON (I)	■ (1)	■ (1)	■ (1)	■ (1)
	OFF (O)	■	■	■	■
Door locking	ON (I)		■		
Door lock defeat	ON (I)		■ (2)		
Door locking, device padlocked	OFF (O)		■		

(1) By simple modification of the standard rotary handle.

Mains/standby changeover systems are essential for continuity of service and energy management.
They switch between:
- A mains source (N) which supplies the installation under normal conditions.
- A standby source (R) which can be another feeder or an engine-generator set.

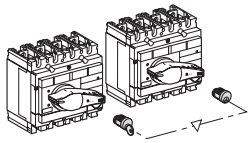


A mains/standby changeover system is made up of two switch-disconnectors that are mechanically interlocked. The mechanism prevents the simultaneous connection (even transient) of both supplies. Switching from one supply to another can be achieved by:
- A keylock-type interlocking system.
- A mechanical interlocking system.
- A complete mains/standby changeover assembly.

Change-over system	INS40...160	INS250 INV100...250	INS320...630 INV320...630	IN1000...2500
Keylock		■	■	■
Mechanical	■	■	■	
Complete assembly		■	■	

Interlocking with keylocks

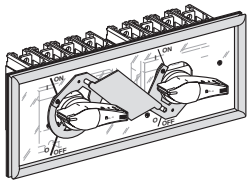
The two Interpact switch-disconnectors are each fitted with a standard keylock, but only one key is supplied for the two devices. This solution enables two distant switch-disconnectors to be interlocked.



Interlocking with keylocks

Mechanical interlocking

A mechanism connects the handles of two Interpact switch-disconnectors equipped with direct handles. The mechanism prevents both switch-disconnectors from being closed at the same time, but does allow opening of both.

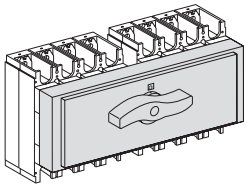


Mechanical interlocking

Complete mains/standby changeover assembly

These assemblies provide an easy way to implement source changeover functions with:
- A single 3-position rotary handle that controls the two switch-disconnectors (Normal source ON, OFF, standby ON).

A complete mains/standby changeover assembly can be ordered with a single catalogue number.

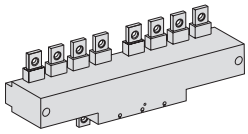


Complete source changeover assembly

Downstream coupling accessory

This accessory is used to couple two switch-disconnectors of the same size.
- For Interpact INS250 and INV100 to 250, the pitch between outgoing terminals is 35 mm.
- For Interpact INS/INV320 to 630, the pitch between outgoing terminals is 52.5 mm.

The coupling accessory can be fitted with the same connection and insulation accessories as the switch-disconnectors.



Downstream coupling accessory

Ammeter module

Ammeter module

For Interpact INS250 to 630 and INV100 to 630.

Function

Measures and displays the current of each phase (phase selection by a three-position switch on the front) on a dial-type ammeter.

Installation

- Connects directly to the downstream terminals of the switch-disconnector (except on a INS250 with a direct handle).
- The ammeter clips into the module housing in any of four 90° positions, i.e. the switch-disconnector may be installed horizontally or vertically
- Degree of protection IP40.
- Class II insulation between front and power circuits.

Electrical characteristics

Accuracy class 4.5.

Current-transformer module

Current-transformer module

For Interpact INS250 to 630 and INV100 to 630.

Function

Measure phase currents for display by an ammeter or a Digipact IM or PM module (not supplied, see the corresponding catalogue).

Installation

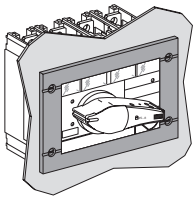
- Connects directly to the downstream terminals of the switch-disconnector.
- Degree of protection IP40.
- Class II insulation between front and power circuits.
- Connection via six built-in terminals for cables with a cross-sectional area of 2.5 mm^2.

Electrical characteristics

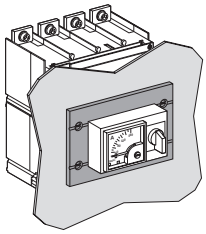
- Current transformer with 5 A secondary winding
- Accuracy class 3 for the following values of consumed output power:
  - ☐ 100 A rating - 1.6 VA.
  - ☐ 150 A rating - 3 VA.
  - ☐ 250 A rating - 5 VA.
  - ☐ 400/630 A rating - 8 VA.

Front-panel escutcheons

Escutcheons for switch-disconnectors and ammeter modules
Mounted on switchboard panel from the front using four screws.



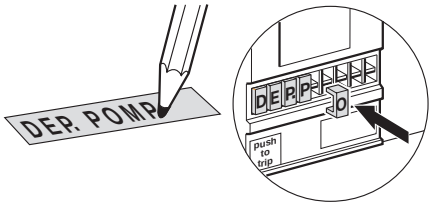
Escutcheon for switch-disconnectors



Escutcheon for ammeter modules

Identification labels

Interpact INS40 to 160 switch-disconnectors may receive Telemecanique prefabricated labels, catalogue number AB1- (eight characters). Interpact INS250 to 630 and INV100 to 630 switch-disconnectors are supplied as standard with a clip-on label for handwritten indications.
These devices also come with a nameplate into which a label can be inserted.



Individual enclosures

Interpact INS and INV switch-disconnectors equipped with a front handle may be installed in individual enclosures.
All fixed, front connections are possible, except right-angle and edgewise terminal extensions. Spreaders may be installed in the enclosures intended for Interpact INS250 to 630 and INV100 to 630 switch-disconnectors.

Heavy-duty metal individual enclosure for Interpact INS (IP547)

- Metal enclosure.
- Door with keylock and cut-out for switch-disconnector rotary handle.
- Extended rotary front handle.
- Device mounting plate.
- Removable plate (without holes) for cable entry through bottom.

Heavy-duty insulating individual enclosure for Interpact INS and INV (IP557)

- Metal enclosure.
- Transparent cover, screwed, lead sealable, with cut-out for switch-disconnector rotary handle.
- Extended rotary front handle.
- Device mounting plate.
- Removable plates (without holes) for cable entry through bottom and/or top.

Dimensions

Metal enclosures	W x H x D
Interpact INS40 to 160	300 x 200 x 150
Interpact INS250	300 x 400 x 200
Interpact INS320 to 630	400 x 600 x 200

Insulating enclosures	W x H x D
Interpact INS40 to 160	270 x 180 x 185
Interpact INS250 Interpact INV100 to 250	270 x 360 x 235
Interpact INS320 to 630 Interpact INV320 to 630	360 x 720 x 235