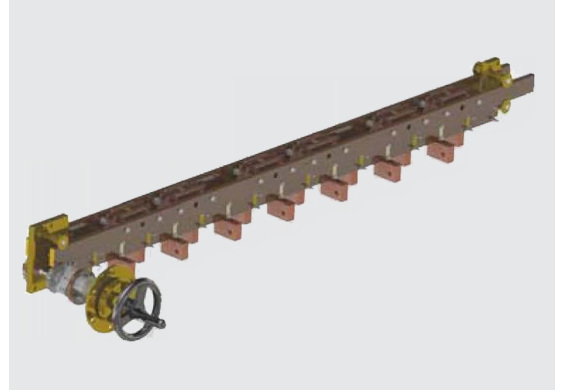


Tap Changer Type KHF IV

Specification, Assembly and Materials



Descriptions	Remarks
General Specifications	<ul style="list-style-type: none"> • available in one, two or three phase applications • multi layer types upon request • shaft length available in variable sizes • connection diagrams (page 4) can be applied in any variation to all types • bolted on the supports • welded under transformer cover and allow strong construction

Materials

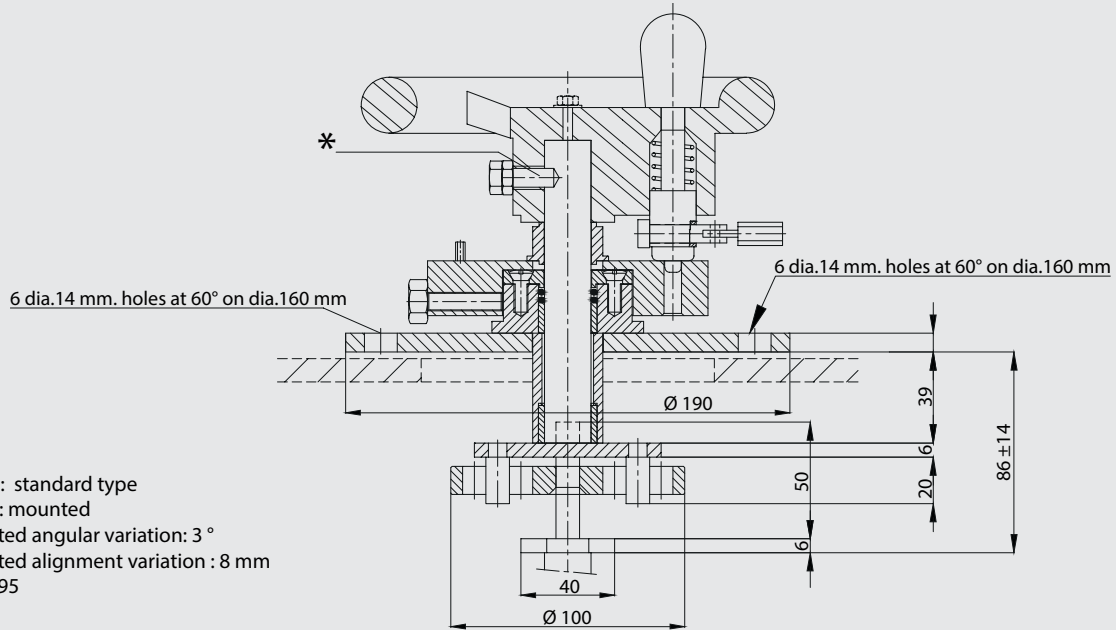
Steel Parts	<ul style="list-style-type: none"> • available in stainless or mild steel • mild steel parts are cadmium or zinc plated 	galvanizing upon request
Aluminium Parts	GAISI12(Cu)	
Brass Parts	CuZn40Pb2 (CW617N) / F34 DIN 17 673	
Copper Parts	E - Cu F25 DIN 40 500	
Insulator Parts	Paper phenol - plastic resin based laminates, HP 2061.5 class of DIN 7735	
Upon Request	<ul style="list-style-type: none"> • the aluminum parts can be protected by anodic oxidation • the mild steel parts can be supplied in stainless steel • the brass and copper parts can be tin, silver or cadmium plated 	
Current	up to 1250 A	
Voltage Class	B.I.L (other B. I. L. values are available upon customer request)	
20 kV / 30 kV	125 kV / 170 kV	

Operating Instructions

It is necessary to turn the control head to switch from one position to another. A notch is provided to mark each position precisely. For each operation, the notch must first be released by pulling the padlockable pul rod. After being turned to the desired position, the device locks into the respective notch due to a spring. The numbering of the positions is engraved on the repeater disc of the control head.

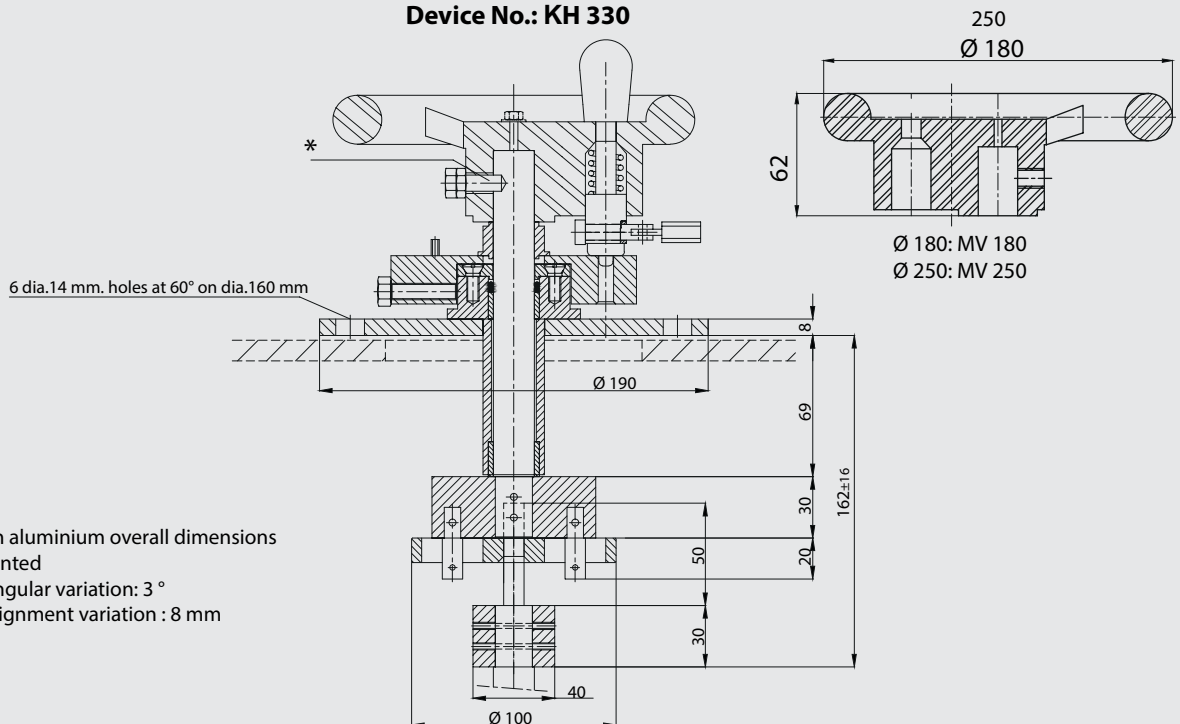
Type KHF IV Threephase Tap Changer Control Devices

Device No.: KH 320



Plug in: standard type
Flange: mounted
Permitted angular variation: 3 °
Permitted alignment variation : 8 mm
L min: 95

Device No.: KH 330



Plug in: with aluminium overall dimensions
Flange: mounted
Permitted angular variation: 3 °
Permitted alignment variation : 8 mm
L min: 170

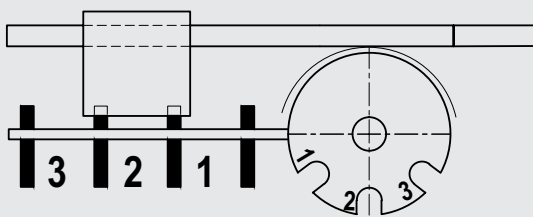
* the hole on the shaft is drilled at parallel position with respect to the middle position of the tap changer

Type KHF IV Threephase Tap Changer

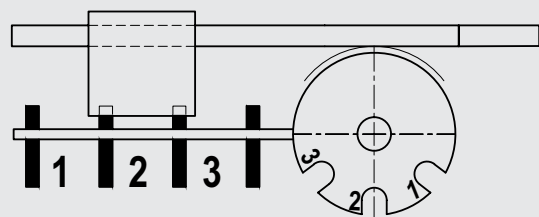
Numbering of the Repeater Disc / Fixed Contacts

Numbering of the repeaters for rack and pinion drive

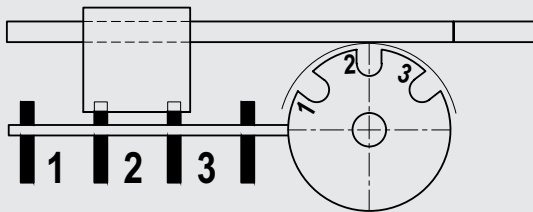
A1



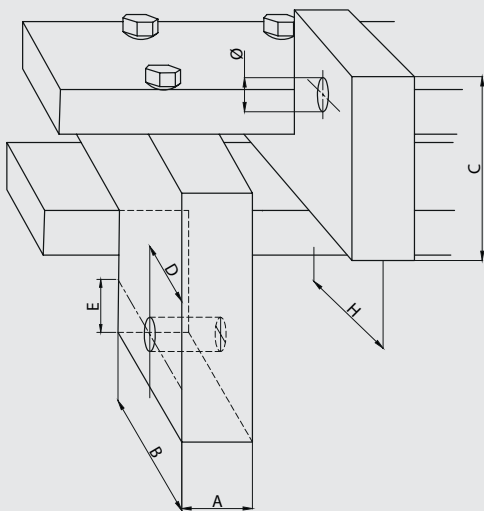
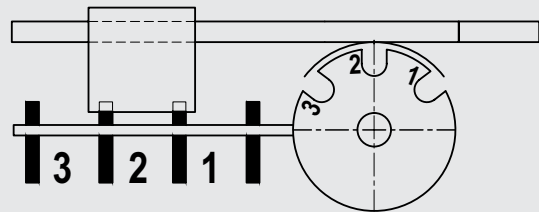
B1



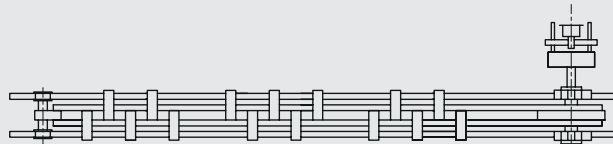
C1



D1



FLAG TYPE CONTACTS

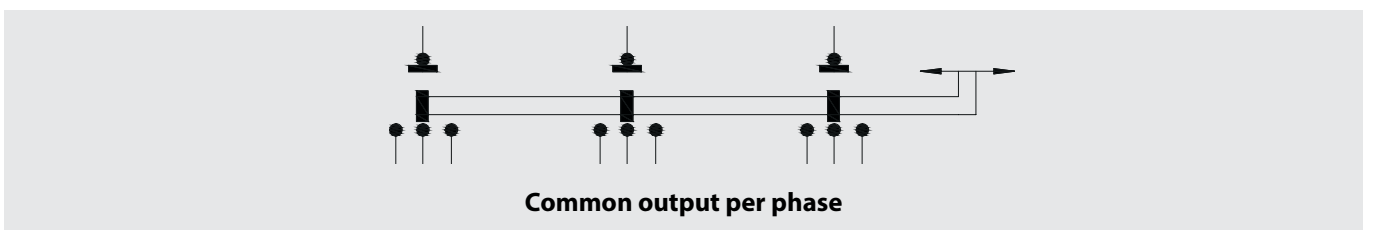
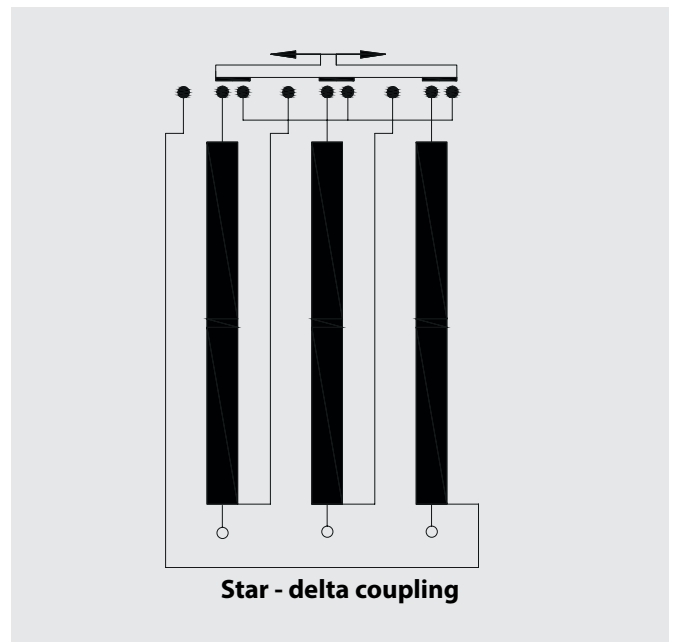
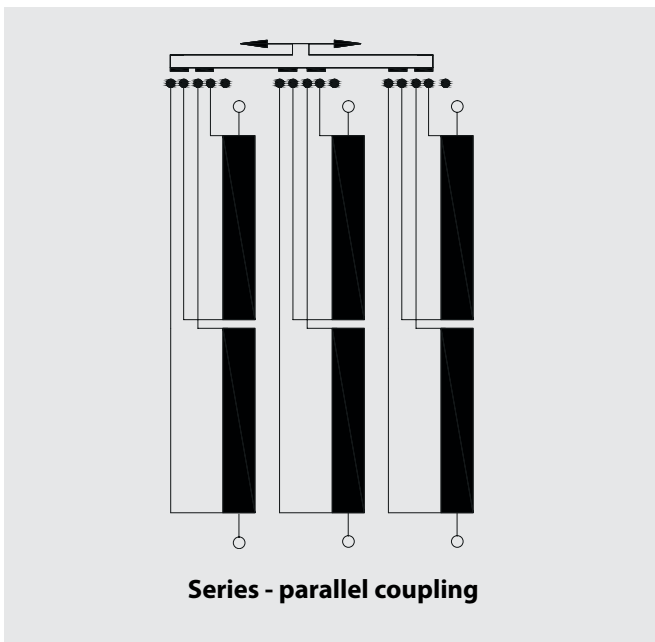
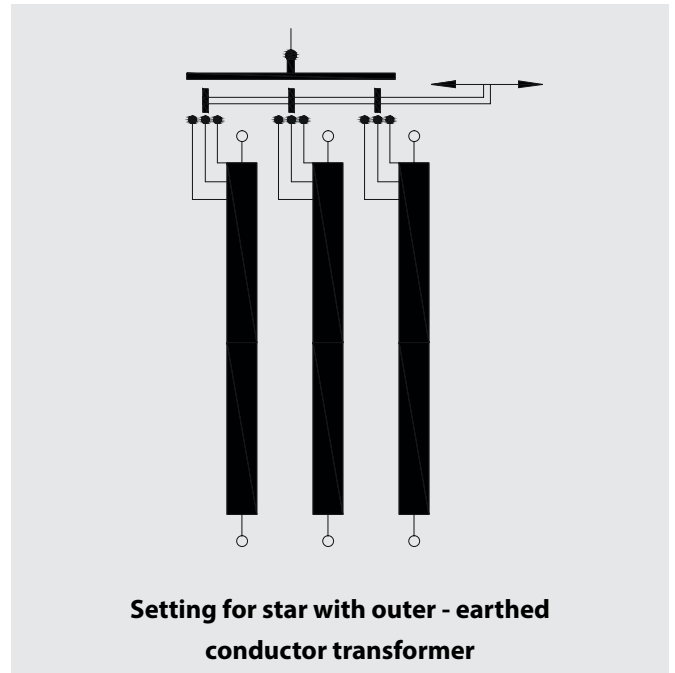
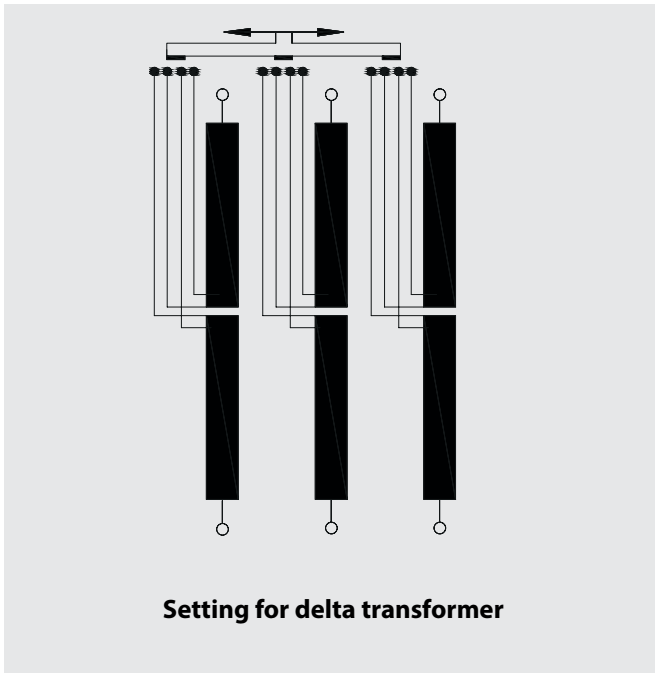


Unless otherwise specified by the customer, flag type contacts are positioned as in the diagram

Description	Contact Numbers	Current A	A	B	C	D	E	H
Flag Type Contact	KK364	800	20	37.5	60	15	15	37.5
	KK365	1000	20	42.5	60	17.5	17.5	42.5
	KK366	1200	25	47.5	80	20	20	47.5

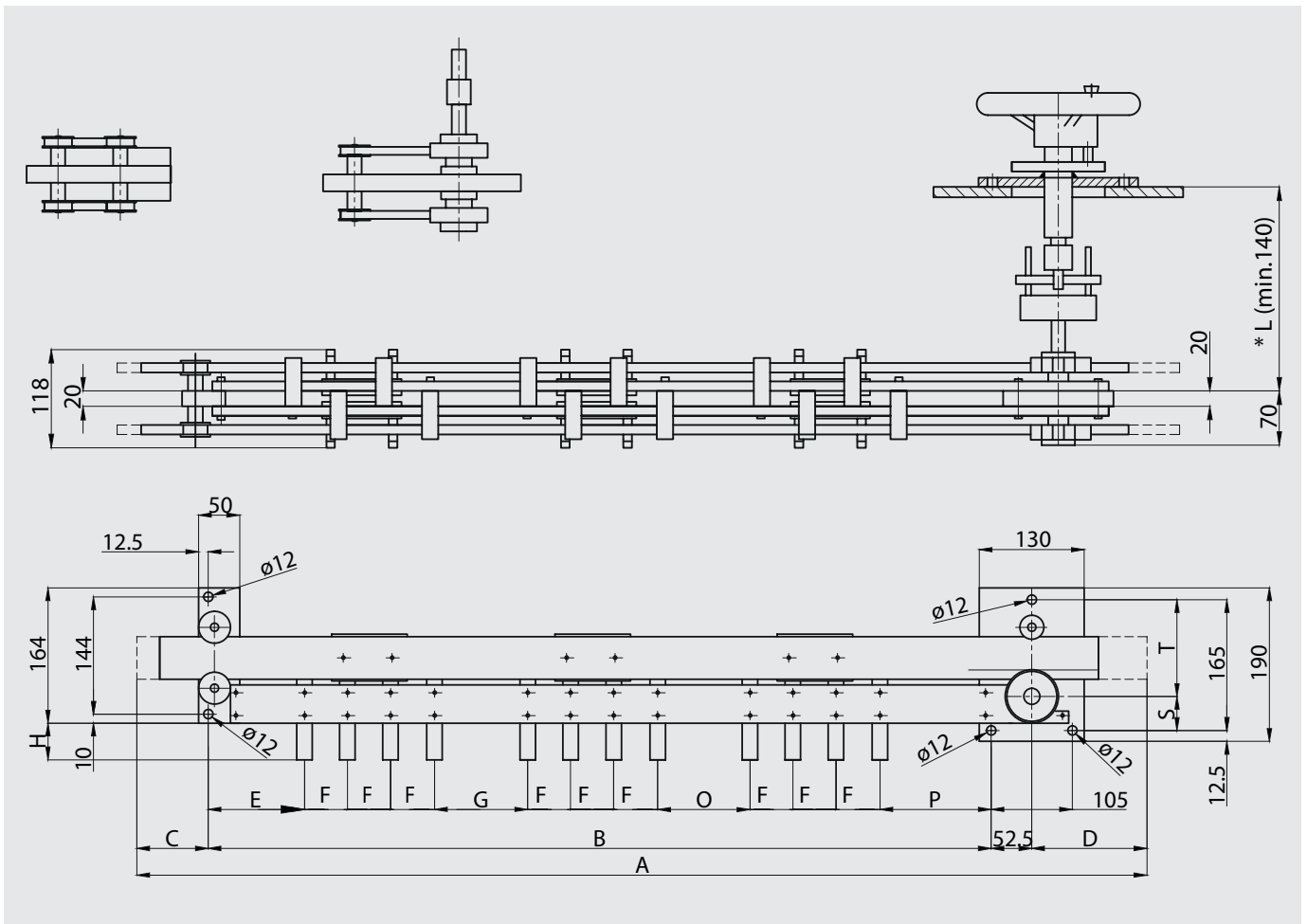
Type KHF IV Threephase Tap Changer

Connection Diagrams



Type KHF IV Threephase Tap Changer

Delta diagram / 20 - 30 kV / 800 - 1250 A / 2 - 5 Positions / 2,5 % per Position



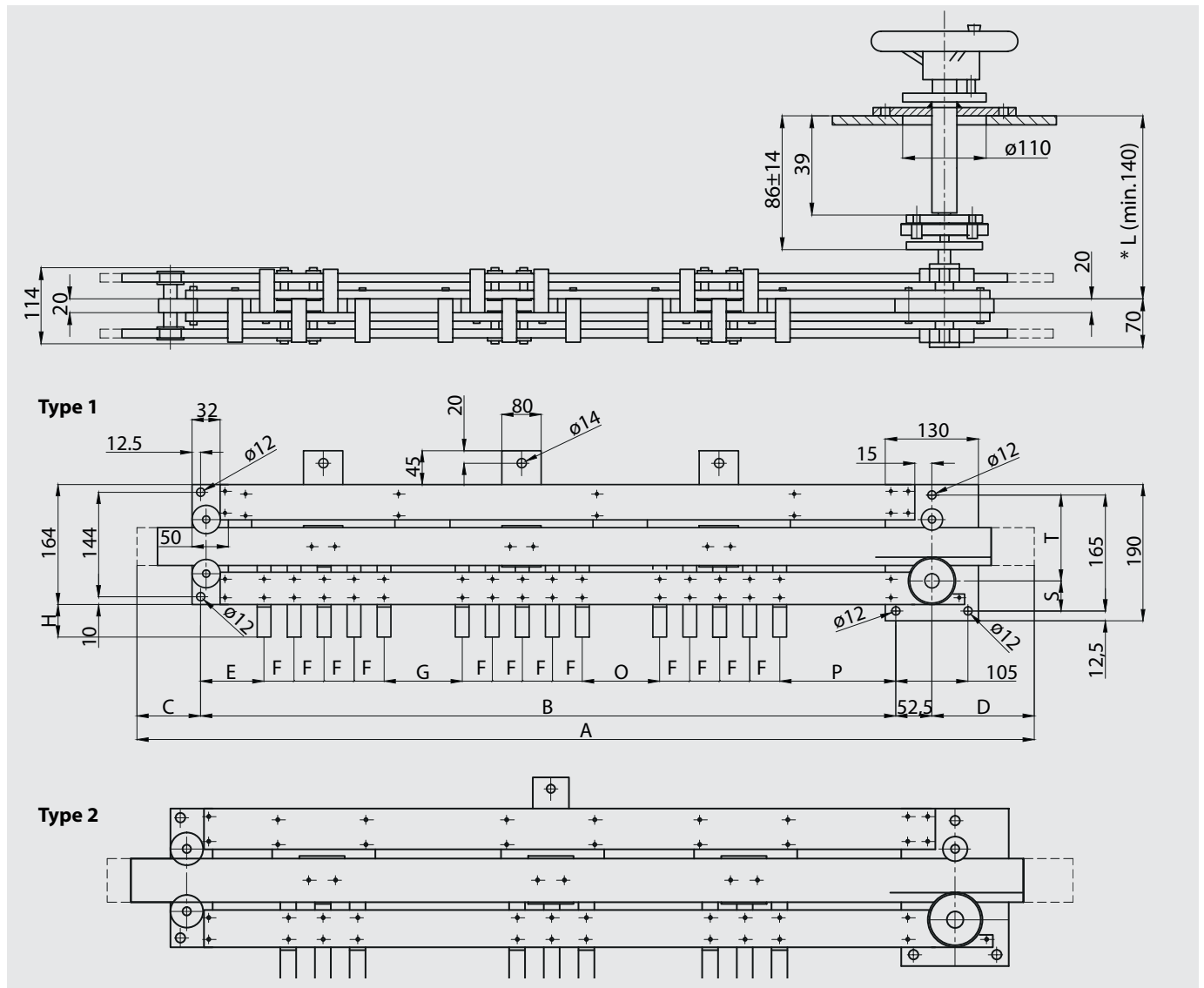
Voltage Class kV	Number of Positions	A	B	C	D	E	F	G	H	O	P	S	T	L	Unit No.
20	2	876	681	58	85	108	55	80	Depends on fixed contacts	80	83	43	122	Please specify when ordering	M431D248
	3	1151	846	113	140	108	55	80		80	83	43	122		M431D348
	4	1426	1011	168	195	108	55	80		80	83	43	122		M431D448
	5	1701	1176	223	250	108	55	80		80	83	29	136		M431D548
30	2	1010	815	58	85	140	55	115	Depends on fixed contacts	115	115	43	122	Please specify when ordering	M431D258
	3	1285	980	113	140	140	55	115		115	115	43	122		M431D358
	4	1560	1145	168	195	140	55	115		115	115	43	122		M431D458
	5	1835	1310	223	250	140	55	115		115	115	29	136		M431D558

* L min: 95 (for KH 320 control device)

L min: 170 (for KH 330 control device)

Type KHF IV Threephase Tap Changer

Star diagram / 20 - 30 kV / 800 - 1250 A / 2 - 5 Positions / 2,5 % per Position

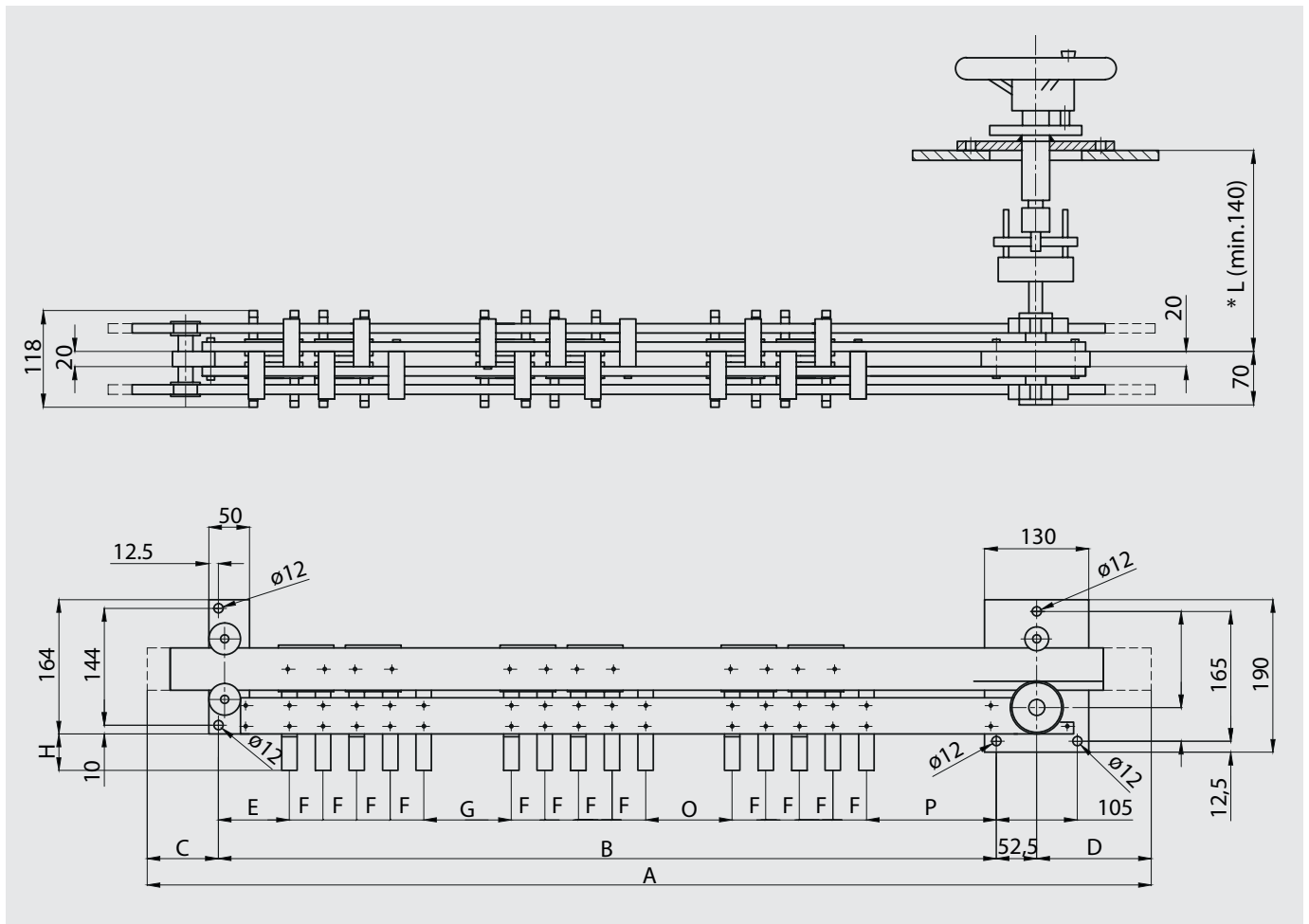


Voltage Class kV	Number of Positions	A	B	C	D	E	F	G	H	O	P	S	T	L	Unit No. Type 1	Unit No. Type 2
20	2	815	620	58	85	125	55	115	Depends on fixed contacts	115	100	43	122	Please specify when ordering	M43148C2	M431F348
	3	1090	785	113	140	125	55	115		115	100	43	122		M43148C3	M431F348
	4	1365	950	168	195	125	55	115		115	100	43	122		M43148C4	M431F448
	5	1640	1115	223	250	125	55	115		115	100	29	136		M43148C5	M431F548
30	2	935	740	58	85	155	55	145	Depends on fixed contacts	145	130	43	122	Please specify when ordering	M43158C2	M431F258
	3	1210	905	113	140	155	55	145		145	130	43	122		M43158C3	M431F358
	4	1485	1070	168	195	155	55	145		145	130	43	122		M43158C4	M431F458
	5	1760	1235	223	250	155	55	145		145	130	29	136		M43158C5	M431F558

* L min: 95 (for KH 320 control device) / L min: 170 (for KH 330 control device)

Type KHF IV Threephase Tap Changer

Series parallel coupling / 10 - 20 kV / 1250 A



Voltage Class kV	A	B	C	D	E	F	G	H	O	P	S	T	L	Unit No.
10 - 20	1416	1243,5	72,5	100	108	70	80	42,5	80	83	43	122	Please specify when ordering	M431P278

* L min: 95 (for KH 320 control device)

L min: 170 (for KH 330 control device)