

MOD

Molded Case Circuit Breakers



MOD series molded case circuit breakers are used for switching and protecting low-voltage installations in large residential properties and business as well as industrial buildings. They ensure reliable protection against overload and short circuits and they can be used as a main disconnection switch, too.

Benefits

- ▶ Rated currents range from 40 A to 1600 A
- ▶ Three- or four-pole versions
- ▶ High short-circuit breaking capacity (up to 85 kA)
- ▶ Easy adjustable overload and short-circuit release
- ▶ Micro-processor release (e-version)
- ▶ Compact mechanical design
- ▶ They can be installed vertically or horizontally
- ▶ Many additional accessories

Types

MOD1	three-pole, four-pole
MOD2	three-pole, four-pole
MOD3	three-pole, four-pole
MOD4	three-pole, four-pole
MOD5	three-pole, four-pole
MOD6	three-pole, four-pole

Standards

- ▶ IEC/EN 60947-2

MOD 1 - Three-pole, adjustable type

Type	Rated Current I_n (A)	Number of Poles	Ordering No.	Weight (kg)	Packaging (pcs)
Standard rated short capability					
MOD1 3NL 32A	32	3	786.103.961	1.1	1
MOD1 3NL 40A	40	3	786.103.960	1.1	1
MOD1 3NL 50A	50	3	786.103.970	1.1	1
MOD1 3NL 63A	63	3	786.103.980	1.1	1
MOD1 3NL 80A	80	3	786.103.990	1.1	1
MOD1 3NM 80A	80	3	786.103.992	1.3	1
MOD1 3NL 100A	100	3	786.104.000	1.1	1

MOD1 - Four-pole, adjustable type

Standard rated short capability					
MOD1 4NL 63A	63	4	786.104.910	1.4	1
MOD1 4NL 80A	80	4	786.104.920	1.4	1
MOD1 4NL 100A	100	4	786.104.930	1.4	1

MOD2 - Three-pole, adjustable type

Standard rated short capability					
MOD2 3NL 125A	125	3	786.104.100	1.8	1
MOD2 3NM 125A	125	3	786.103.930	2.1	1
MOD2 3NL 160A	160	3	786.104.200	1.8	1
MOD2 3NM 160A	160	3	786.103.798	2.1	1
MOD2 3NL 200A	200	3	786.104.300	1.8	1
MOD2 3NM 200A	200	3	786.103.790	2.1	1
MOD2 3NL 250A	250	3	786.103.792	1.8	1
MOD2 3NM 250A	250	3	786.103.791	2.1	1

MOD2 - Four-pole, adjustable type

Standard rated short capability					
MOD2 4NL 125A	125	4	786.104.940	2.3	1
MOD2 4NL 200A	200	4	786.104.950	2.3	1
MOD2 4NL 250A	250	4	786.104.960	2.3	1

MOD3 - Three-pole, adjustable type

Middle rated short capability					
MOD3 3NM 250A	250	3	786.103.940	5.1	1
MOD3 3NM 315A	315	3	786.104.400	5.1	1
MOD3 3NM 400A	400	3	786.104.500	5.1	1

MOD3 - Four-pole, adjustable type

Middle rated short capability					
MOD3 4NM 315A	315	4	786.103.537	5.1	1
MOD3 4NM 400A	400	4	786.103.631	5.1	1

MOD3 - Three-pole, electronic type

Middle rated short capability					
MOD3 3EM 250A	250	3	786.104.180	5.5	1
MOD3 3EM 400A	400	3	786.103.799	5.5	1



MOD4 - Three-pole, adjustable type

Type	Rated Current I_n (A)	Number of Poles	Ordering No.	Weight (kg)	Packaging (pcs)
Middle rated short capability					
MOD4 3NM 500A	500	3	786.104.600	6.9	1
MOD4 3NM 630A	630	3	786.104.700	6.9	1

MOD4 - Four-pole, adjustable type

Middle rated short capability					
MOD4 4NM 500A	500	4	786.103.536	6.9	1
MOD4 4NM 630A	630	4	786.103.646	6.9	1

MOD4 - Three-pole, electronic type

Middle rated short capability					
MOD4 3EM 630A	630	3	786.103.781	6.9	1

MOD5 - Three-pole, adjustable type

Middle rated short capability					
MOD5 3NM 800A	800	3	786.104.800	8.0	1
High rated short capability					
MOD5 3NH 800A	800	3	786.103.810	8.0	1

MOD5 - Three-pole, electronic type

Middle rated short capability					
MOD5 3EM 800A	800	3	786.104.190	6.9	1

MOD6 - Three-pole, adjustable type

Middle rated short capability					
MOD6 3NM 1000A	1000	3	786.104.820		1
MOD6 3NM 1250A	1250	3	786.104.830		1
MOD6 3NM 1600A	1600	3	786.104.840		1

MOD6 - Four-pole, adjustable type

Middle rated short capability					
MOD6 4NM 1000A	1000	4	on request		1
MOD6 4NM 1250A	1250	4	on request		1
MOD6 4NM 1600A	1600	4	on request		1

MOD6 - Three-pole, electronic type

Middle rated short capability					
MOD6 3EM 1000A	1000	3	786.103.782	15.8	1
MOD6 3EM 1250A	1250	3	786.103.783	15.8	1
MOD6 3EM 1600A	1600	3	786.104.410	15.8	1



Technical characteristics for thermal-adjustable type

Technical data	Symbol	Unit	MOD1	MOD2	MOD3	MOD4	MOD5	MOD6						
Frame		A	160	250	400	630	800	1600						
Standard			IEC/EN 60947-2											
Approvals			KEMA*, CE											
Rated current (at 40 °C)	I _n	A	32, 40, 50, 63, 80, 100	125, 160, 200, 250	250, 315, 400	500, 630, 800	800, 1000, 1250, 1600	1000, 1250, 1600						
Magnetic tripping current	I _i	A	10*I _n											
Number of poles			3, 4											
Rated operational voltage	U _e	V AC	380 / 400 / 415											
Rated insulation voltage	U _i	V AC	1000											
Rated impulse withstand voltage	U _{imp}	kV	8											
Pollution degree			III											
Rated frequency	f	Hz	50 / 60											
Altitude		m	< 2000											
Breaking capacity level *			L	M	L	M	M	H	M	H	M			
Rated ultimate short-circuit breaking capacity	400 V	I _{cu}	kA	36	50	36	50	85	100	85	100	85	100	66
Rated ultimate short-circuit breaking capacity	400 V	I _{cs}	kA	25	36	25	36	60	75	60	75	60	75	50
Rated short-time withstand current / 1s	400 V	I _{cw}	V AC	1600	4000	5000	8000	10000	20000					
Rated short-circuit making capacity	400 V	I _{cm}	V AC	2280	5500	7600	12600	13000	24300					
Temperature range		°C	-25 ... +55											
Storage temperature range		°C	-40 ... +70											
Utilization category			AC21A / AC21B, AC22A / AC22B											
Mechanical durability		op. c.	10000	10000	10000	10000	10000	3000						
Electrical durability		op. c.	1500	1500	1000	1000	1000	500						
Instantaneous tripping 0.8-1.0 x I _n	F		fixed											
	N	I _{cs}	kA	adjustable from 0.8 - 1 x I _n										
Screws			M8	M8	M10	M12								
Head			M8	M8	M10	M12								
Width of copper connection		mm	16	22	24	35								

*Selected models only: MOD1 3NM, MOD2 3NM, MOD1 3NL, MOD2 3NL, MOD1 4NM, MOD2 4NM, MOD1 4NL, MOD2 4NL

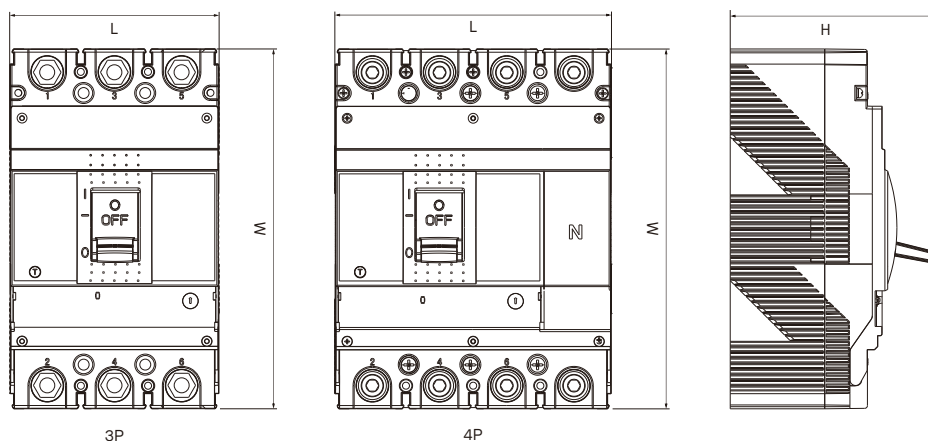
Technical characteristics for electronic type

Technical data		Symbol	Unit	MOD3		MOD4		MOD5		MOD6		
Frame			A	250, 400		630		800		1000, 1250, 1600		
Standard		IEC/EN 60947-2										
Approvals		CE										
Rated current (at 40 °C)		I _n	A	250, 400		630		800		1000, 1250, 1600		
Number of poles		3, 4										
Rated operational voltage		U _e	V AC	380 / 400 / 415								
Rated insulation voltage		U _i	V AC	1000								
Rated impulse withstand voltage		U _{imp}	kV	8								
Pollution degree		III										
Rated frequency		f	Hz	50 / 60								
Altitude		m			< 2000							
Breaking capacity level *				M	H	M	H	M	H	M		
Rated ultimate short-circuit breaking capacity		400 V	I _{cu}	kA	85	100	85	100	85	100	66	
Rated ultimate short-circuit breaking capacity		400 V	I _{cs}	kA	60	75	60	75	60	75	50	
Rated short-time withstand current / 1s		400 V	I _{cw}	V AC	5000		8000		10000		20000	
Rated short-circuit making capacity		400 V	I _{cm}	V AC	7600		12600		13000		24300	
Temperature range			°C			-25 ... +55						
Storage temperature range			°C			-40 ... +70						
Utilization category			AC21A / AC21B, AC22A / AC22B									
Mechanical durability			op. c.			10000		10000		3000		
Electrical durability			op. c.			1500		1000		1000		500

Dimensions

(mm)

Type		MOD1	MOD2	MOD3	MOD4	MOD5	MOD6
L × W × H	3P M	155 × 92 × 93	165 × 107 × 100.5	257 × 150 × 152	257 × 150 × 152	280 × 210 × 155	310 × 212 × 242
	4P M	155 × 122 × 93	165 × 142 × 100.5	257 × 197 × 152	257 × 197 × 152	280 × 280 × 155	310 × 282 × 242



Accessory installation manuals for 3-pole MCCB



PS11
(Auxiliary contact)



AL11
(Alarm switch)



SHT
(Shunt trip)



QT38
(Under-voltage release)



Item	Accessories	125 A 3P	160 A 3P	250 A 3P	400 A 3P	630 A 3P	800 A 3P
AL11							
SHT							
PS11							
QT38							
AL11 + PS11							
TWO PS11							
SHT, PS11							
SHT, AL11							
SHT, AL11 + PS11							
SHT, TWO PS11							
SHT, QT38			-	-			
QT38, SHT							
QT38, PS11							
QT38, AL11							
QT38, AL11 + PS11							
QT38, TWO PS11							
PS11, AL11							
PS11, SHT							
PS11, AL11 + PS11							
PS11, TWO PS11							
PS11, QT38			-	-			
AL11, PS11							
AL11, SHT							
AL11, AL11 + PS11							
AL11, TWO PS11							
AL11, QT38			-	-			
AL11 + PS11, PS11							
AL11 + PS11, AL11							
AL11 + PS11, SHT							
AL11 + PS11, TWO PS11							
AL11 + PS11, QT38			-	-			
TWO PS11, PS11							
TWO PS11, AL11							
TWO PS11, SHT							
TWO PS11, AL11 + PS11							
TWO PS11, QT38			-	-			

Valid for all 3-pole
versions of Iskra
MOD



Accessory installation manuals for 4-pole MCCB



PS11
(Auxiliary contact)



AL11
(Alarm switch)



SHT
(Shunt trip)



QT38
(Under-voltage release)



Item	Accessories	125 A 4P	160 A 4P	250 A 4P	400 A 4P	630 A 4P	800 A 4P
AL11							
SHT							
PS11							
QT38							
AL11 + PS11							
TWO PS11							
SHT, PS11							
SHT, AL11							
SHT, AL11 + PS11							
SHT, TWO PS11							
SHT, QT38			-	-			
QT38, SHT							
QT38, PS11							
QT38, AL11							
QT38, AL11 + PS11							
QT38, TWO PS11							
PS11, AL11							
PS11, SHT							
PS11, AL11 + PS11							
PS11, TWO PS11							
PS11, QT38			-	-			
AL11, PS11							
AL11, SHT							
AL11, AL11 + PS11							
AL11, TWO PS11							
AL11, QT38							
AL11 + PS11, PS11							
AL11 + PS11, AL11							
AL11 + PS11, SHT							
AL11 + PS11, TWO PS11							
AL11 + PS11, QT38			-	-			
TWO PS11, PS11							
TWO PS11, AL11							
TWO PS11, SHT							
TWO PS11, AL11 + PS11							
TWO PS11, QT38							

Valid for all 4-pole
versions of Iskra
MOD



Note:
R2 can be installed
with PS11, TWO PS11

Molded Case Circuit Breakers - Accessories

Motor operated mechanism

Type	Rated Voltage U _n (V)	Ordering No.	Weight (kg)	Packaging (pcs)
MOD1 3N ACM 230VAC	230	786.103.789	1.2	1
MOD2 3N ACM 230VAC	230	786.103.795	1.2	1
MOD3 3N ACM 230VAC	230	786.103.793	3.4	1
MOD4 3N ACM 230VAC	230	786.103.796	3.4	1
MOD5 3N ACM 230VAC	230	786.103.794	3.8	1
MOD6 3N ACM 230VAC	230	786.104.340	3.92	1



Extended rotary handle

MOD1 3N ERH	786.103.784	0.3	1
MOD2 3N ERH	786.103.785	0.3	1
MOD3 3N ERH	786.103.786	0.3	1
MOD4 3N ERH	786.103.787	0.3	1
MOD5 3N ERH	786.103.788	0.3	1



Shunt trip

MOD1 A230 SHT	230	786.104.900	0.032	1
MOD2 A230 SHT	230	786.104.110	0.108	1
MOD3 A230 SHT	230	786.104.120	0.175	1
MOD4 A230 SHT	230	786.103.900	0.250	1
MOD5 A230 SHT	230	786.103.910	0.250	1
MOD6 A230 SHT	230	786.104.420	0.160	1



Under-voltage release

MOD1 U230VAC QT38	230	786.104.130	0.075	1
MOD2 U230VAC QT38	230	786.104.140	0.172	1
MOD3 U230VAC QT38	230	786.104.150	0.250	1
MOD4 U230VAC QT38	230	786.103.840	0.250	1
MOD5 U230VAC QT38	230	786.103.850	0.250	1
MOD6 U230VAC QT38	230	786.104.430	0.180	1



Alarm switch

MOD1 AL11	786.103.820	0.06	1
MOD2 AL11	786.103.860	0.06	1
MOD3 AL11	786.103.870	0.06	1
MOD4 AL11	786.103.880	0.06	1
MOD5 AL11	786.103.890	0.06	1
MOD6 AL11	786.104.440	0.04	1



Auxiliary contact

MOD1 PS11	786.104.160	0.06	1
MOD2 PS11	786.103.950	0.06	1
MOD3 PS11	786.104.170	0.12	1
MOD4 PS11	786.103.920	0.12	1
MOD5 PS11	786.103.830	0.12	1
MOD6 PS11 OF	786.104.450	0.12	1



4P Straight bar

4P 160BAR	786.103.881	0.102	
4P 250BAR	786.103.882	0.203	
4P 400BAR	786.103.883	0.370	
4P 630BAR	786.103.884	0.491	
4P 800BAR	786.103.885	0.491	



ACM Motor operated mechanism

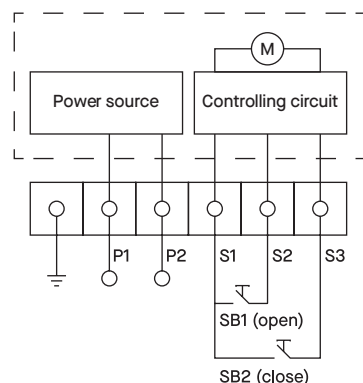
- ▶ Remote operation of MCCBs
 - ▶ Motor mounts directly on MCCB with screws (included) without removal of midcover
 - ▶ Manual operation possible
 - ▶ Clear ON/OFF/TRIP indication
 - ▶ Trip function
- ▶ Rated voltages: AC: 230 V, 400 V
DC: 24 V, 100 V, 220 V



Technical details

Type		MOD 1	MOD 2	MOD 3	MOD 4	MOD 5
Rated operational voltage		220 - 240 VAC				
Operation current		0.17	0.23	0.33	0.47	0.44
Starting current - Peak value	A	1.05	1.5	2.09	2.15	2.32
Operation method		direct drive				
Operation time (s)	ON	0.31	0.36	0.63	0.56	0.62
	OFF	0.27	0.25	0.51	0.45	0.51
	Reset	0.27	0.25	0.51	0.45	0.51

Wiring diagram



Instructions

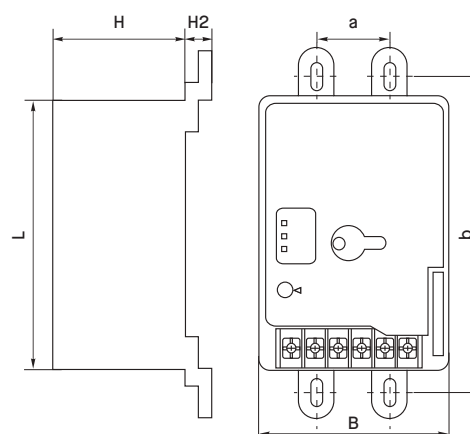
P1-P2: DC IN;
SB1,SB2: operating button (equipped by user)

Notes

In the dotted box is the circuit breaker inner wiring diagram.

Dimensions

Type	Shape size			Installation size		
	L	B	H	H1	a	b
MOD1-100	116	90	77	12.5	30	129
MOD2-250	116	90	77	15	35	126
MOD3-400	176	130	115	27	44	215
MOD4-630	176	130	115	31	70	243
MOD5-800	176	130	115	31	70	243



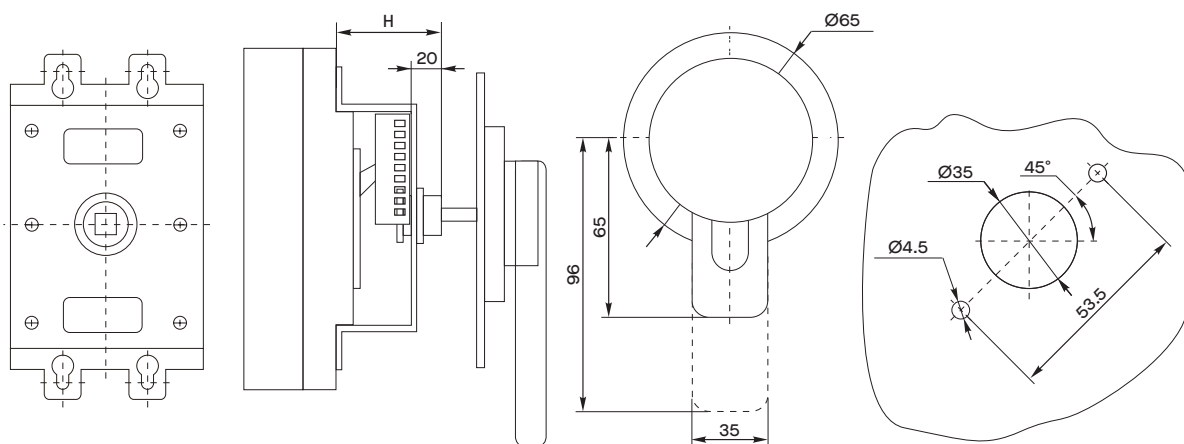
ERH Extended rotary handle

- ▶ Rotary handle mounts directly on MCCB with screws (included) without removal of midcover
- ▶ Clear ON/OFF/TRIP indication
- ▶ Direct access to push to trip button with rotary handle mounted



Dimensions

Type		MOD1-100	MOD2-250	MOD3-400	MOD4-630	MOD5-800
Installation size H (mm)	3P	49	55	74	66	66

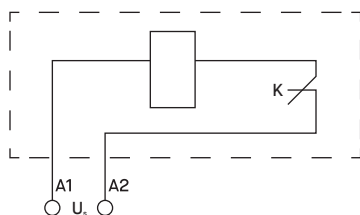


SHT Shunt trip

- ▶ Rated supply voltages U_s : AC: 230 V, 400 V
DC: 24 V, 100 V, 220 V
- ▶ Operation voltages: 0.7 - 1.1 U_s



Wiring diagram



Notes

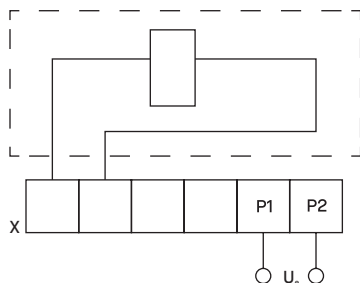
K - the microswitch in series with coil in the shunt release is the normally closed contact, when circuit breaker opening, the contact disconnects automatically, switch on when closing; in the dotted box is the circuit breaker inner wiring diagram.

QT38 Under-voltage release

- ▶ Rated supply voltages U_s : AC: 230 V, 400 V
- ▶ Operation voltages:
When the voltage is 35% - 70% of rated operational voltage, make the circuit breaker tripped stably; When 85% - 110%, guarantee the circuit breaker switched on, when lower than 35% should prevent switch on.



Wiring diagram



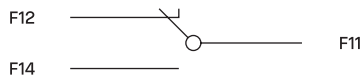
Notes

X - terminal blocks, in the dotted box is the circuit breaker inner wiring diagram.

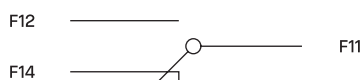
PS11 Auxiliary contact

- ▶ Conventional thermal current I_{th} : 3 A / 230 V
- ▶ Rated operational current I_e : $I_e \leq 225$ A: 0.26 A
 $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under "OFF" position



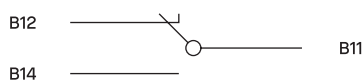
The state of circuit breaker under "ON" position



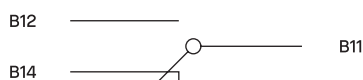
AL11 Alarm switch

- ▶ Conventional thermal current I_{th} : 3 A / 230 V
- ▶ Rated operational current I_e : $I_e \leq 225$ A: 0.26 A
 $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under "OFF" "ON" position



The state of circuit breaker under trip free position (alarm)

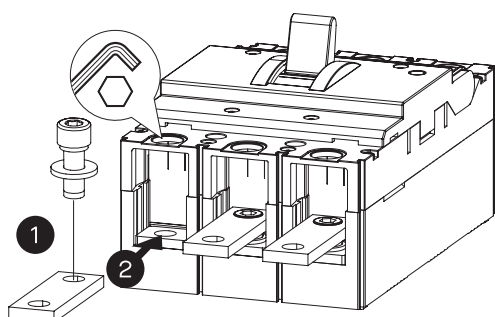


4P Straight bar

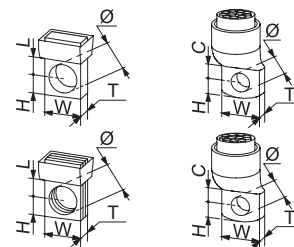
Type	Ordering No.	Weight (kg)
4P 160BAR	786.103.881	0.102
4P 250BAR	786.103.882	0.203
4P 400BAR	786.103.883	0.370
4P 630BAR	786.103.884	0.491
4P 800BAR	786.103.885	0.491



Mounting



	Wmax (mm)	T (mm)	Lx (mm)	Cmin (mm)	Ø (mm)	H (mm)	Screw (mm)	Torque (Nm)
100	16	4.5	9.5	/	8.1	7	6	6
160	16	4.5	10.5	/	8.1	7	6	6
250	20	5	10.5	/	9	8.75	6	6
400	28	8.5	20	/	12.5	17	10	10
630	28	10.5	20	/	12.5	17	10	10



Dimensions

(mm)

	100	160	250	400	630
D1	41	50	60	70	70
D2	15	15	20	28	28
D3	7.3	8	9	11	11
D4	26	32.5	42	43	43
D5	8.5	8.5	9	10.8	10.8
D6	8.5	8.5	9	14.5	14.5
D7	4	4	5	6	8

