

# Magnetic Contactor /Starters

## Type Designation & How to Order

### Magnetic Contactor & Motor Starters

**CM C 10 - R**

Cheil Magnetic Contactor and Switch	Type	Frame Size	Coil Designation
	<b>C</b> Contactors(AC Control)	9~220	- Without additional device
	<b>D</b> Contactors(DC Control)		<b>R</b> Reversing
	<b>S</b> Starter, Open		<b>L</b> With latch unit
	<b>B</b> Starter, Enclosed		<b>K</b> Differential current protection
			<b>P</b> With enclosure & button
			<b>C</b> Definite purpose

### Asingle Type Reversing Contactors

**CMH 10 AC 220V**

Asingle Type Reversing Contactors	Frame Size
	<b>10</b>
	<b>20</b>

### Definite Purpose Relay

**CMR 20 AC 220V**

Definite Purpose Relay	Frame Size
	<b>20</b>



### Thermal Overload Relay

**CO R 10 - 3 L 5A**

Cheil Thermal Over Load Relay	Type	Nominal Rating	Number of bimetal Element	Class	Setting Ranges
	<b>R</b> Non-differential	<b>10~220</b>	- 2 Elements	- Standard	0.14~200A
	<b>K</b> Differential current protection		<b>3</b> 3 Elements	<b>L</b> Differential	

### Contactor Relays

**CMR 4 - D - AC 220V**

Cheil Control Relay	Auxiliary Contact Number	Applicable Voltage	Coil Designation
	<b>4</b> 4 contact	- AC Control	- AC 220V
	<b>6</b> 6 contact	<b>D</b> DC Control	AC 24~ 600V
	<b>8</b> 8 contact		DC 12~ 250

### Reversing Unit

**RU - 10**

Reversing Unit	Type
	<b>10</b> CMC 9N~85N
	<b>20</b> CMC 10~85

### Auxiliary Unit

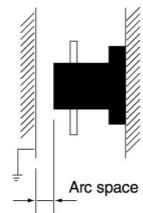
**CAU - 100**

Cheil Auxiliary Unit	Type	Contact Number	Mounting Location	ApplicationType
	<b>1</b>	2 Contact	Side	CMC 9N~85N
	<b>2</b>	2 Contact	Head	CMC 9N~85N, CMC 10~80
	<b>4</b>	2 Contact	Head	CMC 9N~85N, CMC 10~80
	<b>100</b>	2 Contact	Side	CMC 100~220

## Magnetic Contactor /Starters

### The arc blowoff direction has been changed to further improve safety and space conservation

A new extinguishing structure, which eliminates the blow off of hot gas (arc) to the front (direction to door of control panel) when the current is cutoff has been incorporated.



Frame	Arc space
CMC 9N~85N	10
CMC100~220	30

In addition to improved safety, the freedom of panel design has been increased allowing space to be saved.

### DC Electromagnet with AC Operation (Patented)

#### Lower Power Consumption

Coil power consumption is greatly low so CMC Series contactors can be controlled by almost any type of relay, even small output relays of programmable controllers.

#### Lower Power Consumption

When switching a coil, the energy will be desipated within internal circuit of electromagnet.

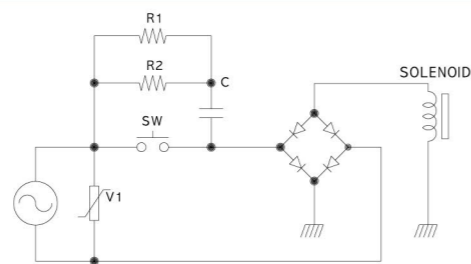
#### Lower Power Consumption

DC excitation does not cause humming so operation is quiet.

#### Lower Power Consumption

In addition to improved safety, the freedom of panel design has been increased allowing space to be saved.

Internal circuit of the electromagnet



### Simple inspections

The contactor can be inspected easily by removing the arc cover.



### Built-in surge absorber

The model with built-in surge absorber for coils is obtainable as an option.

Indication of absorber



Surge absorber



### CAN terminal realizes safety and speedy

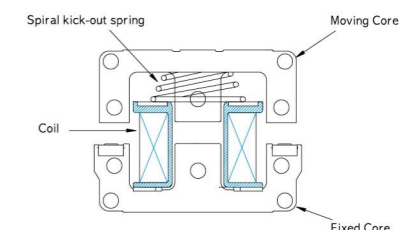
The models with finger protection are safer and speedier even if the lug of a closed type eyelet(ring) terminal plate is used. CMC9N~CMC85N, CMD9N~CMD48N



Stronger barrier strength is improved with the thermoplastic mold.
















### Improved magnet

By using a spiral kick-out spring, the dynamic balance of the moving parts is improved, bouncing is reduced, and the core life is extended. Furthermore, the core movement is generally stabilized. The efficient magnet has been achieved through modern technology of the magnet section using a computer. The contactor has a performance to withstand a voltage drop to 35% with the closed contact.














# Magnetic Contactor /Starters

## Component Type & Selection Guide

Frame Name			CMC 10	CMC 15	CMC 20	CMC 21	CMC 25			CMC 35	CMC 48	CMC 50	CMC 65	CMC 80	CMC 100	CMC 125	CMC 150	CMC 180	CMC 220	
Model Image																				
Ratings KSC 4504	Three-phase motor	AC3 ratings	200~220V	2.2kW 13A	3.7kW 18A	4kW 20A	4kW 20A	5.5kW 26A		7.5kW 35A	11kW 48A	11kW 50A	15kW 65A	19kW 80A	25kW 100A	30kW 125A	37kW 150A	45kW 180A	55kW 220A	
			380~440V	4kW 9A	5.5kW 16A	7.5kW 20A	7.5kW 20A	11kW 25A		15kW 32A	15kW 35A	22kW 48A	30kW 65A	37kW 80A	50kW 100A	60kW 120A	75kW 150A	90kW 180A	110kW 220A	
			500~550V	5.5kW 9A	5.5kW 13A	7.5kW 17A	7.5kW 17A	11kW 20A		15kW 26A	15kW 28A	22kW 38A	37kW 60A	45kW 75A	55kW 80A	60kW 90A	90kW 140A	110kW 180A	132kW 200A	
		AC4 ratings	200~220V	2.2kW 11A	3.7kW 18A	3.7kW 18A	3.7kW 18A	4.5kW 20A		5.5kW 25A	7.5kW 30A	7.5kW 35A	11kW 50A	15kW 65A	19kW 80A	22kW 93A	30kW 125A	37kW 150A	45kW 180A	
			380~440V	4kW 9A	4kW 9A	5.5kW 13A	5.5kW 13A	7.5kW 17A		11kW 24A	11kW 28A	15kW 32A	22kW 47A	30kW 62A	37kW 75A	45kW 90A	55kW 110A	75kW 150A	90kW 180A	
			110V	0.5kW 13A	0.75kW 18A	0.9kW 20A	0.9kW 20A	1.2kW 26A		1.7kW 35A	1.7kW 35A	-	-	-	-	-	-	-	-	
	1phase motor	Resistive load	2pole series	110V	10A	13A	15A	15A	25A		25A	35A	35A	35A	50A	80A	80A	100A	150A	150A
				220V	7A	8A	12A	12A	12A		12A	15A	15A	15A	20A	50A	50A	100A	150A	150A
		DC1 ratings	3pole series	110V	12A	18A	20A	20A	25A		35A	50A	50A	65A	80A	100A	100A	150A	180A	220A
				220V	12A	18A	20A	20A	22A		30A	40A	40A	50A	60A	80A	80A	150A	180A	220A
Continuous current Ith(A)			20A	25A	32A	32A	50A		60A	70A	80A	100A	135A	150A	150A	200A	230A	260A		
IEC 60947	Three-phase motor	AC3 ratings	220~240V	3.5kW 13A	4.5kW 18A	5.5kW 22A	5.5kW 22A	7.5kW 32A		11kW 40A	11kW 48A	15kW 55A	18.5kW 65A	25kW 85A	30kW 105A	37kW 125A	45kW 150A	55kW 180A	75kW 250A	
			380~440V	5.5kW 12A	7.5kW 18A	11kW 22A	11kW 22A	15kW 32A		18.5kW 40A	18.5kW 45A	22kW 50A	30kW 65A	45kW 85A	55kW 105A	60kW 120A	75kW 150A	90kW 180A	132kW 250A	
			500~550V	7.5kW 12A	7.5kW 13A	15kW 22A	15kW 22A	18.5kW 28A		22kW 32A	22kW 40A	30kW 43A	33kW 60A	45kW 75A	55kW 85A	60kW 90A	90kW 140A	110kW 180A	132kW 200A	
			690V	7.5kW 9A	7.5kW 9A	15kW 18A	15kW 18A	18.5kW 21A		22kW 23A	22kW 25A	30kW 28A	33kW 35A	45kW 45A	55kW 65A	60kW 70A	90kW 100A	110kW 120A	132kW 150A	
Endurance (x10,000 operations)	Electrical		100	100	100	100	100		100	100	100	100	100	100	100	100	100	100	100	
	Mechanical		1000	1000	1000	1000	1000		1000	1000	1000	1000	1000	500	500	500	500	500	500	
Additional auxiliary (standard)			1a	1a1b	1a1b	2a2b	2a2b		2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	
Additional auxiliary (front mount)			CAU	CAU	CAU	CAU	CAU		CAU	CAU	CAU	CAU	CAU	-	-	-	-	-		
Mounting type			bin rail or screw mountable						bin rail or screw mountable											
Outline dimension (W × H × D)			44×76.5×88.5	63×76.5×81	63×76.5×81	63×76.5×91.6	75.6×94×98.3		75.6×94×98.3	75.6×94×98.3	92×117.5×115	92×117.5×115	92×117.5×115	100×157×146	100×157×146	120×166×157	138×203×175	138×203×175		
Mounting dimension(mm) (W × D)			30~35×48~60	34~54×48~60	34~54×48~60	34~54×48~60	60~65×65~70		60~65×65~70	60~65×65~70	65~84×75~90	65~84×75~90	65~84×75~90	90×125	90×125	100×125~130	45×190, 120×190	45×190, 120×190		
Applied model	Magnetic contactor	DC control	CMD 10	CMD 15	CMD 20	CMD 21	CMD 25		CMD 35	CMD 48	-	-	-	-	-	-	-	-		
		Standard	CMS 10	CMS 15	CMS 20	CMS 21	CMS 25		CMS 35	CMS 48	CMS 50	CMS 65	CMS 80	CMS 100	CMS 125	CMS 150	CMS 180	CMS 220		
	Motor starters	Reversing	CMS 10-R	CMS 15-R	CMS 20-R	CMS 21-R	CMS 25-R		CMS 35-R	CMS 48-R	CMS 50-R	CMS 65-R	CMS 80-R	CMS 100-R	CMS 125-R	CMS 150-R	CMS 180-R	CMS 220-R		
		Differential current protection	CMS 10-K	CMS 15-K	CMS 20-K	CMS 21-K	CMS 25-K		CMS 35-K	CMS 48-K	CMS 50-K	CMS 65-K	CMS 80-K	CMS 100-K	CMS 125-K	CMS 150-K	CMS 180-K	CMS 220-K		
Thermal overload relay		Standard	COR 10	COR 20	COR 20	COR 20	COR 35		COR 35	COR 35	COR 80	COR 80	COR 80	COR 100	COR 100	COR 150	COR 220	COR 220		
		Differential current protection	COK 10	COK 20	COK 20	COK 20	COK 35		COK 35	COK 35	COK 80	COK 80	COK 80	COK 100	COK 100	COK 150	COK 220	COK 220		
		3 elements	COR 10-3	COR 20-3	COR 20-3	COR 20-3	COR 35-3		COR 35-3	COR 35-3	COR 80-3	COR 80-3	COR 80-3	COR 100-3	COR 100	COR 150-3	COR 220-3	COR 220-3		

# Magnetic Contactor /Starters



## Component Type & Selection Guide

Frame Name				CMC 9N	CMC 12N	CMC 18N	CMC 22N			CMC 32N	CMC 40N	CMC 48N	CMC 50N	CMC 65N	CMC 75N	CMC 85N	
Model Image																	
Ratings KSC 4504	Three-phase motor	AC3 ratings	200~220V	2.2kW 11A	2.7kW 13A	3.7kW 18A	4kW 20A			5.5kW 26A	7.5kW 35A	11kW 48A	11kW 50A	15kW 65A	18.5kW 75A	19kW 80A	
			380~440V	2.7kW 11A	4kW 12A	5.5kW 18A	7.5kW 20A			11kW 25A	15kW 32A	15kW 35A	22kW 48A	30kW 65A	37kW 75A	37kW 80A	
			500~550V	2.7kW 6A	5.5kW 12A	5.5kW 13A	7.5kW 17A			11kW 20A	15kW 26A	15kW 28A	22kW 38A	37kW 60A	37kW 64A	45kW 75A	
		AC4 ratings	200~220V	1.5kW 8A	2.2kW 11A	3.7kW 18A	3.7kW 18A			4.5kW 20A	5.5kW 25A	7.5kW 30A	7.5kW 35A	11kW 50A	13kW 55A	15kW 65A	
			380~440V	2.2kW 6A	4kW 9A	4kW 9A	5.5kW 13A			7.5kW 17A	11kW 24A	11kW 28A	15kW 32A	22kW 47A	25kW 52A	30kW 62A	
			110V	0.4kW 11A	0.5kW 13A	0.75kW 18A	0.9kW 20A			1.2kW 26A	1.7kW 35A	1.7kW 35A	-	-	-	-	
	1phase motor	220V	0.8kW 11A	1kW 13A	1.5kW 18A	1.8kW 20A			-	-	-	-	-	-	-	-	
		Resistive load	DC1 ratings	2pole series	110V	6A	10A	13A	15A		25A	25A	35A	35A	35A	50A	50A
	220V	3A		7A	8A	12A			12A	12A	15A	15A	15A	20A	20A		
	3pole series	110V		8A	12A	18A	20A			25A	35A	50A	50A	65A	70A	80A	
220V		8A		12A	18A	20A			22A	30A	40A	40A	50A	55A	60A		
Continuous current Ith(A)				25A	25A	40A	40A		50A	60A	70A	80A	100A	110A	135A		
IEC 60947	Three-phase motor	AC3 ratings	220~240V	2.5kW 11A	3.5kW 13A	4.5kW 18A	5.5kW 20A			7.5kW 32A	11kW 40A	11kW 48A	15kW 55A	18.5kW 65A	22kW 75A	25kW 85A	
			380~440V	4kW 7A	5.5kW 9A	7.5kW 18A	11kW 20A			15kW 32A	18.5kW 40A	18.5kW 45A	22kW 50A	30kW 65A	37kW 75A	45kW 85A	
			500~550V	4kW 7A	7.5kW 12A	7.5kW 13A	15kW 22A			18.5kW 28A	22kW 32A	22kW 40A	30kW 43A	33kW 60A	37kW 64A	45kW 75A	
			690V	4kW 5A	7.5kW 9A	7.5kW 9A	15kW 18A			18.5kW 20A	22kW 23A	22kW 25A	30kW 28A	33kW 35A	37kW 42A	45kW 45A	
Endurance (x10,000 operations)	Electrical		250	250	250	250			200	200	200	200	200	200	200	200	
	Mechanical		2500	2500	2500	2500			1500	1500	1500	1000	1000	1000	1000	1000	
Additional auxiliary (standard)				1a1b	1a1b	1a1b	1a1b			2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	
Additional auxiliary (front mount)				CAU	CAU	CAU	CAU			CAU	CAU	CAU	CAU	CAU	CAU	CAU	
Mounting type				bin rail or screw mountable						bin rail or screw mountable							
Outline dimension (W × H × D)				44×76.6×89.2	44×76.6×89.2	44×76.6×89.2	44×76.6×89.2			68×86×94.5	68×86×94.5	68×86×94.5	94×123.5×117.4	94×123.5×117.4	94×123.5×117.4	94×123.5×117.4	
Mounting dimension(mm) (W × D)				30~35×48~59	30~35×48~59	30~35×48~59	30~35×48~59			30~35×48~59, 35×60	30~35×48~59, 35×60	30~35×48~59, 35×60	100×50~60, 100×60	100×50~60, 100×60	100×50~60, 100×60	100×50~60, 100×60	
Applied model	Magnetic contactor	DC control		CMD 9N	CMD 12N	CMD 18N	CMD 22N			-	-	-	-	-	-	-	
		Standard		CMS 9N	CMS 12N	CMS 18N	CMS 22N			CMS 32N	CMS 40N	CMS 48N	CMS 50N	CMS 65N	CMS 75N	CMS 85N	
	Motor starters	Reversing		CMS 9N-R	CMS 12N-R	CMS 18N-R	CMS 22N-R			CMS 32N-R	CMS 40N-R	CMS 48N-R	CMS 50N-R	CMS 65N-R	CMS 75N-R	CMS 85N-R	
		Differential current protection		CMS 9N-K	CMS 12N-K	CMS 18N-K	CMS 22N-K			CMS 32N-K	CMS 40N-K	CMS 48N-K	CMS 50N-K	CMS 65N-K	CMS 75N-K	CMS 85N-K	
Thermal overload relay		Standard		COR 22	COR 22	COR 22	COR 22			COR 40	COR 40	COR 40	COR 85	COR 85	COR 85	COR 85	
		Differential current protection		COK 22	COK 22	COK 22	COK 22			COK 40	COR 40	COK 40	COK 85	COK 85	COK 85	COK 85	
		3 elements		COR 22-3	COR 22-3	COR 22-3	COR 22-3			COR 40-3	COR 40-3	COR 40-3	COR 85-3	COR 85-3	COR 85-3	COR 85-3	



# Magnetic Contactor /Starters

## Component Type & Selection Guide

### Definite Purpose Contactors

Frame Name		CMC 20-C	CMC 25-C
Model Image			
AC3 ratings	100~110V	20	25
	200~220V	20	25
	380~440V	17	21
	500~550V	14	17
AC4 ratings	100~110V	18	20
	200~220V	18	20
	380~440V	13	14
	500~550V	10	12
Continuous current Ith (A)		30	35
Endurance (x10,000 operations)	Mechanical	250	250
	Electrical	AC3 ratings	25
		AC4 ratings	1.5
Outline dimension (W × H × D)		42×65.8×74.1	42×65.8×74.1
Mounting dimension(mm) (W × D)		30~34×48~63	30~34×48~63

### Reversing Contactors / Starters

Model Image							
Type	Rating						Continuous Current AC1 Rating
Magnetic Contactor	AC3 rating						
	200~220V		380~440V		500~550V		
	kW	A	kW	A	kW	A	
CMH 10	2.7	13	4	11	5.5	9	20
CMH 20	4	20	7.5	20	7.5	17	25

### ■ Magnetic Contactor + Motor Starter

Type		Rating												Continuous Current AC1 Rating	Auxiliary Contacts		Thermal Overload Relay Combined						
Magnetic Contactor	Motor Starters	AC3 Rating						AC2B Rating							AC4 Rating				Standard	Additional	Type	Setting Ranges	
		200~220V		380~440V		500~550V		200~220V		380~440V		500~550V			200~220V		380~440V						
		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	A					
CMC 10-R	CMS 10-R	2.7	13	4	9	5.5	9	2.7	13	4	9	5.5	9	2.2	11	4	9	20	1a	COR 10	0.1~13		
CMC 15-R	CMS 15-R	3.7	18	5.5	13	5.5	13	3.7	18	5.5	13	5.5	13	3.8	18	4	9	25	1a1b	CAU-2 or CAU-4	COR 20	0.1~18	
CMC 20-R	CMS 20-R	4	20	7.5	20	7.5	17	4	20	7.5	20	7.5	17	3.7	18	5.5	13	32	1a1b		COR 35	4~40	
CMC 21-R	CMS 21-R	4	20	7.5	20	7.5	17	4	20	7.5	20	7.5	17	3.7	18	5.5	13	32	2a2b		COR 80	12~100	
CMC 25-R	CMS 25-R	5.5	26	11	25	11	20	5.5	26	11	25	11	20	4.5	20	7.5	17	50					
CMC 35-R	CMS 35-R	7.5	35	15	32	15	26	7.5	35	15	32	15	26	5.5	25	11	24	60					
CMC 50-R	CMS 50-R	11	50	22	48	22	38	11	50	22	48	22	38	7.5	35	15	32	80					
CMC 65-R	CMS 65-R	15	65	30	65	37	60	15	65	30	65	37	60	11	50	22	47	100					
CMC 80-R	CMS 80-R	19	80	37	80	45	75	19	80	37	80	45	75	15	65	30	62	135					
CMC 9N-R	CMS 9N-R	2.2	11	2.7	11	2.7	6	2.2	11	2.7	7	2.7	6	1.5	8	2.2	6	25	1a1b×2	CAU-2 or CAU-4	COR 22	0.1~22	
CMC 12N-R	CMS 12N-R	2.7	13	4	12	5.5	12	2.7	13	4	9	5.5	9	2.2	11	4	9	25					
CMC 18N-R	CMS 18N-R	3.7	18	5.5	18	5.5	13	3.7	18	5.5	13	5.5	13	3.7	18	4	9	40					
CMC 22N-R	CMS 22N-R	4	20	7.5	20	7.5	17	4	20	7.5	20	7.5	17	3.7	18	5.5	13	40					
CMC 32N-R	CMS 32N-R	5.5	26	11	25	11	20	5.5	26	11	25	11	20	4.5	20	7.5	17	50	2a2b×2				
CMC 40N-R	CMS 40N-R	7.5	35	15	32	15	26	7.5	35	15	32	15	26	5.5	25	11	24	60				COR 40	4~40
CMC 50N-R	CMS 50N-R	11	50	22	48	22	38	11	50	22	48	22	38	7.5	35	15	32	80					
CMC 65N-R	CMS 65N-R	15	65	30	65	37	60	15	65	30	65	37	60	11	50	22	47	100					
CMC 75N-R	CMS 75N-R	18.5	75	37	75	37	64	18.5	75	37	75	37	64	13	55	25	52	110					
CMC 85N-R	CMS 85N-R	19	80	37	80	45	75	19	80	37	80	45	75	15	65	30	62	135					