

Top 100
Global
Innovator
10년 연속 선정

Low Voltage Soft Starter

LVSS 시리즈



LS[®] **ELECTRIC**

Soft Starter

Soft Starter 사용 장점

- 기동 시 돌입전류(Inrush Current)를 최소화.
 - 모터 기동시 VOLTAGE DROP 최소화
 - 기동전류 최소화로 계통보호
 - 변압기 및 케이블 용량감소
 - 모터 보호: 권선 히팅 최소화
- Soft Starting으로 기계장치 스트레스 최소화
 - 모터 기동시 모터와 기계장치에 인가되는 충격을 최소화
 - 장비 고장발생 횟수 저감으로 유지보수 비용 절감
- 최적의 모터보호 기능
 - 운전상태 표시기능: 각 상전류, 과부하율, Event Record 등 Soft Starter 실시간 상태 확인
 - 단락, 과부하, 과전류, 결상, 모터 온도 보호 등 보호기능 내장.
- GREEN 제품(SCR-전력용 반도체) 적용
 - 구리, 알루미늄 등 적용 배제에 따른 탄소 배출 최소화
- 화재 예방: Reactor 발화로 인한 화재.
 - 리액터 기동의 경우 높은 전류가 발생되고, 장시간 운전하게 되면 리액터의 발열 및 소손이 발생할 수 있음.
- Water Hammer 현상 제거: Soft Stop 기능.
 - * Water Hammer 현상: 관로 안의 액체 운동상태를 급격히 변화시킴으로써 일어나는 압력파 현상.
- Harmonic 발생 최소화: IEEE 519 만족.
 - * IEEE 519: 고조파 기준관리 (고조파 왜곡 규제)
 - 유도성 부하에서 발생하는 전압 왜곡파형을 끌어줄음으로써 Harmonic 발생을 감소시키며, 인버터와는 달리 기동이 완료되면 Bypass mode로 전환되어서 고조파가 발생하지 않음.





Low Voltage Soft Starter

LVSS 시리즈



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LVSS Series

LVSS 시리즈의 장점



간편한 조작방법

- 시인성이 뛰어나고, 조작이 쉬운 Full Color Touch Screen(3.5인치)



동작유무 확인 가능

Full Color Touch Screen

"정상 상태"

"Trip 발생 상태"



4단계 파라메타



다국어 설정 가능

- Korean, Vietnam, Japanese, Russian, Turkish, Arabic, Chinese 등 17개 국어 표시 가능



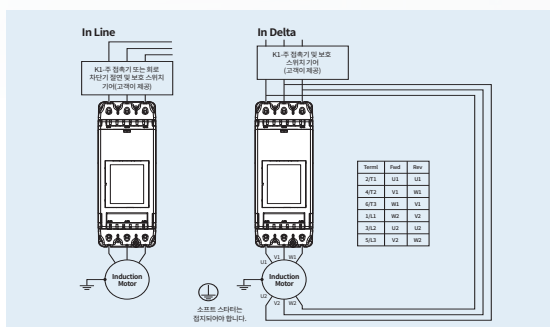
USB 사용 파라메타

- USB 사용 파라메타 Uploading / Downloading 가능



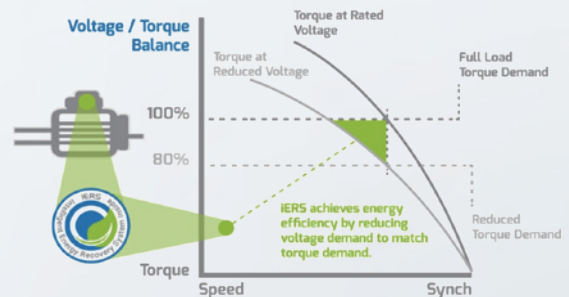
In Delta 결선 가능

- In Delta 결선 시, 한 단계 높은 모터용량 적용 가능



에너지 절약

- iERS – Intelligent Energy Saving System (에너지 절약 시스템)

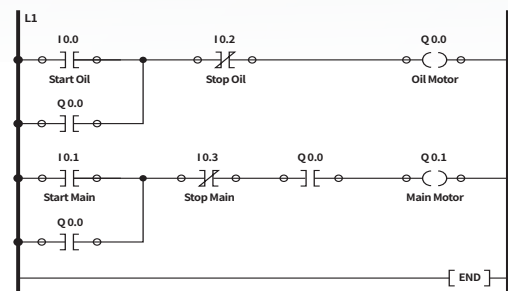


모터 경부하 시, 역률을 감지하여 출력전압을 제어함으로써 모터가 해당 부하에서 속도를 유지하는데 정확한 양의 에너지만 소비하도록 하는 에너지 절약시스템입니다. 압축기, 냉장고, 펌프잭, 성형기 및 냉각기와 같은 애플리케이션은 일반적으로 부하가 적은 경우 에너지 소비량의 최대 32%를 절약할 수 있습니다.



PLC Function

- Input, Output 단자를 programming 할 수 있으며, 신호 입력 및 출력에 대한 응답 시간 조절 가능



선택 가이드

LS-LVSS 제품은 200~480V에서 사용가능하고, 주파수는 50/60Hz 공용입니다.
이에 모터용량(kW) 기준으로 제품을 선택하시기를 바랍니다.

In Line				Select Model			Control Voltage	
A	IEC (kW)			Trip Class 10	Trip Class 20	Trip Class 30		
	230 V	400 V	440 V	5 starts/hour @ 50°C				
17	4	7.5	7.5	LS-LVSS-101	VMX-SGY-103	LS-LVSS-105	LS-LVSS-101~305: DC24V AC110V AC220V	
22	5.5	11	11	LS-LVSS-103	LS-LVSS-105	LS-LVSS-107		
29	7.5	15	15	LS-LVSS-105	LS-LVSS-107	LS-LVSS-109		
35	7.5	18.5	18.5	LS-LVSS-107	LS-LVSS-109	LS-LVSS-111		
41	11	22	22	LS-LVSS-109	LS-LVSS-111	LS-LVSS-113		
55	15	30	30	LS-LVSS-111	LS-LVSS-113	LS-LVSS-115		
66	18.5	37	37	LS-LVSS-113	LS-LVSS-115	LS-LVSS-117		
80	22	45	45	LS-LVSS-115	LS-LVSS-117	LS-LVSS-201		
100	30	55	55	LS-LVSS-117	LS-LVSS-201	LS-LVSS-203		
132	37	75	90	LS-LVSS-201	LS-LVSS-203	LS-LVSS-205		
160	45	90	110	LS-LVSS-203	LS-LVSS-205	↓		
195	55	110	132	LS-LVSS-205	↓	↓		
3 stars/hour @ 50°C							LS-LVSS-307~505-1: AC110V	
160	45	90	110	↓	↓	LS-LVSS-301		
195	55	110	132	↓	LS-LVSS-301	LS-LVSS-303		
242	75	132	150	LS-LVSS-301	LS-LVSS-303	LS-LVSS-305		
302	90	160	185	LS-LVSS-303	LS-LVSS-305	LS-LVSS-307-1 LS-LVSS-307-2		
361	110	200	220	LS-LVSS-305	LS-LVSS-307-1 LS-LVSS-307-2	LS-LVSS-309-1 LS-LVSS-309-2		
430	132	250	280	LS-LVSS-307-1 LS-LVSS-307-2	LS-LVSS-309-1 LS-LVSS-309-2	↓		
500	160	280	315	LS-LVSS-309-1 LS-LVSS-309-2	↓	↓		
3 stars/hour @ 40°C								LS-LVSS-307~505-2: AC220V
430	132	250	280	↓	↓	LS-LVSS-401-1 LS-LVSS-401-2		
500	160	280	315	↓	LS-LVSS-401-1 LS-LVSS-401-2	LS-LVSS-403-1 LS-LVSS-403-2		
610	200	355	375	LS-LVSS-401-1 LS-LVSS-401-2	LS-LVSS-403-1 LS-LVSS-403-2	LS-LVSS-501-1 LS-LVSS-501-2		
722	220	400	425	LS-LVSS-403-1 LS-LVSS-403-2	LS-LVSS-501-1 LS-LVSS-501-2	LS-LVSS-503-1 LS-LVSS-503-2		
850	280	500	530	LS-LVSS-501-1 LS-LVSS-501-2	LS-LVSS-503-1 LS-LVSS-503-2	LS-LVSS-505-1 LS-LVSS-505-2		
960	315	560	600	LS-LVSS-503-1 LS-LVSS-503-2	LS-LVSS-505-1 LS-LVSS-505-2	-		
1080	355	630	670	LS-LVSS-505-1 LS-LVSS-505-2	-	-		

LS-LVSS-101~117



Designations	3-phase SCR Energy Saving Motor Controller
Current	Size 1 up to 100A
Bypass	Internally Bypassed
Motor Protection	Full I ² T Motor Overload with memory Current limit set at 4.5x to meet IEC standards
Supply Voltage	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45-65 Hz
Standard Duty Rating	Trip Class 10 3x motor current – 23sec, 3.5x motor current – 17sec 5 starts/hour
Frame Sizes	Size 1
Enclosure Type	Up to 100A IP20/NEMA 1 - with finger guard
Terminal Position	Terminal position/spacing to match common contactors and circuit breaker
Terminal Construction	Cage Clamp
Control Voltage	24Vdc & 110/230Vac
Ambient Operating Conditions	-20°C to 50°C UP to 60°C with de rating
iERS Energy Saving Technology	YES
In Delta/6 wire connections	YES
Display Technology	3.5" Colour-TFT Touch Screen
Key pad	Optional full color touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French German, Greek, Italian, Japanese, Korean, Polish, Portuguese Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Output	3x NO programmable output relays 1x NC programmable output relays 3x programmable digital inputs 1x PTC thermistor input 1x 0-10V/4-20mA Analogue input 1x 0-10V/4-20mA Analogue output 1x USB
Communications	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4GB memory, allowing the logging of over 3.5 milli on events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislations	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC, RoHS and WEEE
Standards	CE, CETL, KC
Field Service ability	Firmware upgrade from USB port

Specifications

LS-LVSS-201~205



Designations	3-phase SCR Energy Saving Motor Controller
Current	Size 2 up to 195A
Bypass	Internally Bypassed
Motor Protection	Full I ² T Motor Overload with memory Current limit set at 4.5x to meet IEC standard
Supply Voltage	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45-65 Hz
Standard Duty Rating	Trip Class 10 3 × 23 or 3.5 × 17 5 starts/hour
Frame Sizes	Size 2
Enclosure Type	Up to 195A IP20/NEMA 1 - with finger guard
Terminal Position	Terminal position/spacing to match common contactors and circuit breaker
Terminal Construction	Cage Clamp
Control Voltage	24Vdc & 110/230Vac
Ambient Operating Conditions	-20°C to 50°C UP to 60°C with de rating
iERS Energy Saving Technology	YES
In Delta/6 wire connections	YES
Display Technology	3.5" Colour-TFT Touch Screen
Key pad	Optional fill color touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French German, Greek, Italian, Japanese, Korean, Polish, Portuguese Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Output	3x NO programmable output relays 1x NC programmable output relays 3x programmable digital inputs 1x PTC thermistor input 1x 0-10V/4-20mA Analogue input 1x 0-10V/4-20mA Analogue output 1x USB
Communications	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4GB memory, allowing the logging of over 3.5 milli on events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislations	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC. RoHS and WEEE
Standards	CE, CETL, KC
Field Service ability	Firmware upgrade from USB port

LS-LVSS-301~309



Designations	3-phase SCR Energy Saving Motor Controller
Current	Size 3 up to 500A
Bypass	Internally Bypassed
Motor Protection	Full I ² T Motor Overload with memory Current limit set at 4.5x to meet IEC standard
Supply Voltage	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45-65 Hz
Standard Duty Rating	Trip Class 10 3 × 23 or 3.5 × 17 3 starts/hour
Frame Sizes	Size 3
Enclosure Type	Above 195A IP00/NEMA 1 Optional Finger Guards up to 195A to ensure full IP20 enclosures
Terminal Position	Terminal position/spacing to match common contactors and circuit breaker
Terminal Construction	Plain Busbar
Control Voltage	24Vdc & 110/230Vac (LS-LVSS-301 to LS-LVSS-305) 110Vac or 230Vac (LS-LVSS-307 to LS-LVSS-309)
Ambient Operating Conditions	-20°C to 50°C UP to 60°C with de rating
iERS Energy Saving Technology	YES
In Delta/6 wire connections	YES
Display Technology	3.5" Colour-TFT Touch Screen
Key pad	Optional full color touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French German, Greek, Italian, Japanese, Korean, Polish, Portuguese Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Output	3x NO programmable output relays 1x NC programmable output relays 3x programmable digital inputs 1x PTC thermistor input 1x 0-10V/4-20mA Analogue input 1x 0-10V/4-20mA Analogue output 1x USB
Communications	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4GB memory, allowing the logging of over 3.5 milli on events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislations	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC, RoHS and WEEE
Standards	CE, CETL, KC
Field Service ability	Firmware upgrade from USB port

Specifications

LS-LVSS-401~403



Designations	3-phase SCR Energy Saving Motor Controller
Current	Size 4 up to 722A
Bypass	No Bypass
Motor Protection	Full I ² T Motor Overload with memory Current limit set at 4.5x to meet IEC standard
Supply Voltage	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45-65 Hz
Standard Duty Rating	Trip Class 10 3 × 23 or 3.5 × 17 3 starts/hour
Frame Sizes	Size 4
Enclosure Type	Above 195A IP00/NEMA 1 Optional Finger Guards up to 195A to ensure full IP20 enclosures
Terminal Position	Terminal position/spacing to match common contactors and circuit breaker
Terminal Construction	Plain Busbar
Control Voltage	110Vac or 230Vac
Ambient Operating Conditions	-20°C to 40°C UP to 60°C with de rating
iERS Energy Saving Technology	YES
In Delta/6 wire connections	YES
Display Technology	3.5" Colour-TFT Touch Screen
Key pad	Optional full color touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French German, Greek, Italian, Japanese, Korean, Polish, Portuguese Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Output	3x NO programmable output relays 1x NC programmable output relays 3x programmable digital inputs 1x PTC thermistor input 1x 0-10V/4-20mA Analogue input 1x 0-10V/4-20mA Analogue output 1x USB
Communications	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4GB memory, allowing the logging of over 3.5 milli on events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislations	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC, RoHS and WEEE
Standards	CE, CETL, KC
Field Service ability	Firmware upgrade from USB port

LS-LVSS-501~505

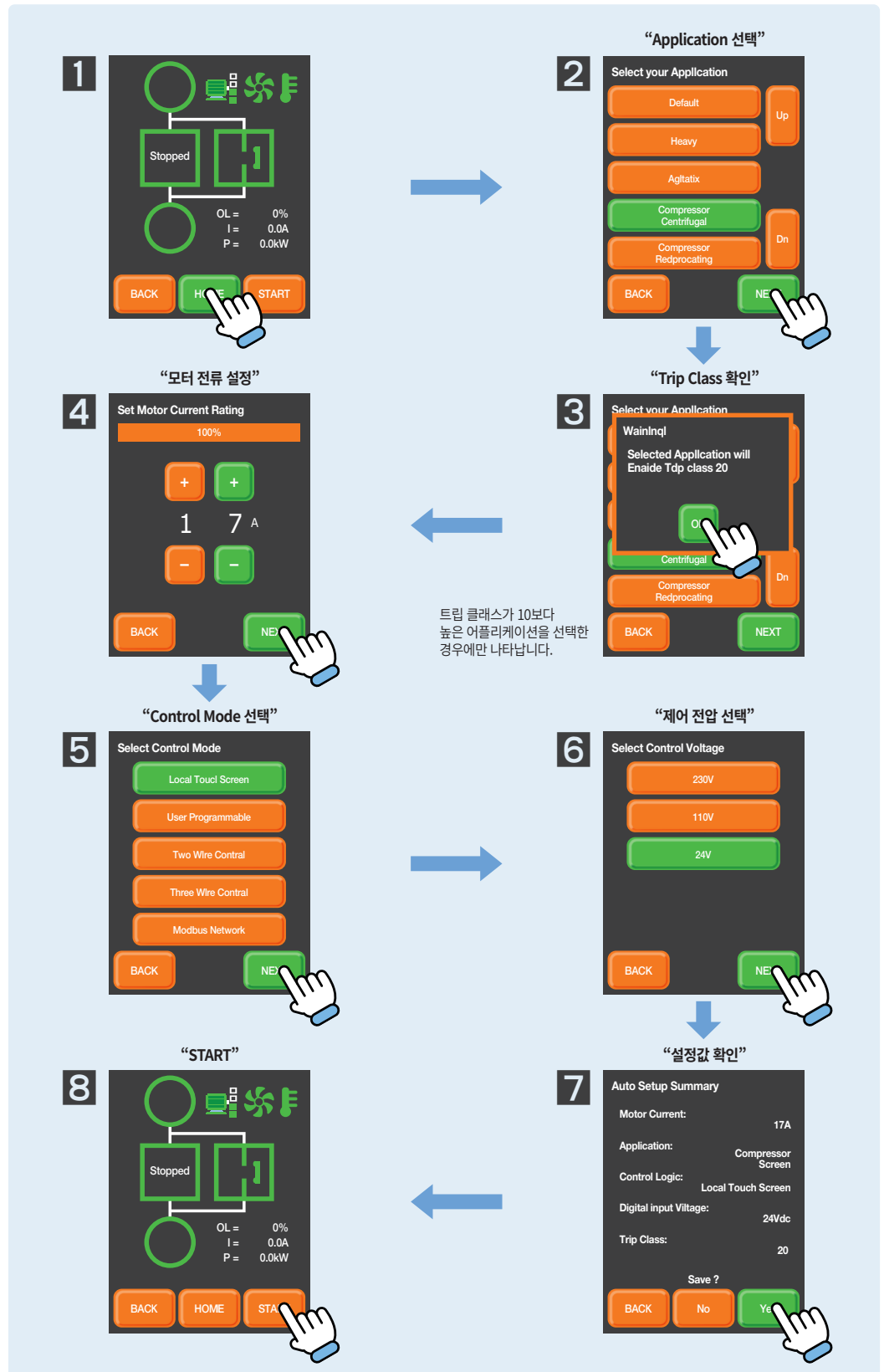


Designations	3-phase SCR Energy Saving Motor Controller
Current	Size 5 up to 1080A
Bypass	No Bypass
Motor Protection	Full I ² T Motor Overload with memory Current limit set at 4.5x to meet IEC standard
Supply Voltage	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45-65 Hz
Standard Duty Rating	Trip Class 10 3 × 23 or 3.5 × 17 3 starts/hour
Frame Sizes	Size 5
Enclosure Type	Above 195A IP00/NEMA 1 Optional Finger Guards up to 195A to ensure full IP20 enclosures
Terminal Position	Terminal position/spacing to match common contactors and circuit breaker
Terminal Construction	Plain Busbar
Control Voltage	110Vac or 230Vac
Ambient Operating Conditions	-20°C to 40°C UP to 60°C with de rating
iERS Energy Saving Technology	YES
In Delta/6 wire connections	YES
Display Technology	3.5" Colour-TFT Touch Screen
Key pad	Optional full color touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French German, Greek, Italian, Japanese, Korean, Polish, Portuguese Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Output	3x NO programmable output relays 1x NC programmable output relays 3x programmable digital inputs 1x PTC thermistor input 1x 0-10V/4-20mA Analogue input 1x 0-10V/4-20mA Analogue output 1x USB
Communications	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4GB memory, allowing the logging of over 3.5 million events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislations	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC, RoHS and WEEE
Standards	CE, CETL, KC
Field Service ability	Firmware upgrade from USB port

옵션품목

옵션품	옵션 형명	옵션 모델	기능(역할)
	Modbus Splitter RJ12 to RJ45	LS-LVSS-026	RJ45 cable을 RJ12 cable로 변환
	Modbus Terminating Resistor RJ45	LS-LVSS-035	Modbus 종단저항기
	Remote Keypad Kit Modbus Master	LS-LVSS-012	원격 디스플레이
	Modbus Splitter RJ12 to RJ45	LS-LVSS-011	Modbus signal 분배기
	Finger Guard kit IP20	LS-LVSS-005 (본체 : LS-LVSS-101~117) LS-LVSS-009 (본체 : LS-LVSS-201~205)	전기 충전부 접촉 방지
	Anybus M40 Ethernet/IP	LS-LVSS-6604	TCP/IP 사용
	Anybus M30 Modbus TCP	LS-LVSS-6223	TCP/IP 사용
	Anybus M30 Profibus DP	LS-LVSS-6270	TCP/IP 사용

셋팅 방법



Application

Application



Pump



Compressor



Chiller



Fan & Blower



Centrifugal Device



Conveyor



Crusher



Extruder



Wind Mill



Bow Thruster



Extractor



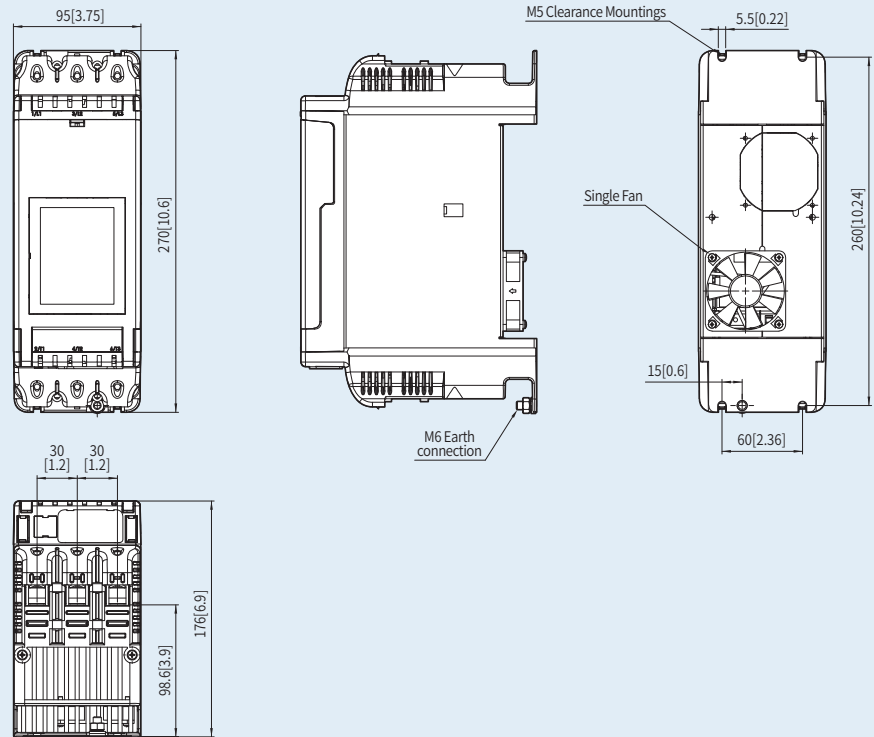
Rubber Machine



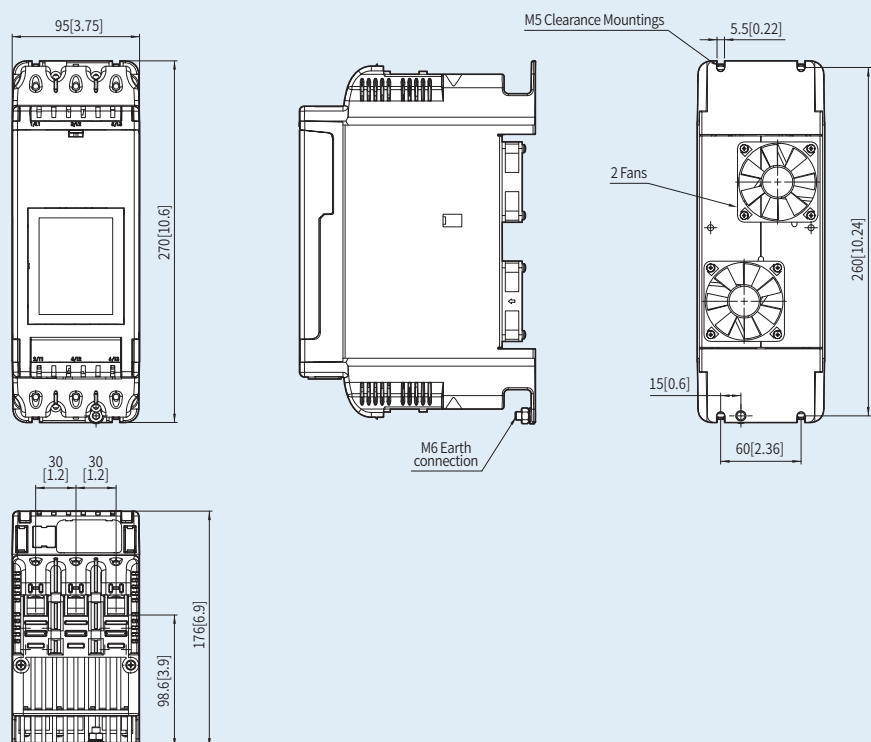
Axial Fan for Tunnel

단위 : mm[inch]

LS-LVSS-101~105



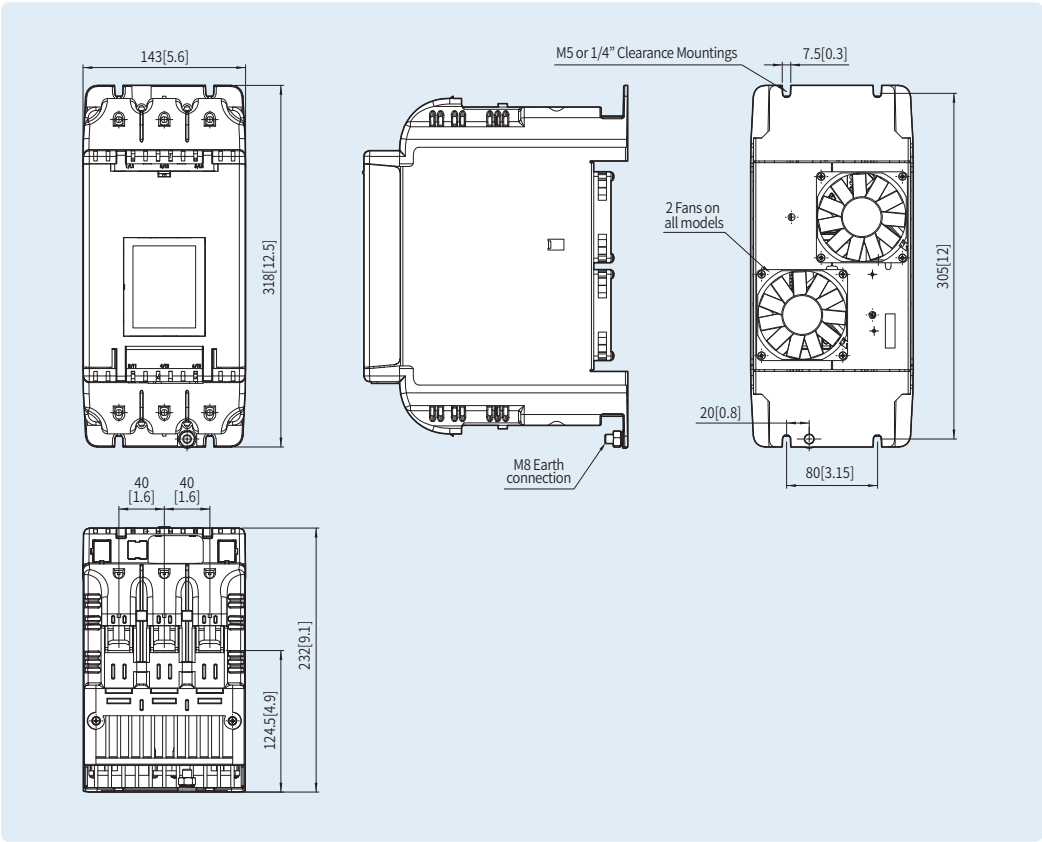
LS-LVSS-107~117



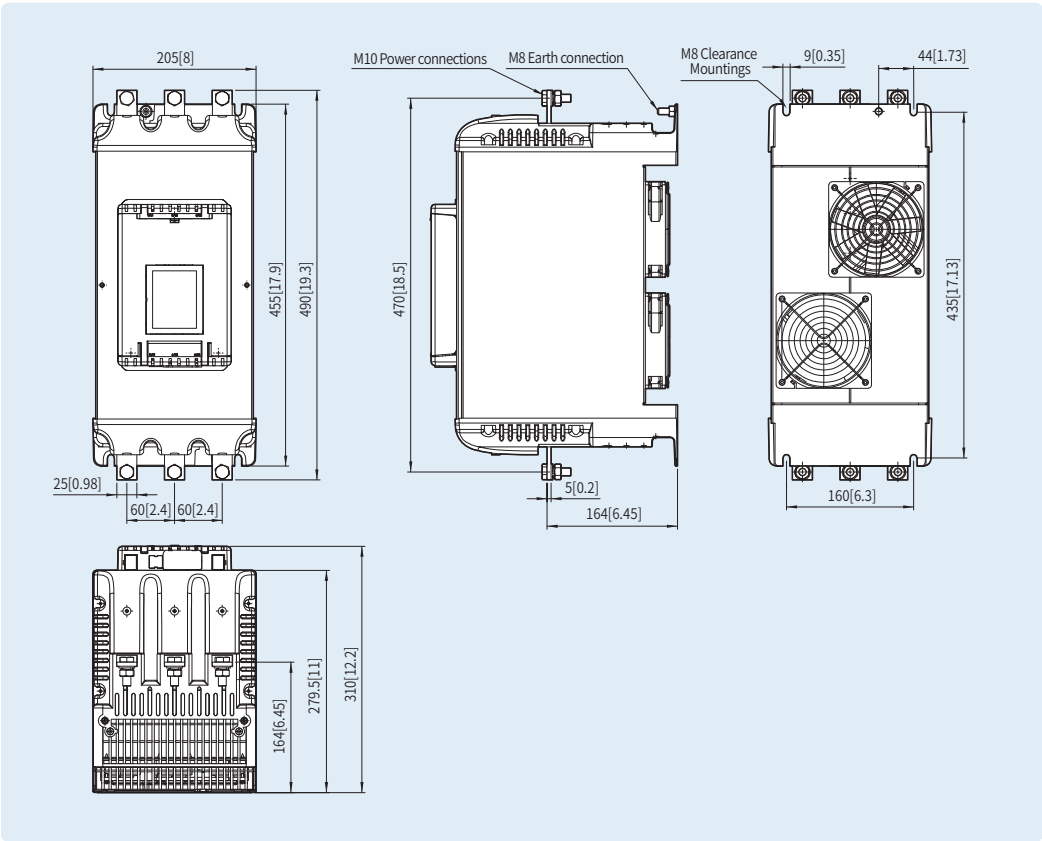
외형치수

단위 : mm[inch]

LS-LVSS-201~205

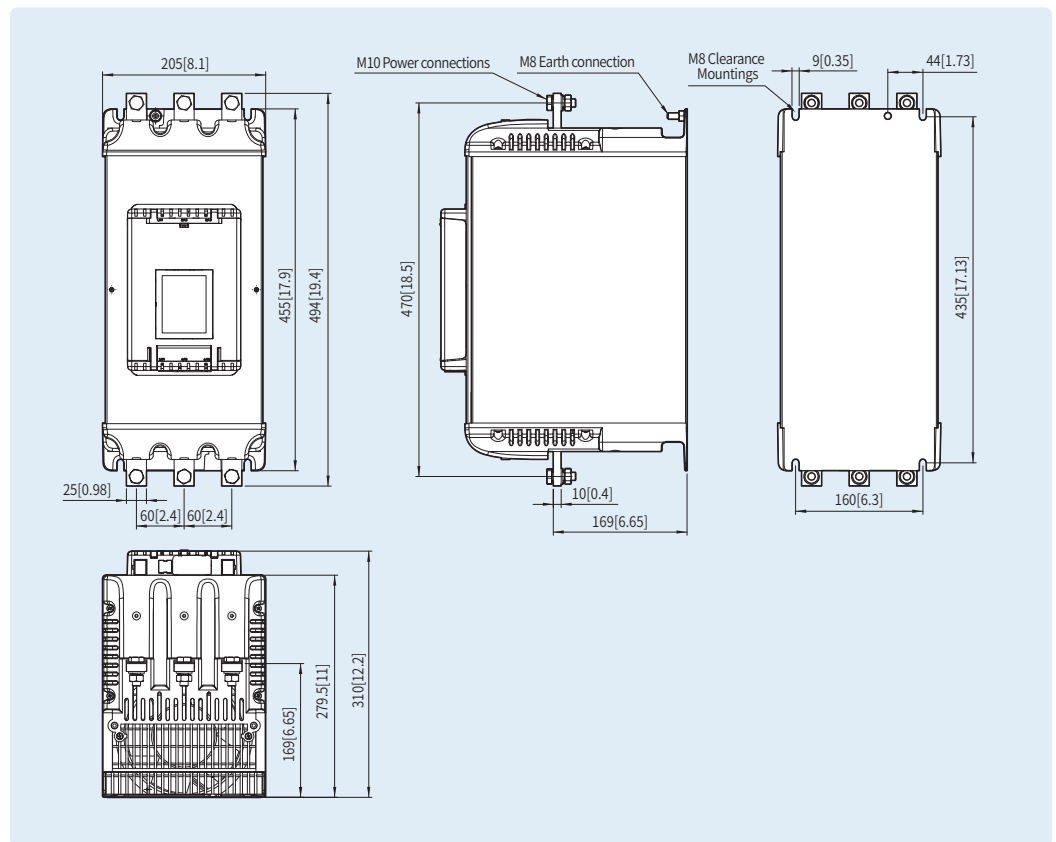


LS-LVSS-301~305

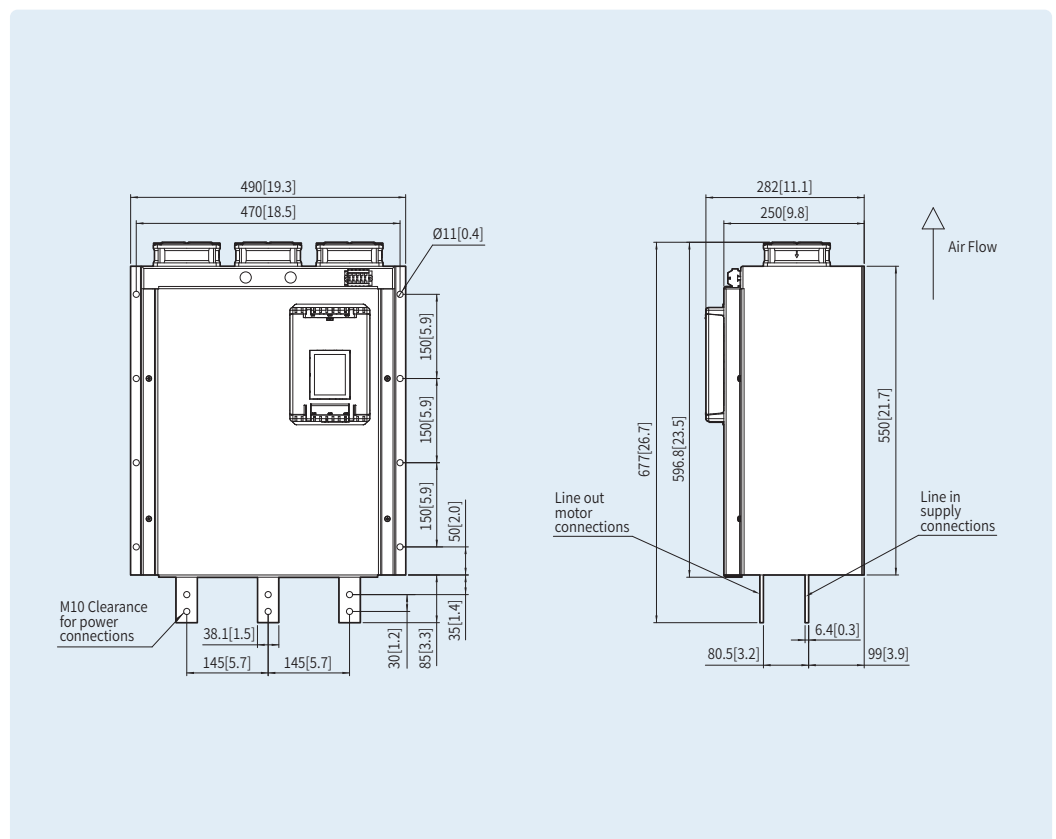


단위 : mm[inch]

LS-LVSS-307~309



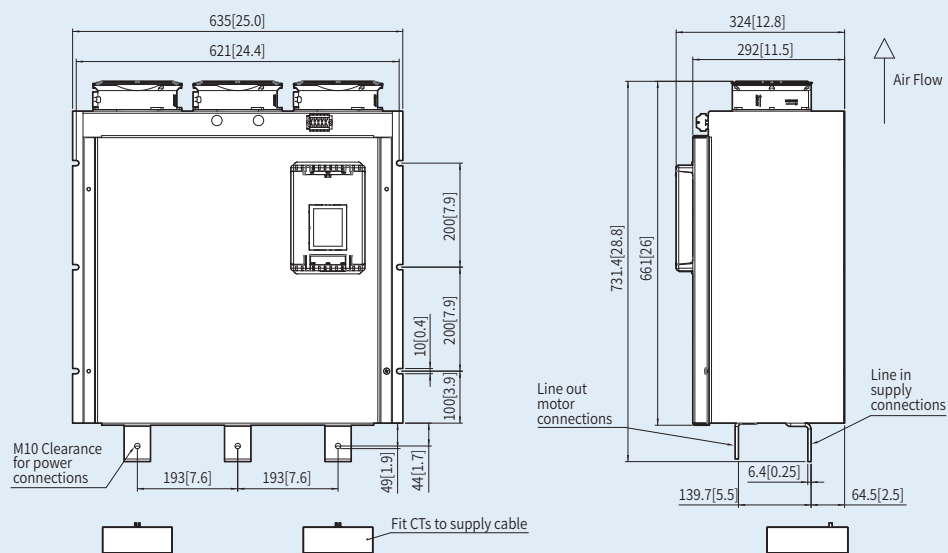
LS-LVSS-401~403

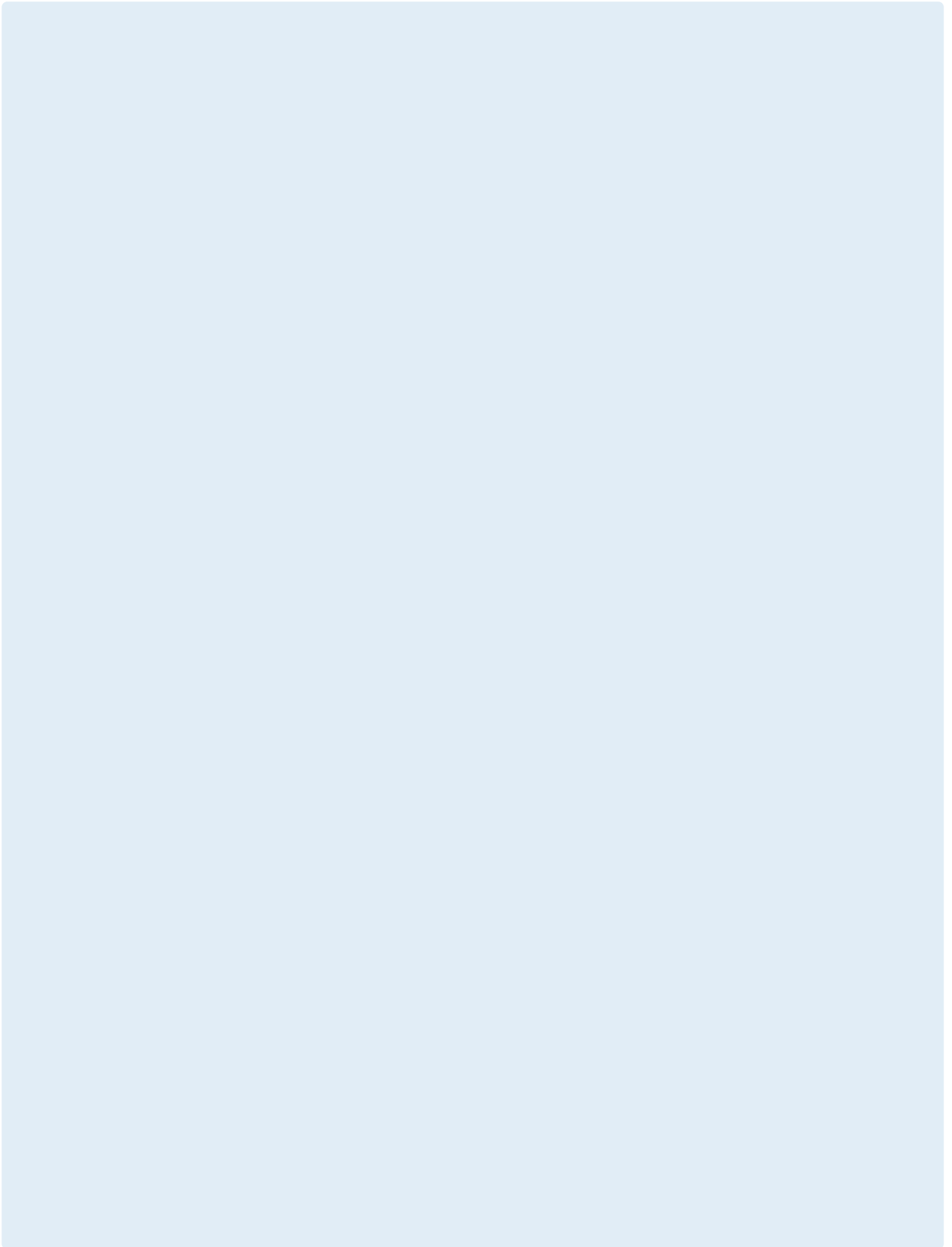


외형치수

단위 : mm[inch]

LS-LVSS-501~505







안전에 관한 주의

- 안전을 위하여 「사용설명서」 또는 「데이터시트」를 반드시 읽고 사용해 주십시오.
- 본 카탈로그에 기재된 제품은 사용온도·조건·장소 등이 한정되어 있으며, 정기점검이 필요하므로 제품구입처나 당사에 문의 후 정확하게 사용해 주십시오.
- 안전을 위해 전기공사·전기배선 등 전문기술을 보유한 사람이 취급해 주십시오.
- 제품 설치 및 배선 시 「사용설명서」 또는 「데이터시트」의 관련 사항을 숙지하시고 제품을 사용해 주십시오.



www.ls-electric.com

■ 본사: 경기도 안양시 동안구 엘엑스로 127번지 (호계동) LS타워

■ 구입문의

• 저압차단기	TEL: (02)2034-4407	FAX: (02)2034-4549
• 고압차단기	TEL: (02)2034-4031	FAX: (02)2034-4549
• 계전·계측기기	TEL: (02)2034-4386	FAX: (02)2034-4549
• 계량기/원격검침	TEL: (02)2034-4408	FAX: (02)2034-4549
• 수배전반	TEL: (02)2034-4738, 4749	FAX: (02)2034-4549
• 부스덕트	TEL: (02)2034-4791, 4724	FAX: (02)2034-4549
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