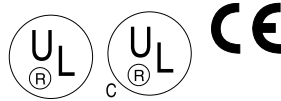


A compact AC drive for applications up to 2 HP



The Reliance SP200 AC drive provides OEMs and users with an excellent choice where size and ease-of-use are the most important considerations for control of three phase induction motors. Typical applications include fans, pumps, conveyors and other small machines where inside panel or inside machine mounting is available.



STANDARD FEATURES

- Compact packaging (5.5" H x 2.8" W x 5.5" D) conserves panel space. Panel or DIN rail mounting without an adapter
- Robust out-of-the-box performance and a carefully chosen parameter set make startups a snap
- Single phase input ratings (up to 1.5 HP) operate on 115V or 230V and produce 230V, three phase output in both cases
- Three phase ratings available in both 230V and 460V
- Feed-through power design for simple wiring of input and output. Also provides an easy retrofit from constant speed to variable speed
- Spring style control terminals for quick and reliable control connections
- Isolated 0 - 10V or 4- 20mA analog inputs (models A and C) for problem free analog connections
- Isolated digital inputs activated by either the drive's own +10V supply or an external 24V supply without the use of an interface card

- Electronic drive and motor protection with diagnostic fault indication for easy troubleshooting
- Finger-safe protected chassis (IP20)
- Built-in MOVs for protection against input voltage transients
- UL listed, C-UL listed and CE marked for global use
- Three different control models to match specific needs:

Model A	Single Channel Analog	for control from one analog signal or a speed pot
Model B	Preset Speed	for up to 8 specific speeds controlled by 3 on/off digital inputs
Model C	Dual Channel Analog	for applications that can take advantage of an operation between two analog signals. Choose from PI, add, or multiply functions

OPTIONAL FEATURES

- Local Keypad - Provides access to settings and operation. Plugs directly onto drive for temporary or permanent use
- CopyCat Keypad - Handheld device provides quick editing and transfer of settings to multiple drives (one at a time). Non volatile memory maintains multiple program sets
- Remote Keypad - Provides access to settings and operation from the outside of an enclosure. Mounts flush to the outside of a panel

KEYPAD OPTIONS

Local Keypad




Use this cost-effective keypad for adjustments and operation directly on the SP200. The keypad can be removed when finished programming to save cost or prevent setting changes. It can also be left installed for permanent access to settings.

Remote Keypad

Use this keypad when you need permanent flush-mounting of a large keypad/display, or NEMA 4 rating for food and beverage industry applications.

CopyCat Keypad

Use the CopyCat keypad when you need to perform efficient set-up of multiple drives with the same settings. The CopyCat keypad can upload, download, and store up to 15 different parameter sets.

Keypad Feature Summary	Local Keypad M/N S20-LK1	Remote Keypad M/N S20-RK1	CopyCat Keypad M/N S20-CK1
			
Key features	<ul style="list-style-type: none"> • Cost-effective • Mounts on drive 	<ul style="list-style-type: none"> • NEMA 4 • Large display • Large keys • Jog key • Direction key • Forward and reverse indicators 	<ul style="list-style-type: none"> • Handheld programming • Stores up to 15 complete parameter sets • Uploads from drive or downloads to drive • User-definable parameter set names • Direct entry of parameter values via numeric keys • Esc key for menu navigation • Jog key • Reverse indicator
Mounting style	Onboard-plugs onto drive	Flush on panel (with 1, 3, or 5 meter cable)	Handheld (with 1, 3, or 5 meter cable)
Display type	4-character LED	Large 4-character LED	2-row, 16-column backlit LCD
Display content	<ul style="list-style-type: none"> • Parameter values (format: P-00) • Display values (format: D-00) 	<ul style="list-style-type: none"> • Parameter values (format: P-00) • Display values (format: D-00) 	<ul style="list-style-type: none"> • Parameter name and number • Display value name and number • Fault code and name • Upload/download status
Status indicators	<ul style="list-style-type: none"> • Run • Program 	<ul style="list-style-type: none"> • Run • Program • Reverse • Forward 	<ul style="list-style-type: none"> • Run • Program • Reverse • Load

Keypad Dimensions

Keypad	Dimensions mm (in.)		
	Height	Width	Depth
Local S20-LK1	n/a ⁽¹⁾	n/a ⁽¹⁾	n/a ⁽¹⁾
Remote S20-RK1	168.2 (6.62)	128.6 (5.06)	34.23 (1.35)
CopyCat S20-CK1	129.5 (5.10)	89.69 (3.53)	24.23 (0.95)

(1) The Local keypad mounts onto the drive and fits within the drive dimensions.

Remote and CopyCat Cables

Order cables for the Remote and CopyCat keypads separately. The same cables can be used for both keypads.

Cable M/N	Cable Length
S20-KC1R	1 meter

Keypad Instruction Manuals

Keypad	Instruction Manual
Local S20-LK1	D2-3418 (SP200 Quick Reference)
	D2-3408 (SP200 Instruction Manual)
Remote S20-RK1	D2-3431
CopyCat S20-CK1	D2-3437

ADJUSTABLE FEATURES

Analog Offset and Gain (models A and C)
 Process Operations - P1, add, or multiply (model C)
 8 Preset Speeds (model B)
 Minimum and Maximum Speeds (0-240 Hz)
 2 Acc and Dec Rates (0-600 sec.)
 2 and 3 Wire Remote Control Modes
 3 Stop Modes: Ramp, Coast, DC Injection
 Automatic Torque Boost
 Current Limit
 Configurable Input:
 jog, alternate speed reference, coast stop, 2nd acc/
 dec, reverse (model C)
 Configurable Output:
 fault, run, at speed, above speed, above current
 Scaleable Speed Display
 V / Hz Settings
 Auto Restart (0-10 attempts)
 Reverse Lockout
 Program Password
 Avoidance Frequency and Band
 Carrier Frequency (2-8 kHz, derating required > 2 kHz)

POWER RATINGS

HP (kW)	Voltage	Input Current	Output Current	Watts Loss
2 (1.5)	1Φ 230 V in 3Φ 230 V out	14.3	7.0	75
1/2 (0.37)	3Φ 230 V	2.7	2.3	25
1 (0.75)		5	4.2	40
1/2 (0.37)	3Φ 460V	1.5	1.3	25
1 (0.75)		2.4	2.0	30

ANALOG INPUT CHARACTERISTICS

Resolution: 8 bit (0.4%)
 Impedance: 0 - 10 V input ≥ 100 kΩ
 4 - 20 mA input ≈ 250Ω

DIGITAL INPUT CHARACTERISTICS

Rated voltage (active high):
 10 to 24 VDC ± 10%
 Load (each): min of 10 mA at 10 V,
 max of 20 mA at 24 V
 Maximum off-state level: 2mA/1.5 V

SERVICE CONDITIONS

0 to 50° C at 95% relative humidity,
 non condensing and 3300 ft
 AC Input Tolerance: 47 to 63 Hz
 230 V Ratings: 200 - 240 VAC ± 10%
 460 V Ratings: 380 - 460 ± 10%

INSTRUCTION MANUALS

Quick Start Guide: D2-3418
 Instruction Manual: D2-3408

APPLICATION DATA

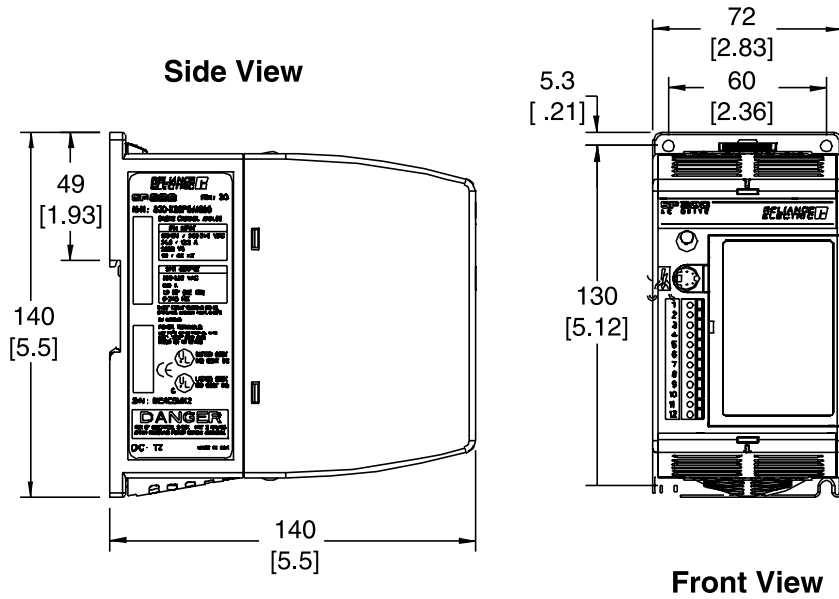
Maximum Load: 150% for 60
 seconds, 200% for 10 seconds
 Control Ride Through: 100 msec

CONTROL MODEL TERMINAL FUNCTIONS

INPUTS OUTPUTS

Control Terminal	Model A Single Channel Analog	Model B Preset Speed	Model C Dual Channel Analog	
1	Shield / Common	Shield / Common	Shield / Common	
2	+ 10 VDC	+ 10 VDC	+ 10 VDC	
3	Function Loss / Reset	Function Loss / Reset	Configurable Input (Funct. Loss)	
4	Forward Run	Forward Run	Forward Run	
5	Reverse Run	Reverse Run	0 - 10 VDC Analog Input	
6	Configurable Input (Jog)	Preset Speed	4 - 20 mA DC Analog Input	
7	0 - 10 VDC Analog Input	Preset Speed	Analog Input Common	
8	4 - 20 mA DC Analog Input	Configurable Input (Preset Speed)	0 - 10 VDC Analog Input	
9	Analog Input Common	Common	4 - 20 mA DC Analog Input	
10	Relay N. C. Contact	Relay N. C. Contact	Analog Input Common	
11	Relay Common	Relay Common	Relay Common	
12	Relay N.O. Contact	Relay N.O. Contact	Relay N.O. Contact	

PRODUCT DIMENSIONS



- Top and bottom clearance is 38.1 mm [1-1/2 in].
- Side clearance is 25.4 mm [1 in] on the right if installation /removal of the keypad is required.
- Weight is .5 kg [1.1 lb.]

SP200 DRIVE TO MOTOR LEAD LENGTHS

Reactor	Drive Rating		1000 V Motor Limit		SP200 Drive Limit															
	Input Volts	HP (kW)	Shielded Cable or Wires in Conduit																	
			2 kHz				4 kHz				6 kHz				8 kHz				Unshielded Cable	
ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	
None	120/240	0.5 (0.37)			250	76	250	76	250	76	200	61	600	183	600	183	600	183	600	183
		1.0 (0.75)			500	152	500	152	400	122	300	91	600	183	600	183	600	183	600	183
		1.5 (1.1)			600	183	600	183	500	152	300	91	600	183	600	183	600	183	600	183
	460	2.0 (1.5)			600	183	600	183	500	152	300	91	600	183	600	183	600	183	600	183
		0.5 (0.37)	50	15	100	30	100	30	100	30	90	27	175	53	175	53	175	53	150	46
		1.0 (0.75)	25	8	120	37	100	30	100	30	100	30	300	91	300	91	300	91	300	91
	2.0 (1.5)	20	6	220	67	180	55	180	55	100	30	400	122	400	122	400	122	400	122	
3% at Drive	120/240	0.5 (0.37)			400	122	300	91	300	91	100	30	600	183	600	183	600	183	600	183
		1.0 (0.75)			500	152	300	91	300	91	200	61	600	183	600	183	600	183	600	183
		1.5 (1.1)			600	183	400	122	300	91	200	61	600	183	600	183	600	183	600	183
	460	2.0 (1.5)			600	183	400	122	300	91	200	61	600	183	600	183	600	183	600	183
		0.5 (0.37)	15	5	120	37	100	30	100	30	90	27	200	61	200	61	200	61	150	46
		1.0 (0.75)	40	12	180	55	140	43	100	30	100	30	600	183	600	183	600	183	400	122
	2.0 (1.5)	80	24	220	67	200	61	170	52	130	40	600	183	600	183	600	183	200	183	
3% at Motor	120/240	0.5 (0.37)			300	91	280	85	280	85	280	85	600	183	600	183	600	183	600	183
		1.0 (0.75)			600	183	600	183	500	152	400	122	600	183	600	183	600	183	600	183
		1.5 (1.1)			600	183	600	183	500	152	300	91	600	183	600	183	600	183	600	183
	460	2.0 (1.5)			600	183	600	183	500	152	300	91	600	183	600	183	600	183	600	183
		0.5 (0.37)	300	91	100	30	100	30	100	30	90	27	175	53	175	53	175	53	150	46
		1.0 (0.75)	300	91	120	37	100	30	100	30	100	30	300	91	300	91	300	91	300	91
	2.0 (1.5)	300	91	200	61	200	61	200	61	170	52	400	122	400	122	400	122	400	122	

Three-Phase Input 200 V-240 V
Three-Phase Output 200 V-240 V

Three-Phase Input 380 V-460 V
Three-Phase Output 380 V-460 V

Includes:

- Protected Chassis (IP20) Enclosure
- Blank Face
(Local Keypad Sold Separately - See Options)
- Multi-Language Quick Start Guide



HP (kw)	Maximum Continuous Output Amps	Input/Output Power Ratings	Model Number (Prefix plus Model Suffix without Dash ⁽¹⁾)			
			Prefix	Model A Suffix	Model B Suffix	Model C Suffix
2 (1.5)	7	Input: Single-Phase 200-240 V Output: Three-Phase 200-230 V	S20-Y07P0	A1000	B1000	C1000
1/2 (0.37)	2.3	Input: Three-Phase 200-240 V	S20-202P3	A1000	B1000	C1000
1 (0.75)	4.2	Output: Three-Phase 200-230 V	S20-204P2			
1/2 (0.37)	1.3	Input: Three-Phase 380-440 V	S20-401P3	A1000	B1000	C1000
1 (0.75)	2	Output: Three-Phase 380-460 V	S20-402P0			

(1) Sample Model Number: S20-202PA1000

OPTIONS

Local Keypad

Use this tool for adjustments and operation inside a panel or machine during startup. This keypad attaches directly to the SP200 and can be removed when programming is finished to save cost or prevent setting changes. It can also be left installed for permanent access to settings.



Functions Provided:

- Parameter Adjustments
- Password Protection
- Start
- Stop
- Fault Reset
- Status Monitoring
- Fault Code Viewing

Model No. S20-LK1

Remote Keypad

Provides access to settings and operation from outside of an enclosure. Mounts flush to the outside of a panel.



Functions Provided:

- Parameter Adjustments
- Password Protection
- Start
- Stop
- Fault Reset
- Status Monitoring
- Fault Code Viewing

Model No. S20-RK1

CopyCat Keypad

Use this hand-held tool for the most efficient method of setting up multiple units with the same settings. This tool will download, upload, and store multiple parameter sets. Also supports operator control functions.



Functions provided:

- Store Multiple Parameter Sets
- Parameter Adjustments
- Download Parameter Settings
- Upload Parameter Settings
- Start Stop
- Fault Reset
- Status Monitoring
- Fault Code Viewing

Model No. S20-CK1

CopyCat and Remote Keypad Cables

Model Number	Cable Length
S20-KC1R	1 Meter

Note: Cables must be ordered separately. Not provided with keypads.

OPTIONS (CONTINUED)

Input Mains Filter

- For reduction of line side high frequency conducted emissions.
- Tested and certified for use with the SP200 to meet European EMC directive 89/336/EEC (standards EN5008-1, EN5008-2 and parts of EN61800-3 for EMC included).
- Meets Class A without shielded metal enclosure, Class B with shielded metal enclosure.
- Piggyback design eliminates the need for additional panel space because the filter can be mounted directly between the SP200 and the panel. Side-by-side mounting is also possible where enclosure depth is limited.



HP (kW)	SP200		Input Mains Filter ⁽²⁾		
	Model Number	Model Number	Dimensions in. (mm)		
			Height	Width	Depth
Single-Phase 200-240 V Input ⁽¹⁾					
1/2 (0.37)	S20-X02P3_100	S20-MF1-Y014	7.17(182)	2.95(75)	1.83(47.5)
1 (0.75)	S20-X04P2_1000				
1-1/2 (1.1)	S20-X06P0_000				
2 (1.5)	S20-Y07P0_1000				

(1) Filters for use on 115V input are not available at this time.

(2) Contact Reliance Electric for availability.

Notes