IronHorse ACM Series Accessories

Accessories Available for ACM Drives

ACM Drives Available Software and Accessories	
Accessory	***Reference***
Remote Keypad: ACM-KPD	Remote Keypad on page tIHA-18
Fuses/Circuit Breakers	Fuses/Circuit Breakers on page tIHA-20
EMI Filters	High Performance EMI Input Filters on page tIHA-21
Braking Resistors	Braking Resistors on page tIHA-23
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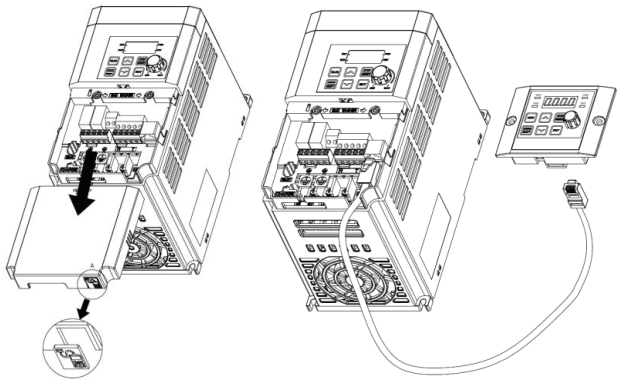
Remote Keypad

The ACM-KPD keypad allows for remote mounting of the standard keypad functionality for the ACM series drives.
The keypad can be mounted on an external panel or enclosure and connected to the drive by standard ethernet patch cable.

ACM Remote Keypad			
Part Number	***Price***	***Description***	***Drawing Links***
ACM-KPD	$49.00	IronHorse ACM series remote keypad, for use with IronHorse ACM series AC drives. (1) 9.8ft/3m Ethernet patch cable included.	PDF



ACM-KPD

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Fuses/Circuit Breakers

Protection devices are essential to prevent damage to the ACM drive and application equipment. Please use the fuse specification chart below to select fuses that are applicable to each ACM drive. Only use UL-certified 600V fuses which comply with your local regulations.

Drive	Drive Voltage	HP (HD)	Fuse Amps (Class H or RK5)	Suggested ADC Class RK5 Fuses	Circuit Breaker	
					Size (A)	Model*
ACM-10P2	100–120 VAC	0.25	15	ECSR15	15	GCB100S-2FF15LL
ACM-10P5		0.5	20	ECSR20	15	GCB100S-2FF15LL
ACM-11P0		1.0	30	ECSR30	20	GCB100S-2FF20LL
ACM-20P1	200–240 VAC	0.125	5	ECSR5	15	GCB100S-2FF15LL
ACM-20P2		0.25	5	ECSR5	15	GCB100S-2FF15LL
ACM-20P5		0.5	10	ECSR10	15	GCB100S-2FF15LL
ACM-21P0		1.0	10	ECSR10	15	GCB100S-2FF15LL
ACM-22P0		2.0	15	ESCR15	15	GCB100S-2FF15LL
ACM-23P0		3.0	20	ECSR20	20	GCB100S-2FF20LL

*** Gladiator molded case circuit breaker available at AutomationDirect.com**

CAUTION: ONLY USE 600V CLASS H OR RK5, UL LISTED INPUT FUSES AND UL LISTED CIRCUIT BREAKERS. SEE THE TABLE ABOVE FOR THE CURRENT RATINGS FOR FUSES AND CIRCUIT BREAKERS.
MAXIMUM ALLOWED PROSPECTIVE SHORT-CIRCUIT CURRENT AT THE INPUT POWER CONNECTION IS DEFINED IN IEC 60439-1 AS 100 kA. DEPENDING ON THE SELECTED MCCB, THE ACN SERIES IS SUITABLE FOR USE IN CIRCUITS CAPABLE OF DELIVERING A MAXIMUM OF 100 kA RMS SYMMETRICAL AMPERES AT THE DRIVE'S MAXIMUM RATED VOLTAGE.

GLADIATOR MOLDED CASE CIRCUIT BREAKERS WILL PROVIDE THESE SHORT-CIRCUIT CURRENT RATINGS:
- 120 VAC DRIVES: 65 kA AT 60 HZ. 50 kA AT 50 HZ
- 230 VAC DRIVES: 65 kA AT 60HZ. 50 kA AT 50 HZ

IronHorse ACM Series Accessories

High Performance EMI Input Filters

The optional accessories below are available for use with the ACM drive. Selection of these accessories is application specific and may improve drive performance. Additional information regarding filter installation and operation is available in the AutomationDirect white paper, "Applied EMI/RFI Techniques."

Drive	Drive Voltage	HP (HL)	Roxburgh Filters Chassis Type 1ph *1	Roxburgh Max Performance Filters *2
ACM-10P2	100–120 VAC	0.25	RES90F10	MIF10
ACM-10P5		0.5	RES90F16	MIF16
ACM-11P0		1	RES90S30	MIF23
ACM-20P1	200–240 VAC	0.125	RES90F06	MIF06
ACM-20P2		0.25	RES90F06	MIF06
ACM-20P5		0.5	RES90F10	MIF10
ACM-21P0		1.0	RES90F16	MIF16
ACM-22P0		2.0	RES90S20	MIF23
ACM-23P0		3.0	RES90S30	MIF330B

***1 -EMI rating for motor cable length: C2 to 75ft, C1 to 30ft**
***2 -EMI rating for motor cable length: C2 to 150Ft, C1 to 75ft**

IronHorse ACM Series Accessories

Line Reactors/Voltage Time Filters

Installing an AC Line Reactor on the input side of an AC motor drive can increase line impedance, improve the power factor, reduce input current, increase system capacity, and reduce interference generated from the motor drive.

Installing a load reactor or voltage time filter on the drive's output side can increase the high-frequency impedance to reduce the dV/dT and terminal voltage to protect the motor. Use output filters if the motor cable length exceeds 100ft or any applications where reduced reflected waves is needed.

ACM Line/Load Reactors & AC Output Filters

Drive	*Voltage*	*HP*	*Input (Amps)*	*Output FLA 3ph (Amps)*	*AC Input Line Reactor*	*AC Output Load Reactor*	*AC dVdT Output Filter **
ACM-10P2	100–120 VAC	0.25	3.7	1.4	LR2-10P2-1PH-A	LR2-20P2	VTF-46-DE
ACM-10P5		0.5	7.4	2.4	LR2-10P5-1PH-A	LR2-20P5	VTF-246-CFG
ACM-11P0		1	13.9	4.2	LR2-11P5-1PH	LR2-21P0	VTF-24-FH
ACM-20P1	200–240 VAC	0.125	1.0	0.8	LR2-20P2-1PH	LR2-20P2	VTF-46-DE
ACM-20P2		0.25	1.8	1.4	LR2-20P2-1PH	LR2-20P2	VTF-46-DE
ACM-20P5		0.5	3.7	2.4	LR2-20P5-1PH	LR2-20P5	VTF-246-CFG
ACM-21P0		1.0	7.1	4.2	LR2-21P5	LR2-21P0	VTF-24-FH
ACM-22P0		2.0	13.6	7.5	LR2-22P0-1PH	LR2-22P0	VTF-246-HKL
ACM-23P0		3.0	18.7	11.0	LR-27P5	LR-25P0	VTF-24-JL

*** NEMA 1 filter versions are available. Use the same part number with suffix -N1.**

Braking Resistors

Dynamic braking absorbs the motor regeneration energy when the motor is decelerated faster than it would if it was allowed to coast to a stop. The regeneration energy is dissipated by braking resistors. Frame C drives have the braking function built in. The recommended open type or NEMA 1 type brake resistors available at AutomationDirect for each drive model are listed in the table below.

Brake Resistors

Voltage	Drive	Drive Power (HP)	Drive Braking Capacity-Max Torque			150% Braking Torque @ 5% Duty Cycle					
						Open Type Resistors			NEMA1 Resistors with Thermal Switch		
			Minimum Resistor	Max Total Brake Current (A)	Peak Power (kW)	ADC Part Number	Qty	Total Brake Current (A)	ADC Part Number	Qty	Total Brake Current (A)
120 VAC	ACM-11P0	1.0	120.0	3	0.15	GS-BR-080W200	1	1.9	BR-N1-240W150	1	2.6
230 VAC	ACM-22P0	2.0	60.0	6	0.3	GS-BR-200W091	1	4.2	BR-N1-280W50	1	7.8
	ACM-23P0	3.0	50.0	7	0.4	GS-BR-300W070	1	5.4	BR-N1-280W50	1	7.8

Note: Where noted in resistor quantity, S = series, P = parallel

Brake Wiring

Refer to the diagrams below for examples on how to wire each possible configuration.

Drive + 1 Resistor or NEMA1 Resistor: