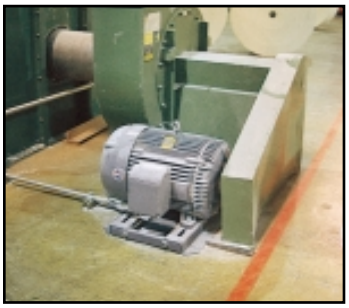
BALDOR®
MOTORS AND DRIVES

Series 15H Inverter

Series 15H Applications



Centrifugal Fan – The Baldor inverter is used to adjust the CFM (and associated pressure) of a fan. Typically, in the past, inlet vanes and outlet dampers have controlled air flow. These techniques are effective and well accepted, but not very energy efficient. With the Baldor inverter – vanes, dampers,actuators and their associated maintenance may be eliminated. Additionally and most importantly, power consumption is decreased by the cube of the speed decrease. This means a potential for tremendous energy savings. Simple control of speed through the process follower input allows "closed loop" control of your air flow. We have also included 3 skip frequencies to avoid those "critical speed bands" that might cause excessive vibration.

Conveyor – Baldor's inverter is the perfect solution to control the speed of a conveyor. Inverters are used for different products run on one conveyor, various processes, different shifts, etc. Control of speed can be with a potentiometer, a process follower or simple switch closures (with up to 15 preset speeds)! Built into the control is dynamic braking to allow the operator to "ramp down" the conveyor speed instead of just coasting down. Also, the control will allow full torque at low speeds through our built in auto torque boost. We have also included an "s-curve" for an easy start and landing during acceleration and deceleration. A great help to keep productivity up, and reduce scrap.

Photo courtesy of Goulds Pumps

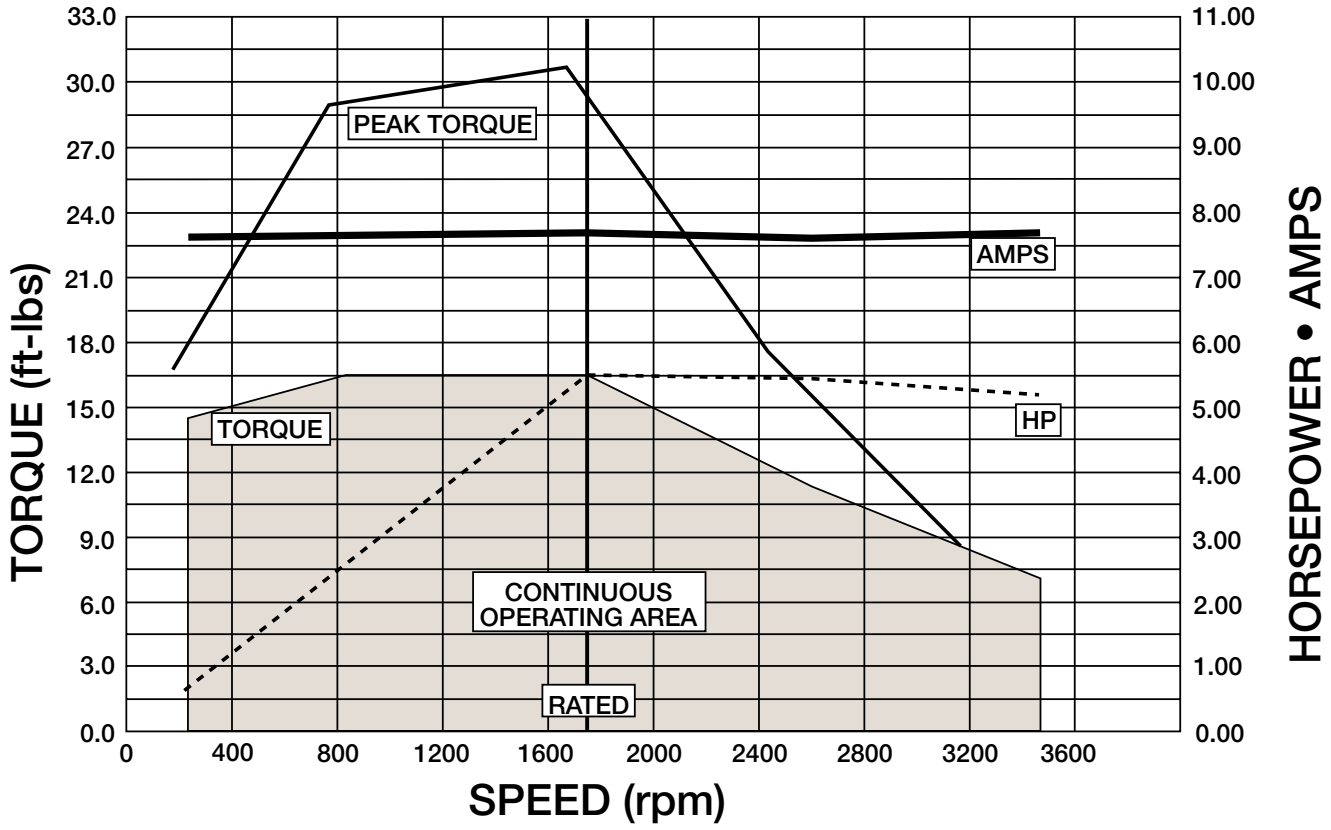
Pump – In Baldor's tradition of being a value supplier of energy efficient motors – Baldor's inverter includes several different "square reduced" volts/hertz curves. This allows the drive to operate close to the pumps output requirements - an absolute energy saver for variable flow applications. With the Baldor inverter, throttling valves can be eliminated and flow controlled from adjustable motor speed. With the adjustable acceleration time (up to 3600 seconds), water hammer can be significantly reduced if not entirely eliminated. The mechanical stresses in your pump and motor will also be greatly reduced. Additionally, inrush current associated with across-the-line starts can be dramatically reduced. Once again, simple control through the keypad, potentiometer, or process follower (0 - 10VDC, 0 - 5VDC or 4-20 mA) input is available.

Mixer – Baldor's Series 15H inverter includes many features that make it ideal for mixing applications. We include the ability to control speeds through a process follower, the keypad or switch closures for various speeds. Included is a minimum speed so the operator cannot turn the speed down below a set value, to keep the mixture from "setting up". Adjustable current limit will trip off the drive at a set torque (related to viscosity) level. High speeds for very fluid materials (up to 7200 rpm or more) are possible! You can even read current on the keypad and use it as a determination of viscosity.

Packaging Equipment – (Typically constant torque applications) – Baldor's Series 15H inverter provides wide constant torque speed ranges with its superior torque boost and the potential for changing base speed beyond 60 hertz for applied motors. The process following feature allows a master controller to control the entire process. Also, the analog output can be tied into the analog input of another control for leader/follower applications.

Matched Performance™

ID15H405-E Control
IDM3665T Motor 5HP



Matched Performance™ is Baldor's solution to the concern, "what kind of constant torque and constant horsepower speed range will I get with this inverter"? And, "what happens if I use a fan cooled motor, an open drip proof motor or a blower cooled motor, etc."? Baldor has gone beyond the (2:1, 6:1, 10:1) ratio type answers and has documented actual laboratory dynamometer testing.

At the heart of these tests is the continuous operating constant torque range. This range of values show how much torque can be continuously generated without exceeding a Class F temperature rise. This holds true even with the Class H insulated inverter and vector motors.

The horsepower curve is simply the horsepower representation of the constant torque test.

Peak torque is the maximum amount of torque the Series 15H inverter and the specified motor can produce. The limit may be breakdown torque of the motor or it may be the control's current limit. This torque can be used for momentary overloads and/or for acceleration/deceleration.

Each test is performed by Baldor's own testing laboratory using state-of-the-art dynamometers, thermocouples and digital power measuring equipment. A typical matched performance test requires 2 - 4 days of continuous testing. This painstaking effort is another example of Baldor's commitment to the drives business and to making our products easy to use.

The Baldor Keypad

Baldor has developed a keypad which will allow the operator to enjoy the flexibility expected in today's controls and the ease of operation you have always hoped to have. Baldor includes twelve keys on the keypad. The keys depress so you "feel" that you have pushed them. We have also included a 32 character English "alpha-numeric" display. You don't have to be a detective to know what you are doing - the display helps you whether you are operating, programming or monitoring. Keypads supplied on NEMA 1 and NEMA 4 controls carry a NEMA 4X rating when remote mounted. The real advantage in this keypad is that it's easy to operate and is used on a variety of Baldor controls.

JOG

Indicator Lights

(JOG) – Green Lamp lights when JOG Speed is active.
(FWD) – Green Lamp lights when FWD direction is commanded.
(REV) – Green Lamp lights when REV direction is commanded.
(STOP) – Red Lamp lights when motor STOP is commanded.

LCD DISPLAY

Displays control status including LOCAL or REMOTE operation, motor direction command, set value of each parameter/function, monitoring values such as output frequency and current, also displays fault conditions and log.

JOG

Used to call up preprogrammed JOG speed.

FWD

Used to initiate a forward direction run of the motor.

REV

Used to initiate a reverse direction run of the motor.

STOP

Used to initiate a motor stop command.

LOCAL

Used to toggle between LOCAL and REMOTE operation.

DISP

Depressing this key changes the displayed control status. Also used to bring the lower block programming menu back to the display mode.

PROG

Used to access the block programming area.

UP

Used to change the display parameter or parameter value up one increment.

ENTER

Used to take the block programming menu down one level while saving any changes.

SHIFT

Used to move the blinking cursor over one space for each push of the SHIFT key.

DOWN

Used to change the display parameter or parameter value down one increment.

RESET

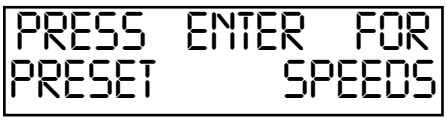
Used to initiate a logical reset after a fault condition and to take the block programming menu up one level.

Series 15H Features

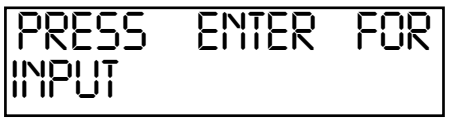
Removable Keypad
The Baldor keypad is designed to be removed from the main control and mounted up to 100 feet away. This will allow the control to be mounted in a convenient location, and the keypad near the operator for ease of use.

English Display
The keypad displays both the operating conditions and the programming steps in easy to follow English. This eliminates the need to look up parameter numbers, program the wrong setting and all the other "easy" mistakes when working with codes.

Single Function
Each key has one function.There is not a whole set of "second operations" that each key can perform confusing the operator.

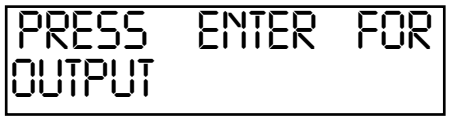


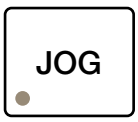
Block Programming
It is easy to adjust the control. Most controls force the operator to scroll through every parameter to get to the one desired. With block programming, the adjustments are in blocks of like adjustments. For example, if you wanted to adjust a preset speed, you would find the block that says: Press ENTER for preset speeds. If you didn't want a preset speed your arrow keys take you to the next block of adjustments.

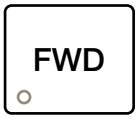


Input Terminals
The terminal connections allow control of the drive from a potentiometer (power provided), a set point controller (PID) through analog input or a PLC (or switch closures) for discrete preset speeds.

Output Terminals
The control provides two programmable analog (0 - 5VDC) outputs. These outputs can be used to run meters or as an input to other controls for "leader/follower" applications. The control also provides two optically isolated discrete outputs along with two Form C relay outputs. The opto's are powered by a 5 - 30VDC power supply, and the relays are capable of switching up to 230VAC. The outputs are programmable for settings such as Ready, At Speed, Zero Speed, Reverse, Fault, etc.







LED'S On Action Keys
There is one LED on each of the following: JOG, FWD, REV and STOP. These LED's are "ON" whenever the COMMAND is active. When you command FORWARD - the LED in the FWD key comes on (STOP and REV are off). These LED'S are still active when you are controlling from the terminal strip, plc, switch closures, etc. The active LED lets the operator know the command has been received and accepted (no broken wires or dirty contacts).

Quad Ratings

Why Quad Ratings? With Quad Rating each control can be setup to operate in one of four distinct output operating zones. The zones are defined by the PWM frequency, continuous output current, and peak output current. The control may also have different horsepower ratings depending on the selected operating zone. By selecting the desired Operating Zone the control will automatically set the PWM frequency, continuous current, and peak current to the proper values for the desired operating zone. The available Operating Zones are Standard PWM Constant Torque, Standard PWM Variable Torque, Quiet PWM Constant Torque, and Quiet PWM Variable Torque. No need to worry about derating/rerating the control based on manufacturers equations or derating curves, Quad Ratings will take care of the derating/rerating for you.

CATALOG NO.	INPUT VOLT	SIZE	STANDARD 2.5 kHz PWM								QUIET 8.0 kHz PWM							
			CONSTANT TORQUE				VARIABLE TORQUE				CONSTANT TORQUE				VARIABLE TORQUE			
			HP	KW	IC	IP	HP	KW	IC	IP	HP	KW	IC	IP	HP	KW	IC	IP
ID15H201-E, -W	230	A	1	0.75	4.0	8.0	2	1.5	7	8	0.75	0.56	3.0	6.0	1	0.75	3.6	4.2
ID15H202-E, -W	230	A	2	1.5	7.0	14	3	2.2	10	12	1	0.75	4.0	8.0	2	1.5	6.8	7.8
ID15H203-E, -W	230	A	3	2.2	10	20	5	3.7	16	19	2	1.5	7.0	14	3	2.2	9.6	11
ID15H205-E, -W	230	A	5	3.7	16	32	7.5	5.5	22	25	3	2.2	10	20	5	3.7	16	19
ID15H207-E, -W	230	B2	7.5	5.5	22	44	10	7.4	28	32	5	3.7	16	32	7.5	5.5	22	25
ID15H210-E, -W	230	B2	10	7.4	28	56	15	11.1	42	48	7.5	5.5	22	44	10	7.4	28	32
ID15H215-E, -W	230	B2	15	11.1	42	84	15	11.1	54	62	10	7.4	28	56	15	11.1	42	48
ID15H220-E	230	B2	20	14.9	54	108	25	18.6	54	62	15	11.1	42	84	20	14.9	54	62
ID15H225-EO	230	C2	25	18.6	68	116	30	22.3	80	92	20	14.9	54	92	25	18.6	68	78
ID15H230-EO	230	C2	30	22.3	80	140	30	22.4	80	92	25	18.6	70	122	30	22.3	80	92
ID15H240-EO	230	D2	40	29.8	105	200	50	37.2	130	150	30	22.3	80	160	40	29.8	104	120
ID15H250-EO	230	D2	50	37.2	130	225	50	37.2	130	150	40	29.8	105	183	50	37.2	130	150
ID15H401-E, -W	460	A	1	0.75	2.0	4.0	2	1.5	4.0	5.0	0.75	0.56	1.5	3.0	1	0.75	2.0	3.0
ID15H402-E, -W	460	A	2	1.5	4.0	8.0	3	2.2	5.0	6.0	1	0.75	2.0	4.0	2	1.5	4.0	5.0
ID15H403-E, -W	460	A	3	2.2	5.0	10	5	3.7	8.0	10	2	1.5	4.0	8.0	3	2.2	5.0	6.0
ID15H405-E, -W	460	A	5	3.7	8.0	16	7.5	5.5	11	13	3	2.2	5.0	10	5	3.7	8.0	10
ID15H407-E, -W	460	A	7.5	5.5	11	22	10	7.4	14	17	5	3.7	8.0	16	7.5	5.5	11	13
ID15H410-E, -W	460	B2	10	7.4	14	28	15	11.1	21	24	7.5	5.5	11	22	10	7.4	14	16
ID15H415-E, -W	460	B2	15	11.1	21	42	20	14.9	27	31	10	7.4	14	28	15	11.1	21	24
ID15H420-E, -W	460	B2	20	14.9	27	54	25	18.6	34	39	15	11.1	21	42	20	14.9	27	31
ID15H425-E	460	B2	25	18.6	34	68	25	18.6	34	39	15	11.1	21	42	20	14.9	27	31
ID15H430-EO	460	C2	30	22.3	40	70	40	29.8	52	60	25	18.6	35	61	30	22.3	40	46
ID15H440-EO	460	C2	40	29.8	55	100	40	29.9	52	60	30	22.3	40	80	30	22.3	40	46
ID15H450-EO	460	D2	50	37.2	65	115	60	44.8	80	92	40	29.8	55	92	50	37.2	65	75
ID15H460-EO	460	D2	60	44.7	80	140	75	56	100	115	50	37.2	65	122	60	44.7	80	92
ID15H475-EO	460	D2	75	56	100	200	100	75	125	144	60	44.7	80	160	75	56	100	115
ID15H4100-EO	460	E	100	75	125	220	125	93	160	184	75	56	100	183	100	75	125	144
ID15H4150V-EO	460	E	150	112	180	300	150	112	180	207	100	75	125	240	125	93	160	184
ID15H4150-EO	460	F	150	112	190	380	200	149	240	276	125	93	150	260	150	112	170	200
ID15H4200-EO	460	F	200	149	250	500	250	186.5	310	360	150	112	190	380	175	131	210	240
ID15H4250-EO	460	F	250	187	310	620	300	224	370	430	200	149	250	500	250	187	310	360
ID15H4300-EO	460	G2	300	224	370	630	350	261	420	490	-	-	-	-	-	-	-	-
ID15H4350-EO	460	G2	350	261	420	720	400	298	480	560	-	-	-	-	-	-	-	-
ID15H4400-EO	460	G2	400	298	480	820	450	336	540	620	-	-	-	-	-	-	-	-
ID15H4450-EO	460	G	450	336	540	920	500	373	590	680	-	-	-	-	-	-	-	-
ID15H4500-EO	460	G+	500	373	590	1180	600	447	710	820	-	-	-	-	-	-	-	-
ID15H4600-EO	460	G+	600	447	710	1210	700	522	830	960	-	-	-	-	-	-	-	-
ID15H4700-EO	460	G+	700	522	830	1660	800	597	950	1100	-	-	-	-	-	-	-	-
ID15H4800-EO	460	G+	800	597	950	1710	900	671	1070	1230	-	-	-	-	-	-	-	-
ID15H501-E, -W	575	A	1	0.75	1.5	3.0	2.0	1.5	3.0	4.0	0.75	0.56	1.1	2.2	1	0.75	1.5	1.7
ID15H502-E, -W	575	A	2	1.5	3.0	6.0	3	2.2	4.0	5.0	1	0.75	1.5	3.0	2	1.5	3.0	4.0
ID15H503-E, -W	575	A	3	2.2	4.0	8.0	5	3.7	7.0	8.0	2	1.5	3.0	6.0	3	2.2	4.0	5.0
ID15H505-E, -W	575	A	5	3.7	7.0	14	7.5	5.5	9.0	11	3	2.2	4.0	8.0	5	3.7	7.0	8.0
ID15H507-E, -W	575	A	7.5	5.5	9.0	18	10	7.4	11	13	5	3.7	7.0	14	7.5	5.5	9	11
ID15H510-E, -W	575	B2	10	7.4	11	22	15	11.1	17	20	7.5	5.5	9	18	10	7.4	11	13
ID15H515-E, -W	575	B2	15	11.1	17	34	20	14.9	22	25	10	7.4	11	22	10	7.4	11	13
ID15H520-E	575	B2	20	14.9	22	44	20	14.9	22	25	10	7.4	11	22	10	7.4	11	13
ID15H525-E	575	B2	25	18.6	27	54	25	18.6	27	31	20	14.9	22	44	25	18.6	27	31
ID15H530-EO	575	C2	30	22.3	32	56	40	29.8	41	47	25	18.6	27	47	30	22.3	32	37
ID15H540-EO	575	C2	40	29.8	41	75	50	37.2	52	60	30	22.3	32	58	40	29.8	41	47
ID15H550-EO	575	D2	50	37.2	52	92	60	44.7	62	71	40	29.8	41	73	50	37.2	52	60
ID15H560-EO	575	D2	60	44.7	62	109	60	44.7	62	71	50	37.2	52	91	60	44.7	62	71
ID15H575-EO	575	E	75	56	77	155	100	75	100	115	-	-	-	-	-	-	-	-
ID15H5100-EO	575	E	100	75	100	200	125	93	125	145	-	-	-	-	-	-	-	-
ID15H5150V-EO	575	E	150	112	145	260	150	112	145	166	-	-	-	-	-	-	-	-
ID18H5150-EO	575	F	150	112	150	300	200	149	200	230	-	-	-	-	-	-	-	-
ID15H5200-EO	575	F	200	149	200	400	250	186	250	290	-	-	-	-	-	-	-	-
ID15H5300-EO	575	G	300	224	290	580	350	261	340	400	-	-	-	-	-	-	-	-
ID15H5350-EO	575	G	350	261	340	680	400	298	390	450	-	-	-	-	-	-	-	-
ID15H5400-EO	575	G	400	298	390	780	450	336	440	510	-	-	-	-	-	-	-	-

NOTE: -E is NEMA 1 enclosure with built-in dynamic braking; -W is NEMA 4X enclosure with built-in dynamic braking; -EO is NEMA 1 enclosure requires external braking kit

DESIGN SPECIFICATIONS

- Microprocessor controlled PWM output
- Output frequency 0.25-120Hz, optional 0.25-400Hz
- Peak overload capacity of 200%
- Process follower 0-5VDC, 0-10VDC, 4-20mA
- Free run or ramp stop
- Controlled reversing
- Selectable preset speeds
- Jog speed
- Dynamic braking
- DC Injection braking
- Separate accel/decel rates
- PID-Setpoint control
- Bus present and fault trip LED
- Fault trip output for customer use
- 2 Programmable analog meter outputs
- 4 Programmable Opto outputs
- NEMA 1 enclosure as standard (-E, -EO) 1-800 hp
- NEMA 4X enclosure as standard(-W) 1-20 hp

ENVIRONMENTAL AND OPERATING CONDITIONS

- Input voltage - 1 or 3 phase 200-240 VAC±10%, 3 phase 380-480 VAC ±10%, 3 phase 550-600 VAC ± 10%
- Input frequency - 50 or 60Hz ±5%
- Service factor - 1.0
- Duty - continuous
- Humidity - 90% max RH non-condensing
- Altitude - 3300 feet max without derate

OPERATOR KEYPAD

- Digital speed control
- Forward command
- Reverse command
- Stop command
- Jog speed
- Display 32 character alpha-numeric
- Local/Remote key
- Remote mount to 100 feet
- Membrane keys with tactile feel
- NEMA 4X enclosure

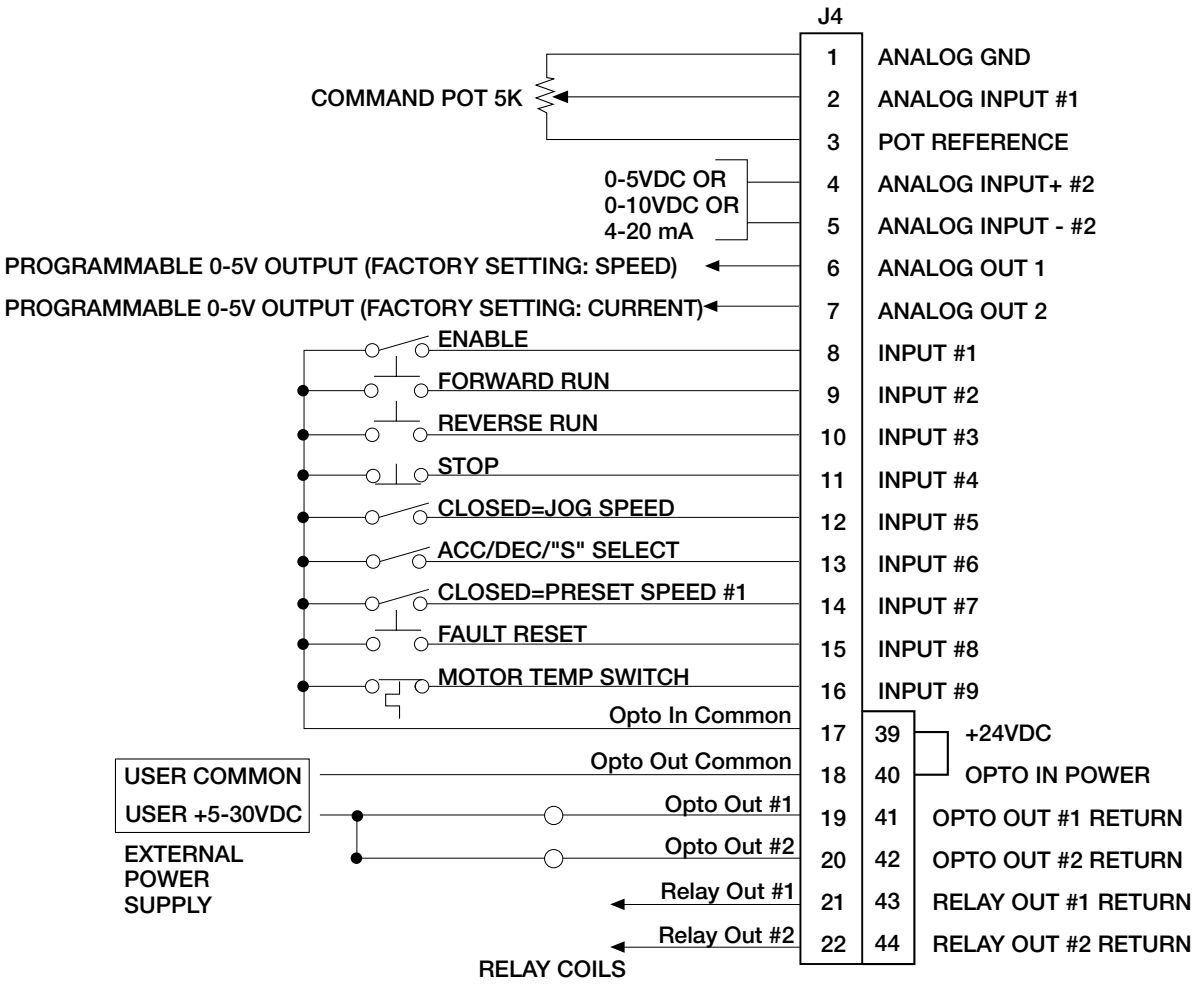
PROTECTIVE FEATURES

- Selectable automatic restart at momentary power loss with free setting of maximum number of trips and time between trip and reset
- DC bus charge indicator
- Adjustable time-base overload
- Cause of last 31 trips retained in memory
- Linear heat sink thermal sensor
- Digital display for fault conditions including:
  - Over voltage
  - Under voltage
  - Over current
  - Ground fault
  - Drive overload
  - Heatsink thermal
  - External trip

Output Ratings	Overload	150% for 60 seconds, 170-200% for 3 seconds constant torque				
	Capacity	115% for 60 seconds for variable torque				
	Frequency	0-400Hz				
	Voltage	0-Maximum Input Voltage (RMS)				
Input Ratings	Frequency	50 Hz		60 Hz		
	Voltage	180-230 VAC	340-457 VAC	180-264 VAC	340-528 VAC	495-660 VAC
	Phase	Three Phase or Single Phase with derate				
Control Spec	Impedance	1% minimum for required for sizes B2, C2, D2, F, G, G2, G+; 3% minimum for sizes A, E				
	Method	Sinewave Carrier Input, PWM Output				
	Speed Setting	±5vdc, 0-5vdc, ±10vdc, 0-10vdc, 4-20mA, Digital via Keypad, RS-232, RS-485, DeviceNet, Modbus Plus, Profibus				
	Accel/Decel	0-3600 Seconds linear or S-curve to maximum speed				
	Dynamic Braking	20% Min on E,W models, EO models require optional external assemblies				
LCD Display	Setup	Parameter values for setup and review				
	Running	Motor RPM, output current, output voltage, local remote control, Fwd/Rev				
	Faults	Separate message for each trip, last 31 retained in memory				
	Diagnostics	Review of setup and operating parameters				
Ambient Conditions	Temperature	0-40 Deg C for UL listing				
	Cooling	Forced air included when required				
	Altitude	0-3300 feet without derate				
	Humidity	0-90% Max RH non-condensing for NEMA 1; 100% condensing for NEMA 4				

Typical Remote Control Connections

Operation Mode: Standard run - 3 wire control



Keypad Extension Cable

For the convenience of our customers, we offer a connected plug/cable assembly. This assembly provides the connectors from the keypad to the control for remote keypad operation.

CATALOG NO.	CABLE EXTENSION LENGTH	APPROX SHPG. WGT.
CBLH015KP	5 FEET (1.5 METER)	2
CBLH030KP	10 FEET (3.0 METER)	4
CBLH046KP	15 FEET (4.6 METER)	6
CBLH061KP	20 FEET (6.1 METER)	8
CBLH091KP	30 FEET (9.1 METER)	12
CBLH152KP	50 FEET (15.2 METER)	18
CBLH229KP	75 FEET (22.9 METER)	26
CBLH305KP	100 FEET (30.5 METER)	30

Dynamic Braking Resistor Assemblies (RGA)

Dynamic Braking Resistor Assemblies include braking resistors completely assembled and mounted into a NEMA 1 enclosure. For 25 hp and above (-EO Controls), select the braking resistor from the table with the matching ohms for the RTA selected and adequate continuous watts capacity to meet load requirements. For 1 to 20 hp (-E Controls) select the braking resistor that has correct ohm value for the control and adequate continuous watts capacity to meet load requirements.

INPUT VOLTS	HP	TOTAL OHMS	CONTINUOUS RATED WATTS						
			600	1200	2400	4800	6400	9600	14200
230	1-2	30	RGA630	RGA1230	RGA2430				
	3-5	20	RGA620	RGA1220	RGA2420	RGA4820			
	7.5-10	10		RGA1210	RGA2410	RGA4810			
	15-20	6		RGA1206	RGA2406	RGA4806			
	25-40	4		RGA1204	RGA2404	RGA4804			
	50	2			RGA2402	RGA4802	RGA6402	RGA9602	RGA14202
460	1-3	120	RGA6120	RGA12120	RGA24120				
	5-7.5	60	RGA660	RGA1260	RGA2460	RGA4860			
	10	30	RGA630	RGA1230	RGA2430	RGA4830			
	15-25	20	RGA620	RGA1220	RGA2420	RGA4820			
	30-60	10		RGA1210	RGA2410	RGA4810			
	75-250	4		RGA1204	RGA2404	RGA4804	RGA6404	RGA9604	RGA14204
	300-450	2			RGA2402	RGA4802	RGA6402	RGA9602	RGA14202
575	1-2	200	RGA6200	RGA12200	RGA24200				
	3-5	120	RGA6120	RGA12120	RGA24120				
	7.5-10	60	RGA660	RGA1260	RGA2460	RGA4860			
	15	30	RGA630	RGA1230	RGA2430	RGA4830			
	20-30	24		RGA1224	RGA2424	RGA4824			
	40-150	14			RGA2414	RGA4814	RGA6414	RGA9614	RGA14214

Dynamic Braking Transistor Assemblies (RTA)

Dynamic Braking Transistor Assemblies include braking transistor completely assembled and mounted into a NEMA 1 enclosure, to be used with External Dynamic Braking Resistor Assemblies (RGA). Select RGA assembly with matching minimum OHMS and continuous regenerative power (Watts) capacity to meet load requirements. For use with -EO Controls.

	MAXIMUM BRAKING TORQUE IN % OF MOTOR RATING									
HP	208-230 VAC			380-480 VAC				550-600 VAC		
20	150%	150%	150%	150%	150%	150%	150%	150%	150%	150%
25	125%	150%	150%	150%	150%	150%	150%	150%	150%	150%
30	100%	150%	150%	120%	150%	150%	150%	150%	150%	150%
40	75%	115%	150%	90%	150%	150%	150%	127%	150%	150%
50	62%	92%	150%	72%	150%	150%	150%	100%	150%	150%
60	–	–	–	60%	150%	150%	150%	85%	145%	150%
75	–	–	–	48%	96%	150%	150%	68%	116%	150%
100	–	–	–	36%	72%	150%	150%	50%	87%	150%
150V	–	–	–	28%	56%	150%	150%	40%	70%	150%
150	–	–	–	–	48%	126%	150%	34%	58%	150%
200	–	–	–	–	36%	95%	150%	25%	44%	150%
250	–	–	–	–	29%	76%	150%	–	35%	122%
300	–	–	–	–	–	62%	125%	–	29%	100%
350	–	–	–	–	–	54%	108%	–	–	87%
400	–	–	–	–	–	47%	94%	–	–	76%
450	–	–	–	–	–	41%	84%	–	–	68%
Min. Ohms	**6**	**4**	**2**	**20**	**10**	**4**	**2**	**24**	**14**	**4**
CAT. NO.	**RTA2-6**	**RTA2-4**	**RTA2-2**	**RTA4-20**	**RTA4-10**	**RTA4-4**	**RTA4-2**	**RTA5-24**	**RTA5-14**	**RTA5-4**

Dynamic Braking Assemblies (RBA)

Dynamic Braking Assemblies include braking transistor and braking resistors completely assembled and mounted into a NEMA 1 enclosure. Select braking assembly from table with adequate maximum braking torque(%) and continuous regenerative power(Watts) capacity to meet load requirements. For use with -EO controls.

		MAXIMUM BRAKING TORQUE IN % OF MOTOR RATING												CONT.	CATALOG
	HP	20	25	30	40	50	60	75	100	150V	150	200	250	WATTS	NO.
INPUT VOLTAGE	200	90%	75%	60%	45%	36%	-	-	-	-	-	-	-	600	RBA2-610
	to	150%	125%	100%	75%	62%	-	-	-	-	-	-	-	1800	RBA2-1806
	240	150%	150%	150%	115%	92%	-	-	-	-	-	-	-	4000	RBA2-4004
	380	150%	150%	120%	90%	72%	60%	48%	36%	28%	-	-	-	600	RBA4-620
	to	150%	150%	120%	90%	72%	60%	48%	36%	28%	-	-	-	1800	RBA4-1820
	480	150%	150%	150%	150%	150%	120%	96%	72%	56%	48%	36%	29%	4000	RBA4-4010
	550	150%	150%	120%	90%	72%	60%	48%	36%	28%	-	-	-	600	RBA5-624
	To	150%	150%	120%	90%	72%	60%	48%	36%	28%	-	-	-	1800	RBA5-1824
	600	150%	150%	150%	150%	150%	120%	96%	72%	56%	-	-	-	4000	RBA5-4014

Expansion and Accessory Boards

Baldor offers a wide variety of plug-in expansion boards to allow the Series 15H vector controls to be interfaced with various inputs and outputs. One or two expansion boards may be mounted into the control to custom tailor the inputs, outputs, and feedback requirements to the application. Baldor also offers several expansion boards that will allow direct interfacing with popular PLC's.

Group 1 Boards

Isolated Input Board - EXB003A04 (10-30 Volts)
Isolated Input Board - EXB003A05 (90-130 Volts)

This board replaces the opto inputs on the main control board with isolated inputs. All inputs must be in the same voltage range and one side of all inputs is common. Screw terminals are provided for easy connection.

Master Pulse Reference/Pulse Follower - EXB005A01

This board is jumper selectable to create a master pulse reference based on the controls speed/direction command or selected as an isolated pulse follower. The follower can be ratioed up or down to the master pulse through the control keypad. The master or follower pulse train can also be configured as a two channel quadrature pulse with complements or configured as a one channel pulse train for speed and one channel for direction. As a follower, the pulse train will be retransmitted to the next follower as received from the master.

DC Tach Interface - EXB006A01

Allows a DC Tachometer to be used as a feedback or command signal to the controls built-in PID Set Point Controller. Jumper selectable for 7, 10, 15, 20, 30, 50, 60, 100, 200, 250 VDC per 1000 RPM tachometers with a software trim for 10% tolerance. Screw terminals are provide for easy connection.

Group 2 Boards

RS232/RS485 Serial Communication - EXB012A01

Allows serial communication for commands and monitoring. 115.2K baud maximum transmission rate. Screw terminals are provided for easy connection.

Four Output Relay/3-15 PSI Pneumatic Interface - EXB004A01

Converts 3-15 PSI air pressure to 0-10 VDC or 10-0 VDC (inverted) to be used as a command or feedback signal. Also includes four output relays to replace the four opto outputs on the main control board. Two relays are jumper selectable for N.O. or N.C., rated for 230 VAC , 5 Amps max and two form "C" relays (N.O. and N.C.). Please note that relay outputs are dry contacts with no power supplied from the control. Screw terminals are provided for relay connections and air hose connects to 1/8" O.D. nipple on expansion board.

High Resolution Analog Board - EXB007A02

Contains one high resolution input channel to replace Analog Input #2 on the main control board. The resolution will be as follows: ±10 VDC = 16 bit, 0-10 VDC = 15 bit, ±5 VDC = 15 bit, 0-5 VDC = 14 bit, 4-20 mA = 15 bit. Also contains two high resolution analog outputs to replace Analog Output #1 and #2 on the main control board. The outputs are selectable for ±10 VDC, 0-10 VDC, and 4-20 mA with inverting capability. Requires 100 second warm up period for full 16 bit resolution. 12 bit minnimum. Screw terminals are provided for easy connection.

Two Analog Output/ Three Relay Output Board - EXB010A01

Provides two isolated analog outputs each with 0-5 VDC, 0-10 VDC, or 4-20 mA capability. Also includes three relay outputs jumper selectable for N.O. or N.C. rated for 230 VAC, 5 amps maximum. Uses screw terminals for connection.

DeviceNet Communication Board - EXB013A01

Allows connection to DeviceNet communications bus. Uses plug in terminals for connection.

Profibus DP Communication Board - EXB014A01

Allows connection to Profibus DP communications bus. Uses plug in terminals for connection.

Modbus Plus Communication Board - EXB015A01

Allows connection to Modbus Plus communications bus. Uses plug in terminals for connection.

Group 1 and Group 2 Ordering/Mounting Information

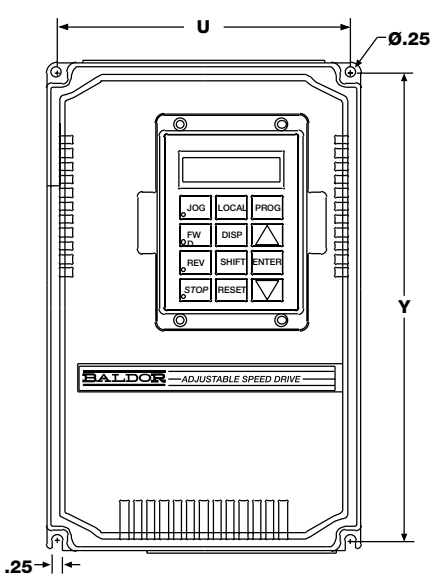
• NOTE: Expansion boards plug into the main control board inside the control. When using one expansion board, either a Group 1 or Group 2 board will connect to the main control board. When two expansions boards are used, one must be from Group 1 and one from Group 2. The Group 1 board will connect to the main control board and the Group 2 board will connect to a stacking connector on the Group 1 board.

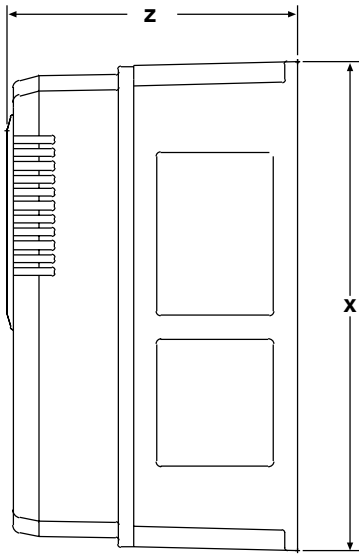
Accessory Boards

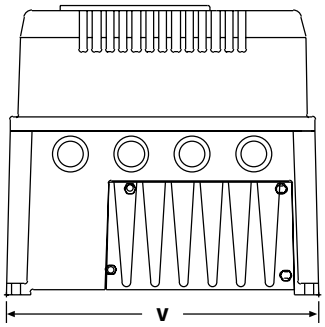
Isolated Input/2 Relay Output Accessory Board - ACB003A01

Contains 9 isolated inputs for 90-130 VAC. Also has 2 Relay outputs, Form C: N.O. and N.C. Accessory board mounts in expansion board slot but uses wiring harness to connect to motor control card.

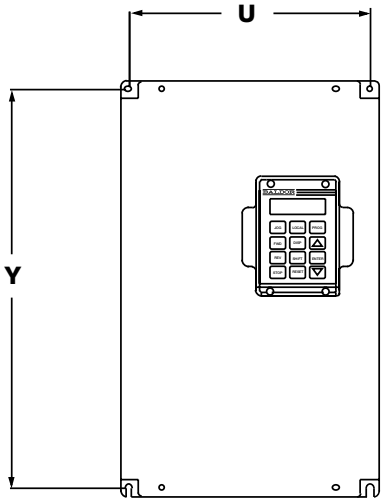
Outline and Dimensions

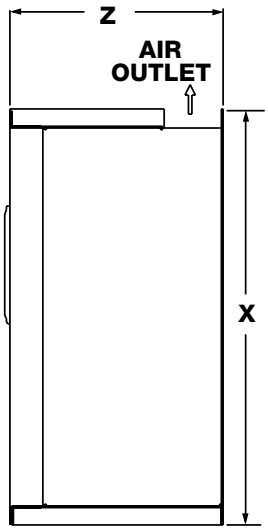


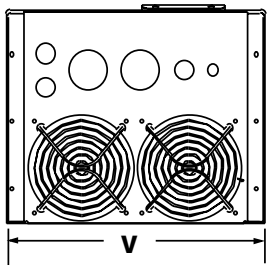




DIMENSIONS-IN (mm)					
	OUTSIDE			MOUNTING	
SIZE	HEIGHT(X)	WIDTH(V)	DEPTH(Z)	HEIGHT(Y)	WIDTH(U)
A	12.272 (312)	7.974 (203)	7.120 (181)	11.5 (292)	7.2 (183)
B2	12.150 (309)	8.700 (221)	8.730 (222)	11.5 (292)	7.2 (183)







NOTE: Size B2, C2, D2, E and F controls can also be mounted in a thru wall configuration. Please contact Baldor for thru wall mounting dimensions.

DIMENSIONS-IN (mm)					
	OUTSIDE			MOUNTING	
SIZE	HEIGHT(X)	WIDTH(V)	DEPTH(Z)	HEIGHT(Y)	WIDTH(U)
C2	16.98 (431)	10.5 (267)	9.66 (245)	15.58 (396)	7.76 (197)
D2	24.0 (610)	13.0 (330)	10.33 (262)	23.0 (584)	9.5 (241)
E	30.0 (762)	17.7 (450)	12.0 (305)	29.0 (737)	14.25 (362)
F	45.0 (1143)	27.0 (686)	13.0 (330)	44.0 (1118)	22.75 (578)
G	93.0 (2362)	31.5 (800)	23.6 (600)	FLOOR MOUNT	
G2	65.98 (1676)	31.6 (803)	23.49 (597)	FLOOR MOUNT	
G+	93.7 (2380)	63 (1600)	23.6 (600)	FLOOR MOUNT	

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