

Altivar® 71

Variable speed AC drives

Make way for the *evolution!*



For 3-phase A.C. motors from 0.5 to 700 HP.



Telemecanique

Simply Smart!

Leverage **ingenuity**
and intelligence
for **ease** of use

Altivar® 71 Drives

The *leading edge!*

This new generation of AC drives demonstrates the expertise and know-how of Schneider Electric with respect to AC drives. Exceptional performance, advanced functions...while always keeping the emphasis on **simplicity**. **Open** to many communication networks, applications and users...the Altivar 71 provides **ingenious solutions** for all your particular requirements.

A *powerful* fleet

- 1 to 700 HP
3-phase 380 to 480V
- 0.5 to 100 HP
3-phase 200 to 240V
- Integrated EMC level A filters
- Worldwide offer:
UL, CSA, CE, C-Tick, GOST

Remarkable performance

- Up to **220% overtorque**
- Flux vector control with or without encoder for asynchronous motors
- Synchronous motor control
- On-line auto-tuning
- Motor control by speed or torque command
- Output frequency up to 1000Hz
- Precise speed regulation

Expandable capabilities

The drive is equipped with a wealth of features, application functions, inputs/outputs and communication capabilities. These can be further extended by:

- input/output extension cards
- encoder interface cards
- communication cards
- a Controller Inside programmable card





Protection at all levels

- **of the motor:**
thermal protection – PTC probe or integrated electronic thermal relay, voltage and current surge limitation
- **of the machine:**
Power Removal safety function (no unintended motor operation), alarm management, external fault management
- **of the environment:**
drive developed in accordance with the Eco-Design principle
- **of the drive:**
protection in the event of overheating, current limitation using hardware and software and protection against corrosive environments



Easy to control...

- Graphic screen with customizable display
- Plain text with six available languages (English, Chinese, German, Spanish, French and Italian) with possibility of adding other languages
- Navigation wheel for easily “surfing” through the menus
- “Simply Start” menu for quick start-up and immediate benefit of the full performance of the Altivar 71 drive
- Function keys for short-cuts, on-line help or configurable for some applications
- Continuous display of the operating parameters of the motor





Altivar® 71 Drives

The *sky's* the limit.

The Altivar 71 drive incorporates a wide range of functions, from very simple to very sophisticated. Its performance is perfectly coordinated for many applications. With Altivar 71, the performance of your machines will soar!



Material handling: *dynamics* and *precision*

- Reaction time on logic command:
2ms ± 0.5ms
- Speed reference by pulse input or
differential analog input
- Control over communication network
- Positioning by limit switches with
optimisation of low speed operating time
- Multi-motor operation by switching
between parameter sets



Hoisting: *speed* and *safety*

- Brake control suited to travelling,
hoisting and slewing movements
- Weight measurement processing
- High speed hoisting
- Brake feedback control
- Management by limit switches



Wood machines: *high speed* and *protection*

- Operation up to 1000Hz
- Fast controlled stop
- Control by integrated
CANopen/Modbus port
- Motor surge limitation



Process machines: *precision* and *regulation*

- PID regulator dedicated to process
- High resolution on speed reference (1/32000)
- Motor control by speed or torque command
- Connection or control over communication networks
- Separate 24V DC control supply
- Regenerative braking unit
- Connection to common DC bus



Textile machines: *precision* and *speed*

- High resolution of speed reference
- Precision of speed whatever the load by using synchronous motor
- Up to 50Hz bandwidth
- Traverse control function
- Connection to DC bus



Packaging: *repetitiveness* and *quickness*

- High bandwidth
- Response time on change of reference: $2\text{ms} \pm 0.5\text{ms}$
- Control via integrated CANopen/Modbus port
- Positioning by limit switches



Continuity of service assured regardless of turbulence!

- Immune to supply voltage drops of up to -50%
- Protection against installation "noise" by integrated EMC filters
- Operation up to 50°C without derating
- Configurable behavior on fault
- Alarm management
- Auto-adaptation of switching frequency

Altivar® 71

Evolutionary design

Unrivalled basic equipment

With the many functions already integrated in the Altivar 71, you **reduce the cost of solutions** for your machine. The most economical solution is offered without compromise!

With more than 150 functions available, you benefit from:

- increased flexibility
- reduction in machine cycle time
- improved performance by operating as close as possible to the motor
- a high level of integration

Integrated Modbus® and CANopen Port

With these two standard networks, you achieve:

- simplified installation
- savings in panel space
- a high data exchange transfer rate
- direct connection to device level automation systems

Dialogue

The graphic terminal can be multipoint connected to several drives. The Altivar 71 drive is also available with a 7-segment display for ratings up to and including 20 HP @230Vac and 100 HP @460Vac.

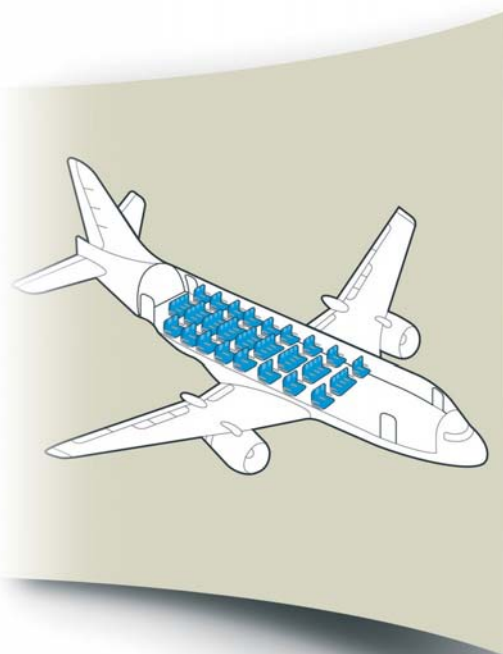
EMC mastered

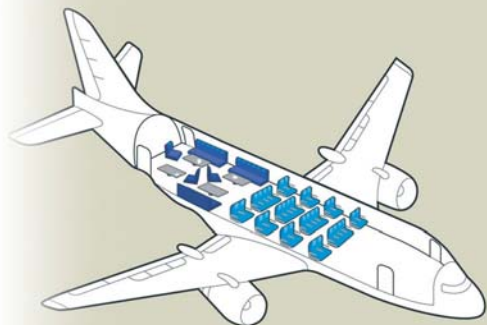
Incorporating level A conducted and radiated EMC filters, the Altivar 71 drive simplifies installation and establishes conformity of the machine for CE marking, without additional costs.

"Power Removal" function

Conforming to the machine standard EN 954-1 category 3 and the standard for electrical installations IEC/EN 61508-1 SIL2, and certified by a competent body (INERIS), it enables:

- easier machine certification
- elimination of electromechanical relays
- reduced wiring and installation times
- space savings in enclosures





Modular configuration

You require additional inputs/outputs, a particular communication network....

All you have to do is select up to 3 cards from those available.

By selecting the Altivar 71 drive, you benefit from both **simplified integration** in your automation system and **optimized costs**.



■ **Input/output extension** cards:

Logic inputs, open collector outputs, relay, PTC probe input, analog inputs, analog outputs, pulse input.

■ **Communication** cards:

Fipio, Ethernet, Modbus Plus, Profibus DP, DeviceNet, Uni-Telway, InterBus, for connection to the main communication networks available on the market.



■ **Controller Inside** programmable card:

Supports integration of simple programs in the drive for decentralization of a machine with automation. Allows OEMs and integrators to provide unique solutions.



■ **Interface** cards **for incremental encoder**

– RS422, open collector, Push-Pull, for:

- obtaining **full torque** even at zero speed
- improving **speed and torque regulation**
- increasing dynamic **performance**

Altivar® 71 Drives

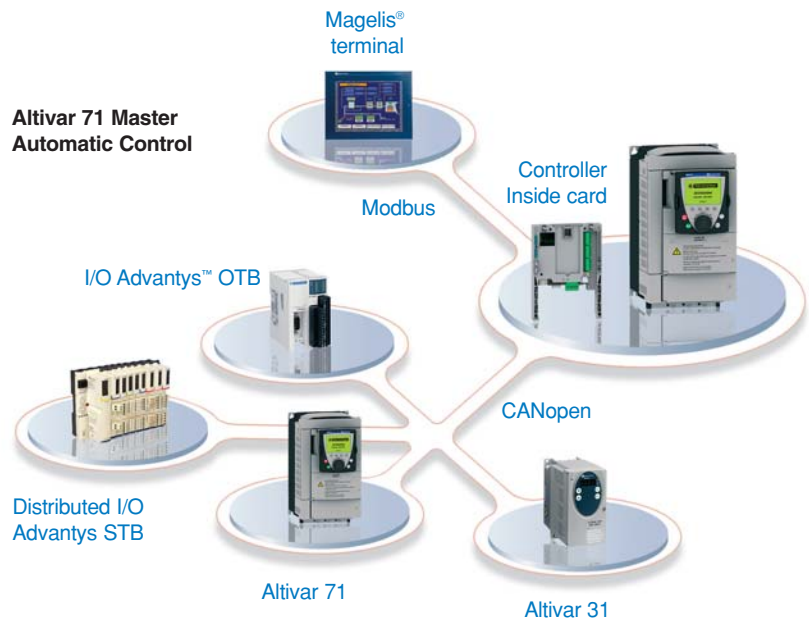
Adaptable control

The Altivar 71 drive can easily modify its performance...
Whatever your choice of a control solution, it always provides
an excellent user interface for **improved productivity...**

Automatic control

The **Controller Inside** programmable card transforms the Altivar 71 into a true **automation island**.

- It incorporates **automation functions** appropriate to your application
- With its processing as close as possible to the control motor, the movements gain in **speed**
- Its CANopen master network enables **control of other drives** (Altivar 31 or Altivar 71) fieldbus I/O and the exchange of data
- This card has **its own inputs/outputs** and access to those of the Altivar 71 drive
- The display functions of the graphic terminal are kept for **information and configuration**
- **Supervision** and/or control is available via Ethernet, Modbus (or an alternative communication network)



Semi-automatic control

One group of commands is issued by a **programmable controller**, the other by the **operator**.

- The source of commands such as start/stop instructions, references, etc. can be separated. You benefit from **quick reaction times** due to direct processing of information by the drive
- The switching of these channels enables **adaptation of the piloting to the operating phase**: setting-up, operation or maintenance
- The control of the drive conforms to the protocol standards in use
- Using the I/O mode, the networks are accessible to all: the Altivar 71 is controlled in the same way as cabled logic
- The possibility to supply the control with an external 24V DC makes **diagnostics always available**



Altivar 71 Slave
Semi-automatic Control



Manual control

Commands are issued directly by the **operator** via a joystick, push buttons, switches or using the **graphic terminal**.

- The numerous **inputs/outputs** enable all the commands and information to be received
- Commands can also be issued via the **graphic terminal**: start/stop instruction, speed reference, torque reference, PID reference, etc.
- The function keys of the terminal can be **assigned** to the preset speeds or PID references, +speed/-speed, channel switching, etc.
- On a channel switching, the instructions can be duplicated to avoid disturbing the operation of the Altivar 71



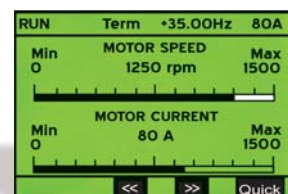
Manual Control



Altivar® 71 Drives

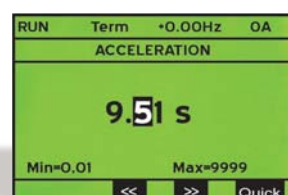
Message received: *all clear...*

The Altivar 71 is a professional at communication: its messages are clear, precise, illustrated... and the dialogue can be in a variety of languages.



Clarity

of the display comprising 8 lines of text and graphics. Legibility from 16 ft. 6 languages available: English, Chinese, German, French, Spanish and Italian...with the possibility of simply downloading other languages.



Flexibility

with its remote mounting alternatives:

- on the door of an enclosure, with an IP54 or IP65 degree of protection
- for multipoint connection to several drives

Storage of 4 configurations for transfer to other drives.

Protection

of parameters, control of their display, password protected, for simplified access to configurations with complete security.

Refine

apply filtering and scaling values to analog inputs and analog outputs

Simplicity

using the function keys for short-cuts, direct access and on-line help, display of the minimum and maximum values of the parameters.

Customization

of parameters, display screens, monitoring line, creation of "user" menu, etc.

Adaptability

add timing delays to logic inputs, logic outputs and relay output.

Modify

configure the active state on the relay and logic outputs.



Ergonomic

with its navigation button. With just one finger, freely and quickly "surf" the drop-down menu.

RUN	Term	+50.00Hz	5.4A
1.1-SIMPLY START			
2/3 wire control	:	2 wire	
Macro-configuration	:	M.handling	
Standard mot. freq.	:	50Hz IEC	
Rated motor power	:	2.2kW	
Rated motor volt.	:	400V	
Code	<<	>>	Quick

The “Simply Start” menu provides you with assistance for obtaining the best from the Altivar 71 and for protecting your motor.

Configure for your application

- Many **macro-configurations** are already integrated that are designed for a wide variety of applications and uses: materials handling, hoisting, general use, connection to communication networks, PID regulation, master/slave, etc. They can easily be modified.
- The architecture of the menus, hierarchical parameter system and short-cut functions enable **simple and quick programming**, even for the most sophisticated functions.

RDY	Term	+0.00Hz	0.0A
1.DRIVE MENU			
1.1 SIMPLY START			
1.2. MONITORING			
1.3. SETTINGS			
1.4. MOTOR CONTROL			
1.5. INPUTS / OUTPUTS CFG			
Code	<<	>>	Quick

RDY	Term	+0.00Hz	0.0A
QUICK NAVIGATION			
RETURN TO MAIN MENU			
DIRECT ACCESS TO...			
TO LAST MODIFICATIONS			
Code	<<	>>	Quick

More on-board services

Ample and varied, the services available via the graphic terminal **simplify setting-up** and **diagnostics** of your equipment.

The state of the drive is recorded at moment of a fault to assist with diagnostics

- Elapsed time
- Line voltage
- Motor current



With **PowerSuite**, software workshop **stay in control**, even from a distance!

For configuring, adjusting and monitoring your Altivar drive...keep an eye on your installations via Bluetooth®...

Oscilloscope function incorporated in the Altivar 71: display the channels using **PowerSuite**.

RUN	Mod.	+50.00Hz	5.4A
COMMUNICATION MAP			
Cmd channel	:	Modbus	
Cmd value	:	ABCD Hex	
Active ref. ch	:	RUN	Term +50.00Hz 5.4A
Frequency re	:		
ETA status w	:		
LOGIC INPUT MAP			
PR	LI1	LI2	LI3
LI7	LI8	LI9	LI10
MOT LI: 01010101010101010101010101010101			
Code	<<	>>	Quick

Display of inputs/outputs, communication, etc.

RDY	Term	+0.00Hz	0.0A
TEST IGBT			
IGBT 1		OK	
Diode 1		OK	
IGBT 2		Open	
Diode 2		Short circuit	
IGBT 3		OK	
Code	<<	>>	Quick

Test functions for drive, motor, components, inputs/outputs, etc.

RUN	Term	+50.00Hz	5.4A
SERVICE MESSAGE			
For technical support, dial 123-45			
Code	<<	>>	Quick

Service messages of all types of information on the display: a telephone number, a specific instruction... stored in the drive.

RUN	Term	+50.00Hz	5.4A
1.11 IDENTIFICATION			
ATV71HU22N4			
2.2kW/ 3HP			
380 / 480 V			
Appl. Software V1.0 IE 01			
MC Software V1.0 IE 01			
Code	<<	>>	Quick

Identity incorporated in the drive simplifies **installed base management**.

Altivar® 71 Drives *Eco-Design:* thinking of the future

Within its sustainable development policy, Schneider Electric is committed to environmental friendliness:

"Our products safeguard life, make goods safer and optimize the consumption of energy and natural resources.

We are actively involved in design, production, distribution and recycling processes that are environmentally friendly.

Protection of the environment forms an integral part of our strategic decision making."

The new generation of **Altivar 71** drives benefits from an **Eco-Design** approach. The same importance has been given to the "environment" criterion as that for other criteria, such as: performance, quality, ergonomics...and this applies to each stage of the **life cycle of the product*** (manufacture, distribution, usage and end of life).

Exemplary end of life recovery ...

88% of the parts used for the Altivar 71 are recyclable. They enable the recuperation of energy (incineration with energy recuperation) or of material (recycling, composting) conforming to the European directive WEEE (Waste Electrical & Electronic Equipment).

With Eco-Design



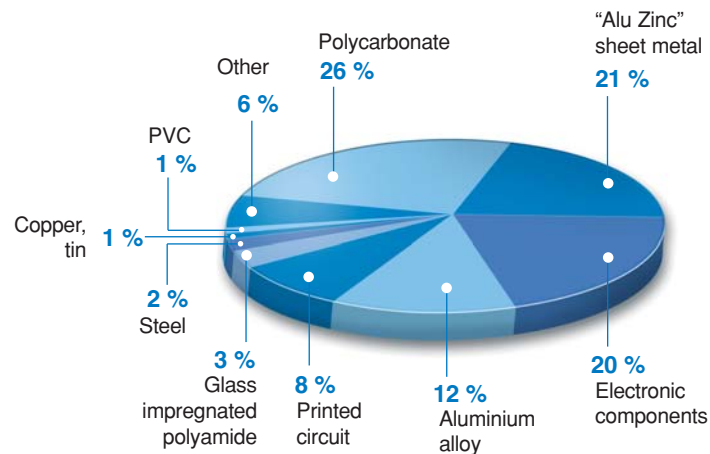
Without Eco-Design



70 %
Recovery rate imposed by the European directive WEEE.

... due to a strict selection and ideal combination of materials

Materials used for the **Altivar 71** have been selected for their minimal impact on the environment. Conformity to the European directive ROHS (Restriction Of Hazardous Substances) that prohibits the use of materials such as lead, chromium 6...



ISO 14 001 certified sites for their manufacturing operations:

- Pacy-sur-Eure/France
- Houston TX/USA
- Mie/Japan

and certified for their Eco-Design cycles.

*For the complete "Product Environmental Profile" document relating to the entire range, please contact Schneider Electric.

Analysis carried out using EIME (Environmental Information and Management Explorer) software and based on international averages.

The efficiency of Telemecanique® branded *solutions*

Used in combination, Telemecanique products provide quality solutions, meeting all your **Automation** and **Control** applications requirements.



Simple machines

Altistart 01: 0.25 to 75 HP

Altivar 11: 0.25 to 3 HP

Altivar 31: 0.25 to 20 HP



Complex, high power machines

Altivar 71: 0.5 to 700 HP

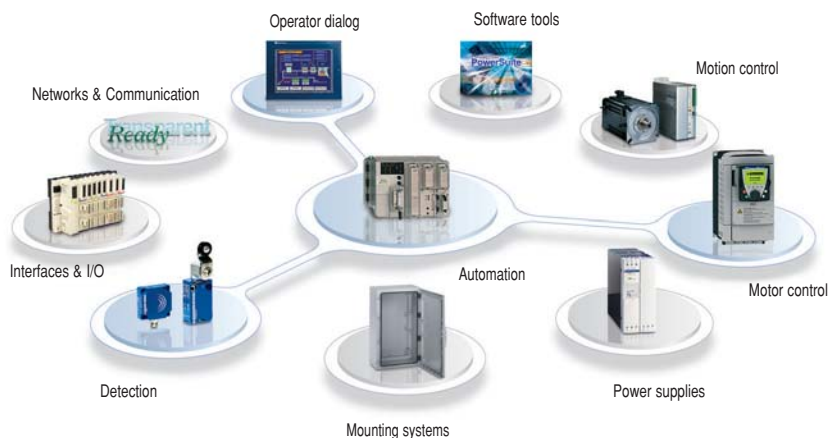


Pumping and ventilation machines

Altistart 48: 3 to 1200 HP

Altivar 21: 1 to 100 HP

Altivar 61: 1 to 900 HP



A worldwide presence

Constantly available

- More than 5,000 points of sale in 130 countries.
- You can be sure to find the range of products that are right for you and which complies fully with the standards in the country where they are used.

Technical assistance wherever you are

- Our technicians are at your disposal to assist you in finding the optimum solution for your particular needs.
- Schneider Electric provides you with all necessary technical assistance, throughout the world.



Selection guide

Altivar® 71 Drives

Supply voltage: 3-phase 200...240V

Motor			Drive	
kW	HP	Amps	References (LCD keypad included)	Dimensions W x H x D (inches)
0.37	0.5	3	ATV 71H037M3 ⁽¹⁾	5.12 x 9.06 x 6.8
0.75	1	4.8	ATV 71H075M3 ⁽¹⁾	5.12 x 9.06 x 6.8
1.5	2	8	ATV 71HU15M3 ⁽¹⁾	5.12 x 9.06 x 6.8
2.2	3	11	ATV 71HU22M3 ⁽¹⁾	6.1 x 10.24 x 7.24
3	4	13.7	ATV 71HU30M3 ⁽¹⁾	6.1 x 10.24 x 7.24
4	5	17.5	ATV 71HU40M3 ⁽²⁾	6.1 x 10.24 x 7.24
5.5	7.5	27.5	ATV 71HU55M3 ⁽²⁾	6.89 x 11.61 x 7.24
7.5	10	33	ATV 71HU75M3 ⁽²⁾	8.27 x 11.61 x 8.27
11	15	54	ATV 71HD11M3X ⁽³⁾	9.06 x 15.75 x 8.27
15	20	66	ATV 71HD15M3X ⁽³⁾	9.06 x 15.75 x 8.27
18.5	25	75	ATV 71HD18M3X ⁽³⁾	9.68 x 16.54 x 8.27
22	30	88	ATV 71HD22M3X ⁽³⁾	9.68 x 16.54 x 8.27
30	40	120	ATV 71HD30M3X ⁽³⁾	12.83 x 21.65 x 9.45
37	50	144	ATV 71HD37M3X ⁽³⁾	12.83 x 21.65 x 9.45
45	60	176	ATV 71HD45M3X ⁽³⁾	12.83 x 21.65 x 9.45
55	75	221	ATV 71HD55M3X ⁽³⁾	12.2 x 36.22 x 14.76
75	100	285	ATV 71HD75M3X ⁽³⁾	13.78 x 40.16 x 14.76

For 20 HP and smaller, add the letter "Z" to the end of the reference for an Altivar 71 to receive the drive with an LED keypad in place of the LCD keypad.

(1) For single-phase 0.37 to 5.5 kW range, select the next rating up
(Example: 2.2 kW - reference = ATV 71HU30M3).

(2) For single-phase operation, select the next rating up and add a line reactor.

(3) Without EMC filter.

Supply voltage: 3-phase 380...480V

Motor			Drive	
kW	HP	Amps	References (LCD keypad included)	Dimensions W x H x D (inches)
0.75	1	2.3	ATV 71H075N4	5.12 x 9.06 x 6.8
1.5	2	4.1	ATV 71HU15N4	5.12 x 9.06 x 6.8
2.2	3	5.8	ATV 71HU22N4	5.12 x 9.06 x 6.8
3	4	7.8	ATV 71HU30N4	6.1 x 10.24 x 7.24
4	5	10.5	ATV 71HU40N4	6.1 x 10.24 x 7.24
5.5	7.5	14.3	ATV 71HU55N4	6.89 x 11.61 x 7.24
7.5	10	17.6	ATV 71HU75N4	6.89 x 11.61 x 7.24
11	15	27.7	ATV 71HD11N4	8.27 x 11.61 x 8.27
15	20	33	ATV 71HD15N4	9.06 x 15.75 x 8.27
18.5	25	41	ATV 71HD18N4	9.06 x 15.75 x 8.27
22	30	48	ATV 71HD22N4	9.68 x 16.54 x 8.27
30	40	66	ATV 71HD30N4	9.69 x 21.65 x 9.45
37	50	79	ATV 71HD37N4	9.69 x 21.65 x 9.45
45	60	94	ATV 71HD45N4	12.83 x 24.8 x 11.42
55	75	116	ATV 71HD55N4	12.83 x 24.8 x 11.42
75	100	160	ATV 71HD75N4	12.83 x 24.8 x 11.42
90	125	179	ATV 71HD90N4	12.2 x 36.22 x 14.76
110	150	215	ATV 71HC11N4	13.78 x 40.16 x 14.76
132	200	259	ATV 71HC13N4	11.81 x 46.85 x 14.76
160	250	314	ATV 71HC16N4	17.32 x 46.85 x 14.76
200	300	387	ATV 71HC20N4	23.23 x 46.85 x 14.76
250	400	481	ATV 71HC25N4	23.23 x 46.85 x 14.76
280	450	550	ATV 71HC28N4	23.23 x 46.85 x 14.76
315	500	616	ATV 71HC31N4	35.04 x 54.72 x 14.76
400	600	759	ATV 71HC40N4	35.04 x 54.72 x 14.76
500	700	941	ATV 71HC50N4	43.7 x 54.72 x 14.76

For 100 HP and smaller, add the letter "Z" to the end of the reference for an Altivar 71 to receive the drive with an LED keypad in place of the LCD keypad.

Inputs/outputs on board

Analog input #1: +/- 10Vdc bipolar input, 1 bits + 1 sign resolution, 2ms +/- .5ms sample time

Analog input #2: software selectable for 1-10Vdc or x-y mA
x-y selectable from 0-20mA,
11 bits resolution, 2ms +/- .5ms sample time

Analog output #1: software selectable for 1-10Vdc or x-y mA
x-y selectable from 0-20mA,
10 bits resolution, 2ms +/- .5ms sample time

Relay output #1: one NO, one NC

Relay output #2: one NO

6 logic inputs 24Vdc, 2ms +/- .5ms sample time
Multiple function assignment possible
Positive logic (source) or Negative logic (sink) choice LI6 offers PTC probe assignment

Power Removal input: 1 input for interlocking function (run permissive)

RJ45 port Modbus or CANopen (selectable)

PowerSuite software workshop

PowerSuite CD-ROM for PC _____ VW3 A8104

Connection kit
for PC _____ VW3 A8106

Adaptor for wireless link
Modbus-Bluetooth® _____ VW3 A8114

Input/output cards

Logic inputs/outputs

1 voltage output, 24V

1 voltage output, -10V

1 logic output, relay

4 programmable logic inputs

2 assignable logic outputs with open collector

1 input for 6 PTC probes max.

_____ VW3 A3201

Extended inputs/outputs

Same as logic inputs/outputs card +

2 analog inputs

2 analog outputs

1 pulse input

_____ VW3 A3202

Interface cards for incremental encoders

with RS 422 outputs, 5V _____ VW3 A3401

with RS 422 outputs, 15V _____ VW3 A3402

with open collector outputs, 12V _____ VW3 A3403

with open collector outputs, 15V _____ VW3 A3404

with push-pull outputs, 12V _____ VW3 A3405

with push-pull outputs, 15V _____ VW3 A3406

with push-pull outputs, 24V _____ VW3 A3407

Controller inside programmable card

_____ VW3 A3501

Communication cards

Fipio _____ VW3 A3311

Ethernet _____ VW3 A3310

Modbus Plus _____ VW3 A3302

Profibus DP _____ VW3 A3307

DeviceNet _____ VW3 A3309

Uni-Telway _____ VW3 A3303

InterBus _____ VW3 A3304

For full and detailed information on the
Altivar 71 offer, please refer to our catalog 8800CT0501.

Selection guide

Altivar® 71 Accessories

Control Fan Kit

Installation of kit enables the drive to operate in higher ambient temperature. Fan mounts on top of drive and is powered from the drive.

For Drives	References
ATV 71H037M3...HU55M3	VW3 A9 401
ATV 71H075N4...HU75N4	
ATV 71HU75M3...HD15M3	VW3 A9 402
ATV 71HD11N4...HD18N4	
ATV 71HD18M3X...HD22M3X	VW3 A9 404
ATV 71HD22N4	
ATV 71HD30N4...HD37N4	VW3 A9 405
ATV 71HD30M3X...HD45M3X	VW3 A9 406
ATV 71HD45N4...HD75N4	VW3 A9 407

NEMA Type 1 Kit

Kit includes: a metal box, with conduit knockout. Kit provides conduit landing when wall mounting the drive.

For Drives	References
ATV 71H037M3...HU15M3	VW3 A9 201
ATV 71H075N4...HU22N4	
ATV 71HU22M3...HU40M3	VW3 A9 202
ATV 71HU30N4, HU40N4	
ATV 71HU55M3	VW3 A9 203
ATV 71HU55N4, HU75N4	
ATV 71HU75M3	VW3 A9 204
ATV 71HD11N4	
ATV 71HD11M3X, HD15M3X	VW3 A9 205
ATV 71HD15N4, HD18N4	
ATV 71HD18M3X, HD22M3X	VW3 A9 206
ATV 71HD22N4	
ATV 71HD30N4, HD37N4	VW3 A9 207
ATV 71HD30M3X...HD45M3X	VW3 A9 217
ATV 71HD45N4...HD75N4	VW3 A9 208
ATV 71HD55M3X	VW3 A9 209
ATV 71HD90N4	
ATV 71HD75M3X	VW3 A9 210
ATV 71HC11N4	
ATV 71HC13N4	VW3 A9 211
ATV 71HC16N4	VW3 A9 212
ATV 71HC20N4...HC28N4	VW3 A9 213
Without braking unit	
With braking unit VW347101	VW3 A9 214

Kit for Mounting Heatsink In Back of Enclosure

Kit used to mount the heatsink of the drive outside of an enclosure. Kit includes: a metal frame, seals, mounting hardware, bracket to mount fan kit so fan can be accessed from the front of the drive template.

For Drives	References
ATV 71H037M3...HU15M3	VW3 A9 501
ATV 71H075N4...HU22N4	
ATV 71HU22M3...HU40M3	VW3 A9 502
ATV 71HU30N4, HU40N4	
ATV 71HU55M3	VW3 A9 503
ATV 71HU55N4, HU75N4	
ATV 71HU75M3	VW3 A9 504
ATV 71HD11N4	
ATV 71HD11M3X, HD15M3X	VW3 A9 505
ATV 71HD15N4, HD18N4	
ATV 71HD18M3X, HD22M3X	VW3 A9 506
ATV 71HD22N4	
ATV 71HD30N4, HD37N4	VW3 A9 507
ATV 71HD30M3X...HD45M3X	VW3 A9 508
ATV 71HD45N4...HD75N4	VW3 A9 509
ATV 71HD55M3X	VW3 A9 510
ATV 71HD90N4	
ATV 71HD75M3X	VW3 A9 511
ATV 71HC11N4	
ATV 71HC13N4	VW3 A9 512
ATV 71HC16N4	VW3 A9 513
ATV 71HC20N4...HC28N4	VW3 A9 514
Without braking unit	
With braking unit VW3A7101	VW3 A9 515

All locations

In enclosure

- Savings in space assured, with 50°C rating: reduced width of drive and side by side mounting...
- Reduce heat inside the enclosure by installing the heatsink outside (degree of protection IP54 Type 12)

On a wall

- Simple installation using Type 1 kit
- Altivar 71 in IP54 version

In severe environments

- Resistance assured with the Altivar 71 reinforced version, conforming to category 3C2 of IEC 721-3-3
- Exposed copper is tinned, circuit boards are conformal coated in critical areas, and plastics are treated to better withstand the corrosive nature of certain oils. This protection is standard on 55kW/75 HP and higher @230Vac and on 90kW/125 HP and higher @460Vac. Add S337 to the end of the reference number on smaller units.

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