

# HF2.4-DOLE-24VDC



Products → Low Voltage Products and Systems → Control Products → Motor Controllers → Motor Controllers

## General Information

<b>Extended Product Type:</b>	HF2.4-DOLE-24VDC
<b>Product ID:</b>	1SAT123000R1011
<b>EAN:</b>	4013614515613
<b>Catalog Description:</b>	HF2.4-DOLE Electronic Compact Starter 24 VDC
<b>Long Description:</b>	<p>The HF-DOLE-range is our safety range with emergency stop function. It's used for the direct-on-line start of motors and the switching of non-resistive loads. With contactor and overload relay functionalities integrated into one device, the results are faster wiring times and fewer faults. The range covers 0.6 A, 2.4 A and up to 9 A - for motors up to 3 kW – 500 V AC. The integrated electronic overload protection has a wide setting range that enables just three models to cover all requirements. Setting range of HF2.4-DOLE-24VDC is 0.18 A to 2.4 A. The control supply voltage is 24 V DC. For the control and main connection points ABB offers screw connections. Safety Integrity Level 3 in accordance with functional safety standard IEC 61508-1 and Performance Level 'e' in accordance with ISO 13849-1 are certified. Also ATEX has been certified.</p>

## Ordering

<b>Minimum Order Quantity:</b>	1 piece
<b>Customs Tariff Number:</b>	85371098
<b>Product Main Type:</b>	HF
<b>Product Name:</b>	Electronic Starter

## Popular Downloads

<b>Instructions and Manuals:</b>	2CDC130009M0401
<b>Instructions and Manuals (Part 2):</b>	2CDC130009M0401
<b>Dimension Diagram:</b>	1SAT100401F0001

## Dimensions

<b>Product Net Width:</b>	22.5 mm
<b>Product Net Height:</b>	99 mm
<b>Product Net Depth:</b>	114.5 mm
<b>Product Net Weight:</b>	0.204 kg

## Technical

<b>Standards:</b>	IEC/EN 60947-1 IEC/EN 60947-4-2 IEC/EN 61508 ISO 13849 UL 60947-1 UL 60947-4-2
<b>Function:</b>	Direct-on-line-starter with overload protection and emergency stop function
<b>Utilization:</b>	Motor Protection
<b>Rated Operational Voltage:</b>	Main Circuit 500 V AC
<b>Operational Voltage:</b>	Maximum 550 V AC Minimum 42 V AC
<b>Rated Frequency (f):</b>	Main Circuit 50 Hz Main Circuit 60 Hz
<b>Rated Control Supply Voltage (U<sub>s</sub>):</b>	24 V DC
<b>Rated Input Voltage (U<sub>IN</sub>):</b>	Switching Threshold at Signal <0> -3 ... 9.6 V Switching Threshold at Signal <1> 19.2 ... 30 V
<b>Rated Impulse Withstand Voltage (U<sub>imp</sub>):</b>	Main Circuit 6 kV
<b>Rated Insulation Voltage (U<sub>i</sub>):</b>	500 V
<b>Rated Operational Current AC-51 (I<sub>e</sub>):</b>	2.4 A
<b>Rated Operational Current AC-53a (I<sub>e</sub>):</b>	2.4 A
<b>Rated Control Supply Current (I<sub>s</sub>):</b>	0.04 A
<b>Rated Uninterrupted Current (I<sub>u</sub>):</b>	2.4 A
<b>Input Current:</b>	0.003 A
<b>Switching Frequency:</b>	≤ 2 Hz 120 starts/min 7200 starts/h
<b>Rated Operational Power AC-53a (P<sub>e</sub>):</b>	0.75 kW
<b>Overvoltage Category:</b>	III
<b>Overload Protection:</b>	Electronic overload protection
<b>Setting Range:</b>	0.18 ... 2.4 A
<b>Trip Class:</b>	class 10A
<b>Number of Poles:</b>	3
<b>Power Loss:</b>	Maximum 3,3 W Minimum 1,1 W
<b>Number of Protected Poles:</b>	3
<b>Mechanical Durability:</b>	10000 cycle
<b>Electrical Durability:</b>	30000000 cycle

<b>Delay Time (?):</b>	Off, Maximum, Switched Off via Control Input Voltage 40 ms Off, Maximum, Switched Off via Supply Voltage 500 ms Off, Typical, Switched Off via Control Input Voltage 30 ms Off, Typical, Switched Off via Supply Voltage 25 ms Off, Maximum, Switched Off with Pushbutton 3 second [unit of time] Off, Minimum, Switched Off with Pushbutton 0.5 second [unit of time]
<b>Mounting on DIN Rail:</b>	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
<b>Mounting Position:</b>	Position 1, load side bottom
<b>Connecting Capacity Control Circuit:</b>	Flexible with Ferrule 1/2x 1 ... 2.5 mm <sup>2</sup> Flexible 1/2x 1 ... 2.5 mm <sup>2</sup> Rigid 1x 0.5 ... 4 mm <sup>2</sup>
<b>Connecting Capacity Main Circuit:</b>	Flexible with Ferrule 1x 2 ... 2.5 mm <sup>2</sup> Flexible 1x 2 ... 2.5 mm <sup>2</sup> Rigid 1x 2 ... 2.5 mm <sup>2</sup>
<b>Recommended Screw Driver:</b>	Control Circuit M3 Main Circuit M3
<b>Terminal Type:</b>	Screw Terminals
<b>Tightening Torque:</b>	Control Circuit 0.5 ... 0.6 N·m Main Circuit 0.5 ... 0.6 N·m
<b>Wire Stripping Length:</b>	Control Circuit 8 mm Main Circuit 8 mm
<b>Response Time:</b>	Phase Asymmetry 33% 120 second [unit of time] Phase Asymmetry 67% 1.8 second [unit of time] Phase Failure 1.8 second [unit of time]
<b>Pollution Degree:</b>	2
<b>Phase Loss Sensitive:</b>	Yes
<b>Degree of Protection:</b>	Housing IP20 Main Circuit Terminals IP20
<b>Short-Circuit Current Rating (SCCR):</b>	(500 V AC, 30 A Class J or CC) 100 kA

## Safety Information

<b>Performance Level (PL):</b>	Up to e
<b>Safety Integrity Level (SIL):</b>	3
<b>Mean Time to Dangerous Failure (MTTF<sub>d</sub>):</b>	Motor Protection 447 year Safe Shutdown 518 year
<b>Mean Time to Failure (MTTF):</b>	43 year
<b>Probability of Dangerous Failure per Hour (PFH<sub>D</sub>):</b>	2 hour
<b>Diagnostic Coverage:</b>	98.91 %

<b>Maximum Operating Voltage UL/CSA:</b>	Main Circuit 500 V AC
<b>Horsepower Rating UL/CSA:</b>	Nominal Switching Performance Full Load (power factor = 0.4) 1.2 Hp Nominal Switching Performance Full Load (power factor = 0.8) 2.2 Hp
<b>Ampere Rating UL/CSA:</b>	2.4 A
<b>Full Load Amps Motor Use:</b>	2.4 A
<b>Connecting Capacity Main Circuit UL/CSA:</b>	Flexible with Ferrule 1x 24 ... 14 AWG Flexible 1x 24 ... 14 AWG Solid 1x 24 ... 14 AWG
<b>Connecting Capacity Control Circuit UL/CSA:</b>	Flexible with Ferrule 1x 24 ... 14 AWG Flexible 16-8 AWG Solid 1x 24 ... 14 AWG
<b>Tightening Torque UL/CSA:</b>	Control Circuit 5 ... 7 in·lb Main Circuit 5 ... 7 in·lb

## Environmental

<b>Ambient Air Temperature:</b>	Operation -25 ... +70 °C Operation Compensated -40 ... + 80 °C
<b>RoHS Status:</b>	Following EU Directive 2011/65/EU

## Certificates and Declarations (Document Number)

<b>ATEX Certificate:</b>	1SAA918002-3901
<b>CCC Certificate:</b>	1SAA918005-3801
<b>cUL Certificate:</b>	cUL E191658
<b>Declaration of Conformity - CE:</b>	1SAD038501-0194
<b>EAC Certificate:</b>	1SAA918001-2701
<b>Instructions and Manuals:</b>	2CDC130009M0401
<b>RoHS Information:</b>	1SAD038501-0194

## Container Information

<b>Package Level 1 Units:</b>	1 piece
<b>Package Level 1 Width:</b>	150 mm
<b>Package Level 1 Length:</b>	115 mm
<b>Package Level 1 Height:</b>	34 mm
<b>Package Level 1 Gross Weight:</b>	0.304 kg
<b>Package Level 1 EAN:</b>	4013614515613

## Classifications

<b>E-nummer:</b>	3210492
<b>ETIM 5:</b>	EC001037 - Motor starter combination
<b>ETIM 6:</b>	EC001037 - Motor starter/Motor starter combination

ETIM 7:

EC001037 - Motor starter/Motor starter combination

eClass:

7.0 27370905

UNSPSC:

39121514

