U3・HU3 Type Series Ultra type 1/2t～60t

Included over load prevention function as standard equipment

Inverter hoist that develops new use and new field

Low-wearing electromagnet brake

- Heat-generation and wear are small under severe inching operations accompanied by braking operations at low motor-speeds in the inverter-driven power train. Abatement heat-generation and wear contribute to long-span operation.
- Hoists rated for 7.5 ton or more are equipped with an emergency brake.

Resistance unit

- Cement resistances are unitized for downsizing.
  (For hoist rated for 10 ton or less)
- Adoption of the connector system facilitates hoist work.
  (For hoists rated for 10 ton or less)

Control panel integrating purpose-built inverter

- The control panel, made compact with an integrated inverter only for hoist, has improved environmental resistance.
- Simple parameter setting operation
  - ＊Allows operating speed to be specified freely.
  - ＊Allows selection of light-load high-speed function.
  - ＊Allows the position detection point to be specified freely.
- Troubleshooting facilitated by abnormality display.
- The time for replacement of parts can be judged easily by the operation history display function.
- Hoists with traversing inverter are equipped with the Anti-sway function as a standard function.
  - ＊The judgement levels of light load and overload vary depending on the environment(voltage, temperature, etc) in which the hoists are used.(Please be sure to adjust them on site.)
  - ＊Anti-sway function can be effective only when the traversing rail is straight.
  - ＊The factory setting of the traversing acceration time is 3 seconds.
  - ＊When using a response control function, it's sometimes different from the conventional convenience in inchingu operation.
    (When it's equipped with a changeover switch in a push button, it's possible to add to operator's sense.)

Adoption of S type body

- This series is based on the model S, high-performance parent body which features highest-in-class hoisting speed, power, and durability, and withstands repeated operations.

Encoder

- Full-time monitoring of hoist motor motion; detects abnormalities and stops the machine if necessary as a safety precaution.
- Detects position using rotation pulses; reduces machine speed when approaching the upper or the lower limit and stops it there.
- Detects light-load and automatically operates light-load high-speed.

Smooth operation

- Infinitesimal and light-moving inching operations
- Smooth changeover between high- and low-speed operations

Introduction of UA type 45 kW series

- 45 kW hoisting motor has further improved machine speed

Type	Capacity (t)	Hoisting speed m/min	Hooting Motor Capacity(kW)	Hooting Motor Poles(P)
UA	15	1.3/13	45	4
	20	1.1/11		
	30	0.75/7.5		
	40	0.56/5.6		
	45	0.5/5		
	50	0.45/4.5		
	60	0.37/3.7		

＊Outside dimensions of this hoist differ from those listed on this catalog; contact us for further information.
＊A general-purpose inverter will be installed.
＊Some functions of this hoist differ from those on other Soukai-TEI products.

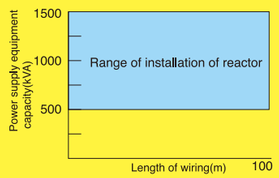
Manufacturing specifications for typical large-capacity hoists

Type	Capacity (t)	Hoisting speed m/min	Hooting Motor Capacity(kW)	Hooting Motor Poles(P)
U	100	0.36/2.2	24kW ×2台	4
UA	100	0.67/4 Light-load high-speed function 6m/min	45kW ×2台	4

※400 V series are also available; contact us for further information.

Note: AC Reactor

The inverter hoist might be damaged when it is connected directly with the large capacity power transformer(more than 500kVA transformer), there is a switch of the phase advance capacitor and the excessive peak current inflows into the power supply input circuit.
In such caces, please make sure that the AC reactor is installed on the primary side of the inverter hoist.



Specifications

Type	Capacity(t)	Lift(m) Low	Lift(m) High	Wire Rope Monorail type 2falls	Wire Rope Monorail type 4falls	Wire Rope Lowhead type 4falls	Wire Rope Double railtype 4falls	Rope specification	Hoisting Inverter Operation speed m/min On-load Low speed	On-load High speed	Light load high speed	Motor Out put (kW)	Motor Rated Current (A)	Motor Poles
U3	1/2	6	12	φ6.3	—	φ4	—	6×W(19) B Class JISG3525	0.0233 (1.4)	0.217 (13)	0.325 (19.5)	1.2	8	4
	1			φ8 ※3	—	φ6.3	—					2.4	17	
	2			φ10	—	φ8	—	6×Fi(29) B Class JISG3525	0.0183 (1.1)	0.167 (10)	0.25 (15)	3.5	26	
	2.8			φ12.5	—	φ9	φ9					4.9	32	
	3			φ12.5	—	φ9	φ9					5.3	34	
	5	8		—	φ11.2	φ11.2	φ11.2		0.015 (0.9)	0.133 (8)	0.2 (12)	7.5	40	
	7.5			—	φ14	φ14	φ14		0.0117 (0.7)	0.117 (7)	0.175 (10.5)	10	54	
	10			—	φ16	φ16	φ16		0.01 (0.6)	0.1 (6)	0.2 (12)	12	58	6
	15			—	φ20	—	φ20					20	89	
	20	—		—	φ22.4	—	φ22.4		0.00833 (0.5)	0.0833 (5)	0.167 (10)	20	89	
	30	—		—	—	—	φ25	IWRC6×Fi(29) B Class JISG3525	0.00667 (0.4)	0.055 (3.3)	0.11 (6.6)	20	89	
	40	6.5	—	—	—	—	φ22.4 (8falls ※1)	6×Fi(29) B Class JISG3525	0.005 (0.3)	0.0417 (2.5)	—	20	89	
		—	11.5	—	—	—								
	45	—	12.5	—	—	—	φ25 (6falls ※1)	IWRC6×Fi(29) B Class JISG3525	0.005 (0.3)	0.0367 (2.2)	—	20	89	
		—	19	—	—	—								
HU3	10	8	12	—	φ16	φ16	φ16	6×Fi(29) B Class JISG3525	0.015 (0.9)	0.15 (9)	0.225 (13.5)	18	90	4
	15			—	φ20	—	φ20					30	130	
	20	—		—	φ22.4	—	φ22.4		0.0125 (0.75)	0.125 (7.5)	0.183 (11)	30	130	
	30	—		—	—	—	φ25	IWRC6×Fi(29) B Class JISG3525	0.00833 (0.5)	0.0833 (5)	0.125 (7.5)	30	130	
	40	6.5	—	—	—	—	φ22.4 (8falls)	6×Fi(29) B Class JISG3525	0.00667 (0.4)	0.0617 (3.7)	—	30	130	
		—	11.5											
	45	—	12.5	—	—	—	φ25 (6falls)	IWRC 6×Fi(29) JISG3525	0.00667 (0.4)	0.055 (3.3)	—	30	130	
		—	19											
	50 ※2	—	—	—	—	—	—	—	0.005 (0.3)	0.05 (3)	—	30	130	
		—	—	—	—	—								
	60 ※2	—	—	—	—	—	—	—	0.00416 (0.25)	0.0416 (2.5)	—	30	130	
		—	—	—	—	—								

Type	Capacity(t)	Traversing Monorail・Low-head type speed m/min Magnetic contactor operation 50 Hz	60 Hz	INV Operation Low speed	High speed	Motor Magnetic contactor operation Out put (kW) 50 Hz	60 Hz	Rated Current (A) 50 Hz	60 Hz	Poles	Double rail type speed m/min Magnetic contactor operation 50 Hz	60 Hz	INV Operation Low speed	High speed	Motor Magnetic contactor operation Out put (kW) 50 Hz	60 Hz	Rated Current (A) 50 Hz	60 Hz	Poles
U3	1/2	0.35 (21)	0.417 (25)	0.0417 (2.5)	0.417 (25)	0.22	0.26	1.6	1.5	4	—	—	—	—	—	—	—	—	4
	1										—	—	—	—	—	—	—	—	
	2					0.5	0.6	3.2	3.1		—	—	—	—	—	—	—	—	
	2.8										0.35 (21)	0.417 (25)	0.0417 (2.5)	0.417 (25)	0.5	0.6	3.2	3.1	
	3																		
	5					0.85	1.0	4.8	4.7										
	7.5	0.2 (12)	0.25 (15)	0.025 (1.5)	0.25 (15)										0.85	1.0	4.8	4.7	
	10					1.5	1.8	8.5	8.1										
	15					0.85 ×2	1.0 ×2	4.8 ×2	4.7 ×2						1.5	1.8	8.5	8.1	
	20					1.5 ×2	1.8 ×2	8.5 ×2	8.1 ×2										
	30	—	—	—	—	—	—	—	—	—	0.25 (15)	0.3 (18)	0.03 (1.8)	0.3 (18)	1.5 ×2	1.8 ×2	8.5 ×2	8.1 ×2	
	40	—	—	—	—	—	—	—	—	—					0.75 ×4	0.75 ×4	4.1 ×4	3.6 ×4	
		—	—	—	—	—	—	—	—	—									
	45	—	—	—	—	—	—	—	—	—									
		—	—	—	—	—	—	—	—	—									
HU3	10	0.2 (12)	0.25 (15)	0.025 (1.5)	0.25 (15)	1.5	1.8	8.5	8.1	4	0.25 (15)	0.3 (18)	0.03 (1.8)	0.3 (18)	0.85	1.0	4.8	4.7	4
	15					0.85 ×2	1.0 ×2	4.8 ×2	4.7 ×2						1.5	1.8	8.5	8.1	
	20					1.5 ×2	1.8 ×2	8.5 ×2	8.1 ×2										
	30	—	—	—	—	—	—	—	—	—					1.5 ×2	1.8 ×2	8.5 ×2	8.1 ×2	
	40	—	—	—	—	—	—	—	—	—					0.75 ×4	0.75 ×4	4.5 ×4	3.8 ×4	
		—	—	—	—	—	—	—	—	—									
	45	—	—	—	—	—	—	—	—	—									
		—	—	—	—	—	—	—	—	—									
	50 ※2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—									
	60 ※2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—									

※1 Please note that 40t is 8falls and 45t is 6falls.（Please contact us for 60t separately.） ※2 Please contact us for 50t and 60t separately
※3 Rope specification of 1t 2falls is 6×Fi(29) ※4 It'll be motor capacity 7.2kW and electric current 40A in case of 4.8t.
※5 Please choose which growing powerful is, "business driving" or "inverter driving".

Standard Specifications

- ●Power supply…3-phase 200V 50/60Hz control 200V, 220V 60Hz control 220V
  (400Vclass is also available)…3-phase 400V 50/60Hz control 200V, 440V 60Hz control 220V
  3-phase 380V 50Hz control 48V(100V and 24V are also available)
- ●Operating method…Push button switch operations

	1/2t~ 45t
Suspended type Frame mounted type	4 Points ON OFF U D
Motor operated traversing hoist	8 Points ON OFF U D E W S N

※Above push buttons are all 2 step push buttons excluding "ON" and "OFF"
- ●Rating…Hosting（less than 5t）40%ED(63% of load rating). 400S/Hr
  （More than 7.5t）25%ED(63% of load rating). 150S/Hr JIS C 9620
  Traversing 30min(JIS C 9620)
- ●Power supply system…Cable feeding, trolley feeding(only double trolly)
- ●Ambient air temperature…-10℃ to 40℃(Non congelation)
- ●Ambient air humidity…90% or less(Non condensing)
- ●Enclosure…Simplified out door type(JIS C 0920. equivalent to IP-44)
- ●Please prepare the shelter place or the instlation of rain cover when it is used in outdoor.
- ●Applicable standard…JIS C 9620 electric hoist/crane structure standard.
- ●Color coating…Main body:Metallic gray(Equivalent to Munsell N4.0)
  Hook block:Munsell7.5YR7/14
  Pushbutton:Equivalent to Munsell7.5YR7/13

Note :There are differences between 200V class and 400V(380V) class in outline and specifications, etc. Please contact us for 400V(380V) class separately.

New Inverter Hoist U3·HU3 Type

Are you struggling with the sway of the load when you move the load by crane?

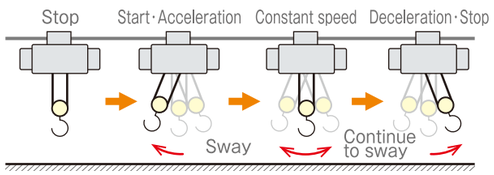
1 Anti-sway function can restrain the sway of the load

U2 Type

It can be dangerous due to sway of the load

Without Ant-sway function

There are risks of collision and collapse of the load due to sway of the load during traversing operation.

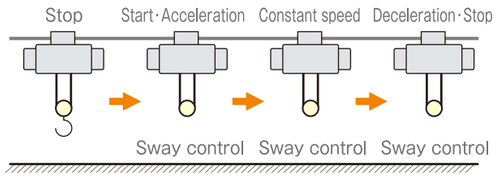


U3・HU3 Type

Even a beginner can operate the crane safely and work efficiency can be improved.

With Ant-sway function

Anti-sway function can restrain the s way of the load at traversing operation and improve the safety and work efficiency.



Points of Anti-sway control

- The effect of Anti-sway function can contribute to secure worker's safety.
- Work efficiency can be imroved by restraining the sway of the load during traversing operation.
- The risk of workers who are not used to operate the crane can be reduced.

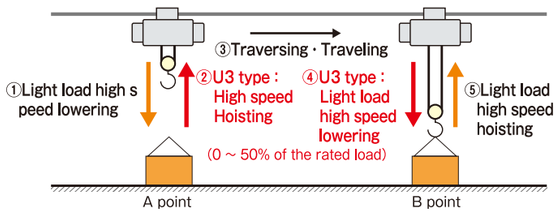
※The swing quantity of the load is 1/5 or below with comparing to that of U2 type.
(It is necessary to set the length of pendulum to use Anti-sway function)

2 Light Load High Speed Function(Wide Range)

Type	Name of function	Range of light load detection
U2 Type Hoist	Light load high speed function	0~25% of the rated load
U3·HU3Type Hoist	Light load high speed function(Wide range)	0~50% of the rated load

The detection range of Light load high speed function is expanded.

Example) Move the load from A point to B point



The points of Light load high speed function (Wide range)

- If hoists are less than 7.5 ton, hoisting speeds are changed automatically to 1.5 x faster than standard speed, and if the hoists are over 10 ton hoist, they are changed to 2x faster than standard speed. (It depends on the number of motor poles)
- The judgement value is changeable in the rage of 0% to 50%of the rated load. Frequency setting of Ligh load high speed operation can also be changed.
- Light load high speed fuction can be used even under combined hoisting operation.

※In the case of long lift models, there is a possibbility that Light load high speed fuction can not be used. Please contact us for long lift models.
※There is a possibility that the Light load high speed function can not be used at 50% of the rated load due to the variation of jugdement arised from the environment(voltage, temperature, etc) in which the hoists are used.

- The factory setting of the ligh load detection level is 25% of the rated load.

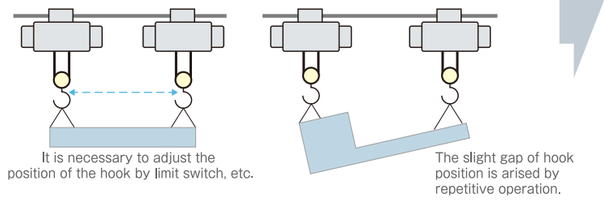
Don't you feel annoyed to adjust the position of the hook at combined hoisting operation ?

3 Synchronized control function(specialized function) offers safey and control the position of the hook automatically by transmission board.

U2 Type

Strain to adjust the position of the hook.

- In general, it is necesarry to adjust the position of the hook every time.
- It is necesarry to reset the position of the hook by limit switch or swhitch to single operation mode.

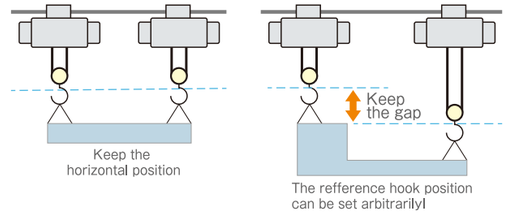


U3・HU3 Type

Ease of combined hoisting operation due to position of the hook is automatically adjusted.

- Synchronaized control fuction monitors the mutual hook position by transmission board and automatically adjust the hook position gap.
- The refference hook position can be set voluntarily by the offset function of combined hoisting operation.

Synchronized control Image



The points of Synchronaized control function

①Autmomatically adjusting the gap of hook position

- Synchronized control function monitors the postion of the hook automatically at the time of start of hoisting and lowering, constant operation and stop. (It can be set to active or inactive)

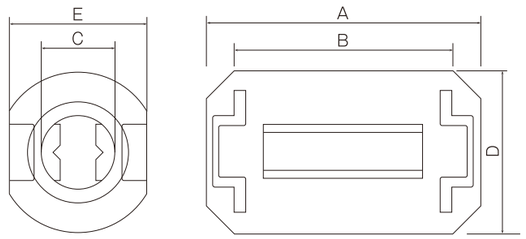
②The offset function of combined hositing operation and control

- The reference hook position and switching from combined hositing operation to single hoisting operation can be set voluntarily by the parameter setting or external input signal.

※2 hoists can be even used. When using this function, connect 2 hoists.
(If hoists cannot be connected mechanically, kindly install a traversing interlock)

Please use below products when it is necessary to comply with IEC61000. They can reduce the effect of noise.

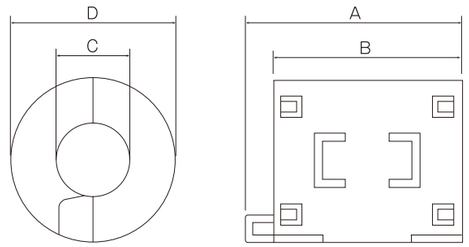
Type Code:3H817(for 2 terns)



Outer dimensions				Applicable cable (mm)
A	B	C	D	
35.0	28.0	9.0	17.4	Suitable cable(Φ4.2㎜)

Product name	Ferrite core(for 2 terns)
Type	E04SR200935AB
Weight(g)	20
Impedance(Ω)	10MHz:90 100MHz:108

Type Code:3H818(for 3 terns)



Outer dimensions				Applicable cable (mm)
A	B	C	D	
39.0	34.0	13.0	30.0	Suitable cable(Φ4.2㎜)

Product name	Ferrite core(for 3 terns)
Type	ZCAT3035-1330
Weight(g)	62
Impedance(Ω)	10MHz:80 100MHz:150

■ When is it necessary ?

In the case of transmission does not work due to the noise, distance from the power supply cable is not enough, and take masures gainst noisebefore the full-scale operation of the crane attach the noise filter(Ferrite) as a countermasure.

■Differences between 2 terns and 3 turns

Althought if the number of turns is higher, it is effective due to the attenuation characteristic,the communicatins countermesures differ depending on the amount and quality of noise and the length of transmission cable, etc. The stray capacitance and magnetic coupling increase If the number of wraps increases.
Please select and implement the effective countermasures according to the environment and the systems in which it is used.