NAI quip Cranes

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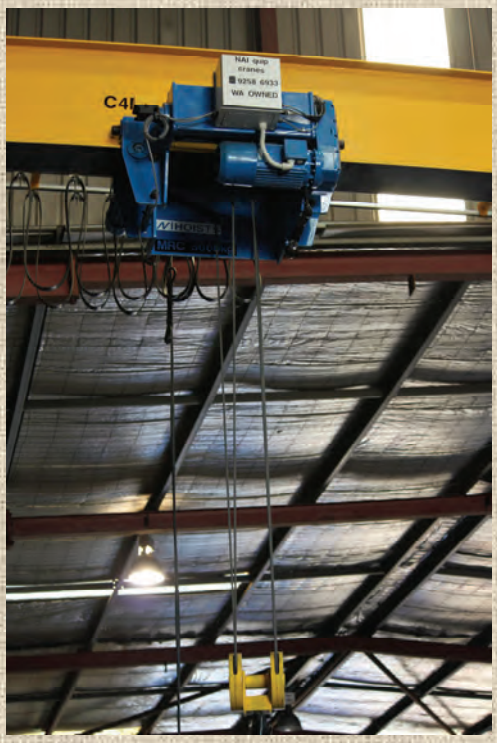
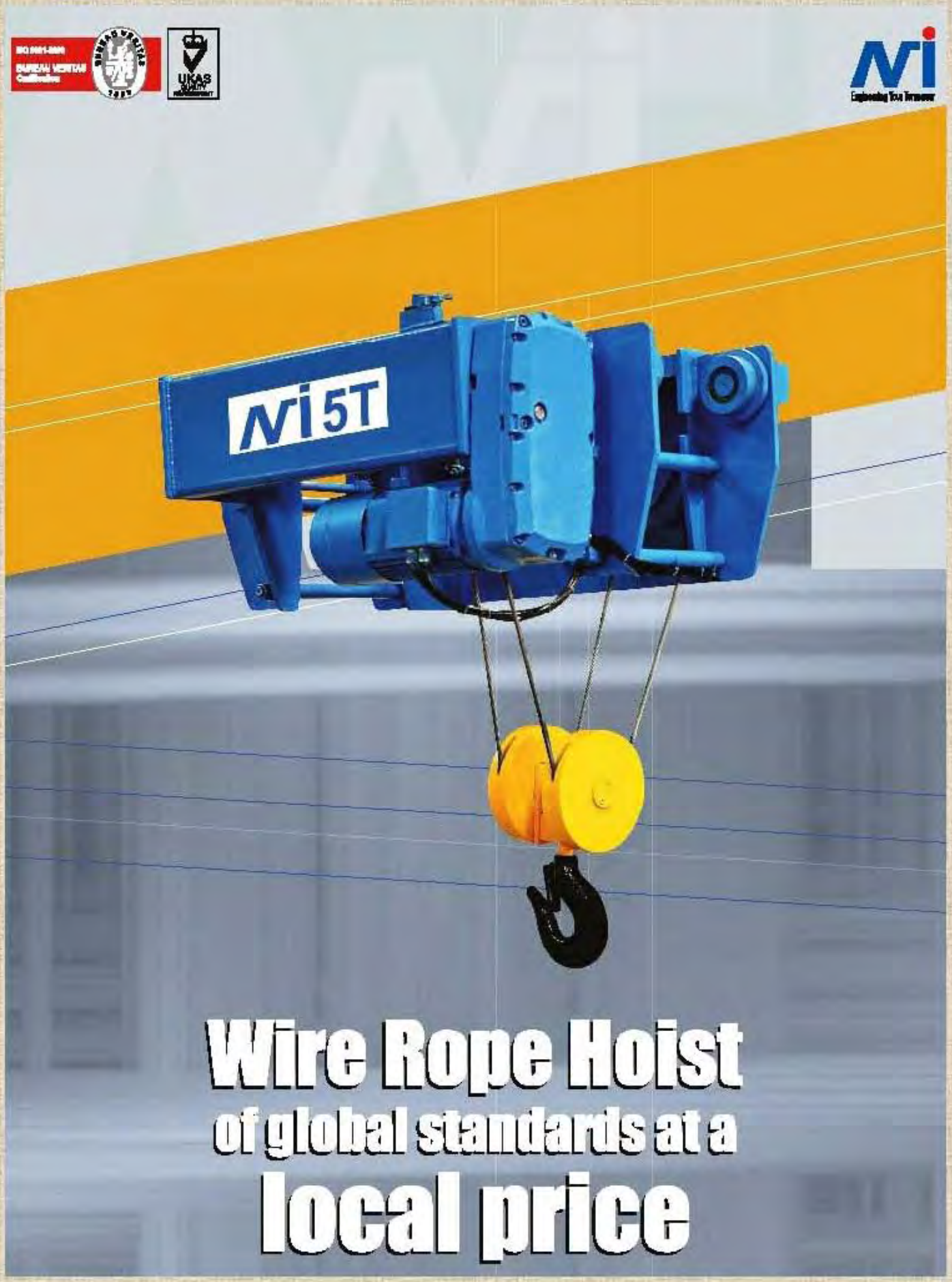


Suppliers of :

- AVI Hoists
- GIS electric chain hoists
- JDN Hoists and Components
- Gantry cranes
- Portal cranes
- Jib cranes
- Ikusi Radio Controls
- Telecrane Radio controls
- Hydromech Bogies and Components
- SEW Eurodrive Motors & Gearbox
- 24 Hour Crane Breakdown Service

Manufacturing cranes for over 30 years

NAI quip Cranes

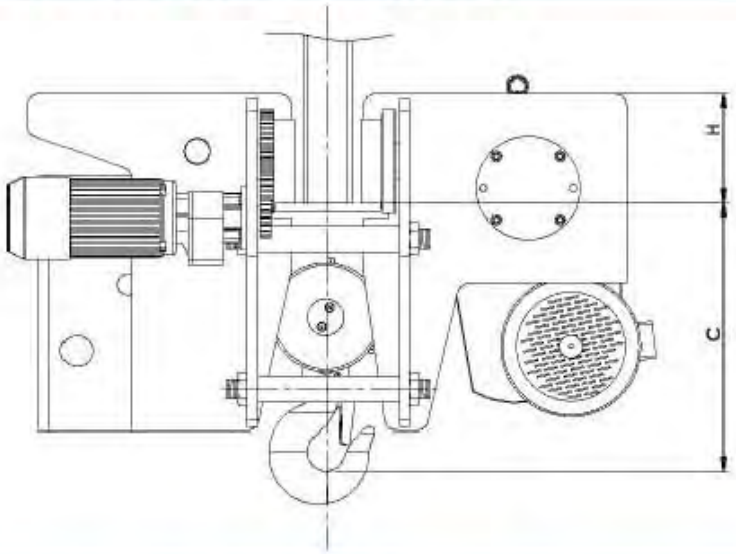


Wire Rope Hoist
of global standards at a
local price

NAI quip Cranes

German technology has been the principle choice, AVI makes for its customers.

AVI Single Girder Electric Wire Rope Hoists (Type E)



Model	SWL (t)	Hook Path	FEM	ISO	H (mm)	C (mm)
E 2000	2.0	6 , 9	3m	M6	126	450
E 3200	3.2	6 , 9	2m	M5	126	450
E 5000	5.0	6 , 9	1Am	M4	158	600
E 5000S	5.0	6 , 9	3m	M6	158	600
E 6800	6.8	6 , 9	2m	M5	158	600
E 10000	10.0	6 , 9 ,12	2m	M5	232	600
E 12500	12.5	6 , 9 ,12	2m	M5	232	600

Features

- Modular lightweight Construction and compact designed hoists with very low headroom
- Hoisting Gearbox, motor and brake is one single compact unit eliminating any coupling and alignment problems
- All Gear Drives are made in Germany and are lifetime lubricated
- Two Speed Hoisting drive in 6/1 ratio with soft start/stop feature
- Two speed cross travel drive in 4/1 ratio with built in flywheel and soft start/stop feature
- Extremely low noise levels during operation
- All motors are pole changing crane duty motors with class F insulation
- Dual disc asbestos free DC brake designed for first adjustment after 1 million cycles
- Wide ,large diameter steel wheels with permanently lubricated bearings
- Equipped with two upper and two lower position geared limit switch
- Heavy duty wire rope guide for rope guidance
- Easy to service electrical control system
- Overload limit switches available as an option
- Variable frequency drive available as an option on hoist as well as cross travel drives
- Remote control pendant available as an option
- Available in load range from 2 ton to 12.5 tons in different class of duties and lift and hoisting speeds

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ABN: 59 765 399 875

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AVI Type U

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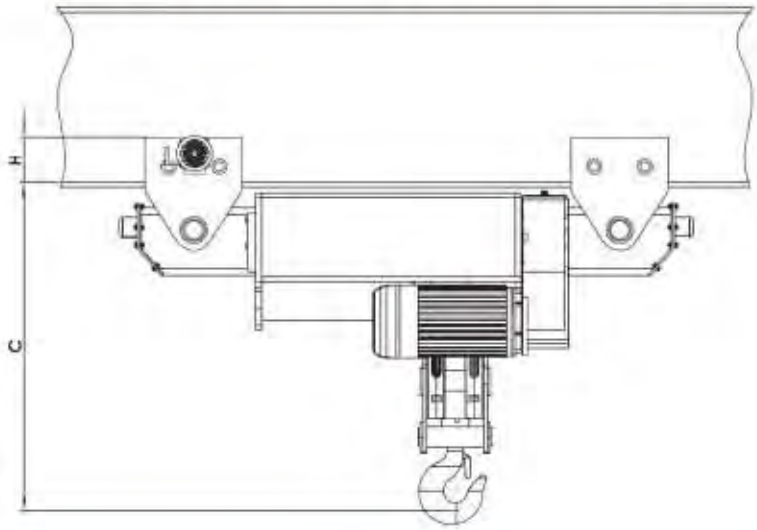
Address: 52 Railway Parade,
WELSHPOOL W.A 6106

German technology has been the principle choice, AVI makes for its customers.

AVI Single Girder Electric Wire Rope Hoists with twin trolley (Type U)



Model	SWL (t)	Hook Path (m)	FEM	Hoisting speed (mpm)	C (mm)	H (mm)
U 10000	10.0	9,12,15	2m	0.66/4.0	1050	210
U 12500	12.5	9,12,15	2m	0.66/4.0	1050	210
U 16000	16.0	9,12,15	2m	0.66/4.0	1200	210
U 20000	20.0	9,12,15	2m	0.53/3.2	1600	210
U 25000	25.0	9,12,15	1AM	0.53/3.2	1600	210
U 25000S	25.0	9,12,15	2m	1.0/4.2	1600	210

Standard reeving is 4/1,except model 25000S which is in 6/1 reeving

Features

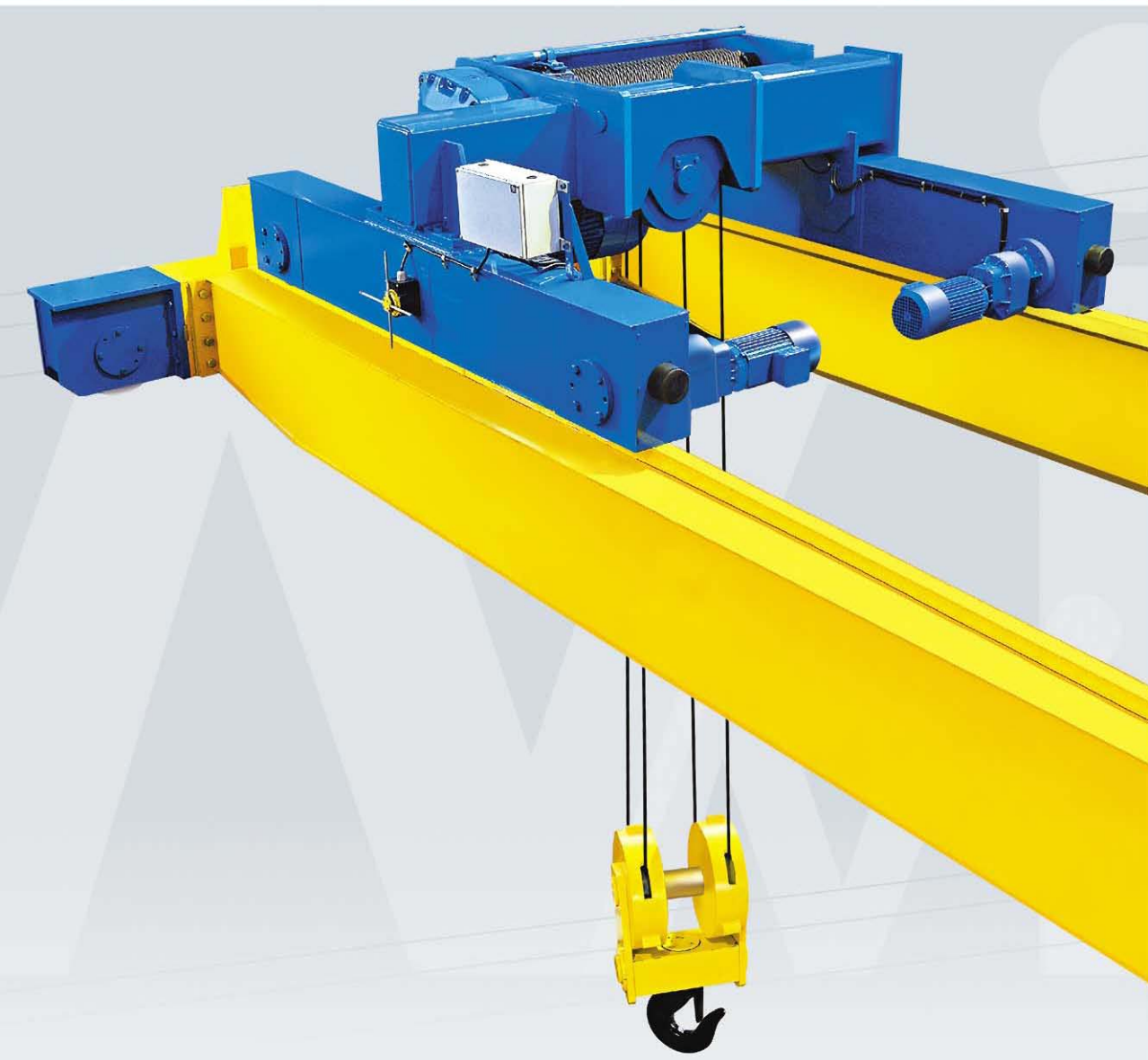
- Modular lightweight Construction and compact designed hoists with very low headroom
- Hoist with twin trolley designed for high loads and high lift
- Evenly distribution of load over eight wheels
- Hoisting Gearbox, motor and brake is one single compact unit eliminating any coupling and alignment problems
- All Gear Drives are made in Germany and are lifetime lubricated
- Two Speed Hoisting drive in 6/1 ratio with soft start/stop feature
- Two speed cross travel drive in 4/1 ratio with built in flywheel and soft start/stop feature
- Extremely low noise levels during operation
- All motors are pole changing crane duty motors with class F insulation
- Dual disc asbestos free DC brake designed for first adjustment after 1 million cycles
- Wide ,large diameter steel wheels with permanently lubricated bearings
- Equipped with two upper and two lower position geared limit switch
- Heavy duty wire rope guide for rope guidance
- Easy to service electrical control system
- Overload limit switches available as an option
- Variable frequency drive available as an option on hoist as well as cross travel drives
- Remote control pendant available as an option
- Available in load range from 10 ton to 25 tons in different class of duties and lift and hoisting speeds
- Standard cross travel speed is 5/20 mpm

ISO 9001-2000
BUREAU VERITAS Certification

UKAS QUALITY MANAGEMENT

Engineering Your Tomorrow

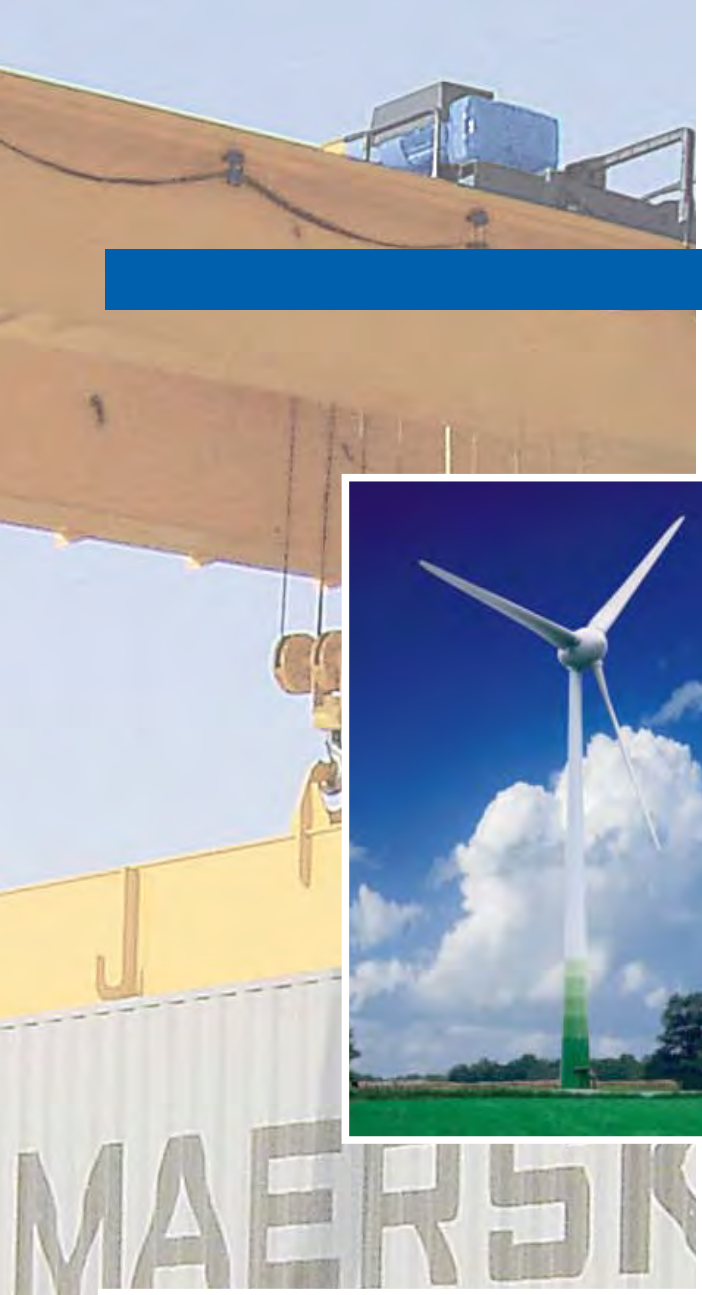
AVI Double-Girder Crab Unit



ABM Greiffenberger
We put ideas into gear

Drive units for cranes and hoists

Durable
Reliable
Powerful



Reliability in many areas

ABM Greiffenberger develops and manufactures cutting edge drive unit solutions in highest quality. The individual components of our system solutions like motor and gearbox are from one single source and are exactly tuned to each other already in the development phase. That way industry specific and optimized solutions are developed for well-known manufacturers in the areas of lifting technology, warehouse logistics, pallet trucks, wind power plants, biomass heating systems electric vehicles or other markets.

Innovation, sustainability, partnership and high flexibility are the dictums of our actions. That way highly qualified personnel develop and produce more than 300,000 drive units annually. International subsidiaries as well as partners in all important industrial nations assure close contact to our customers world-wide.

1 million hoist drive units

ABM Greiffenberger develops and manufactures hoist drive units for more than 40 years. More than one million travel and hoist drive units “made in Germany” have been delivered for cranes all over the world. Consistently optimized for quality and benefit the drive technology of ABM Greiffenberger strengthens the competitiveness of crane manufacturers on all continents.

Safety without compromises

Longevity, flawless function and safety even in rough conditions: Those are the core requirements for industrial cranes. At high throughput as well as frequent starts and reversals delicate positioning has to be assured – even at sophisticated operation. ABM Greiffenberger offers a broad range of hoist and travel drive units especially for this goal, all achieving highest safety requirements.

Hoist drive units and motors

Hoist drive units from ABM Greiffenberger lift loads between 3.2 t and 40 t with absolute safety and reliability. The aluminum housings from the own aluminum die-cast shop of ABM Greiffenberger care for low weight and high corrosion resistance. U-shaped mounting of the drums allow for simple and space saving mounting.

Many advantages thanks to ABM Greiffenberger know-how: The inrush-current of the motors is low, a dynamic start-up curve allows for high crane capacity. ABM Greiffenberger motors care for precise and safe load handling with soft acceleration, extreme quietness and low-wear safety brakes, even at high throughput rates.

Naturally, ABM Greiffenberger hoist motors can also be sourced without gearbox.

Travel drive units

Together with the travel drive units from ABM Greiffenberger – available as helical gearbox (G-series) or parallel shaft gearbox (FGA-series) with integrated safety brake – system solutions are developed ready for installation. With two product lines ABM Greiffenberger offers fitting solutions for all speed and precision requirements:

PROFI-LINE Travel drive units with two travel speeds

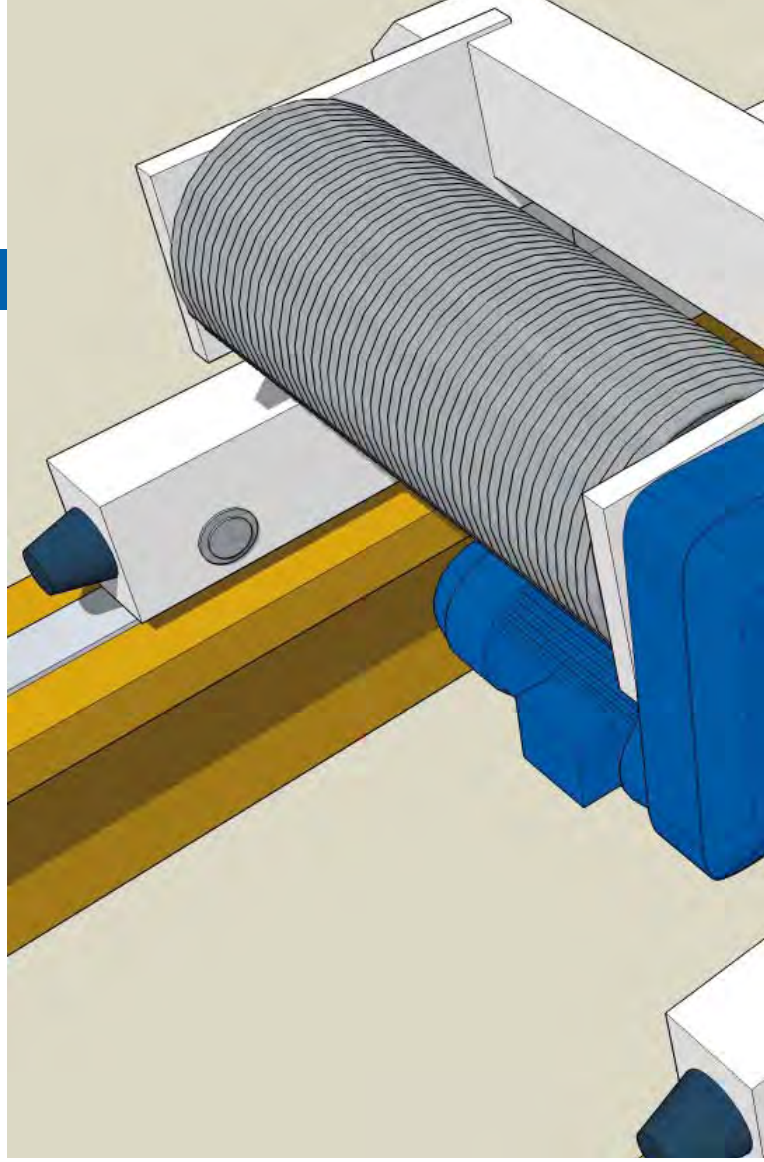
AUTOMATION-LINE Travel drive units for highest requirements in reference to variable travel speeds and positioning precision. Optimized matching of speed, vibration free travel and sensitive positioning allows for minimum clock cycles.

Electronic drives

ABM Greiffenberger offers a complete drive unit technology for crane equipment with the Drive Controller. The Drive Controller allow for an optimized performance for all applications by individual parameterization capabilities. Additionally, the number of variants can be reduced by powering different wheel diameters with the same travel drive unit.

High-quality drive unit solutions for cranes and hoist

Hoist and travel drive units **from one source** for safe **lifting and moving** of loads



40 years of experience and more than one million hoist drive units. That is the sound standing foundation of the specially designed product program of ABM Greiffenberger for the demanding hoist technology.

ABM Greiffenberger offers a complete system solution from one source of hoist drive units over hoist motors all the way to travel drive units and frequency inverters.

ABM Greiffenberger stands for powerful, durable and cutting edge solutions for your competitive advantage.

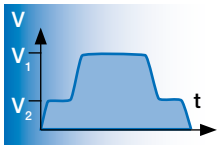
Hoist drive units: Powerful and safe

The compact hoist drive units of ABM Greiffenberger are equipped with a 12/2-pole asynchronous cylinder-rotor motor as standard. ABM Greiffenberger offers 4-pole hoist motors with encoder for the use in frequency controlled hoists.

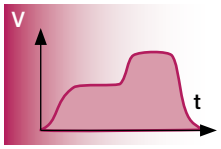
The motor transforms the torque through the special hoist drive unit to the drum. That results in an extremely compact design. The top-quality helical gearing allows for low wear and quiet operation – even at high loads. Mounting of the drum on the output shaft allows for cost savings.

Travel drive units: Dynamic and low vibration

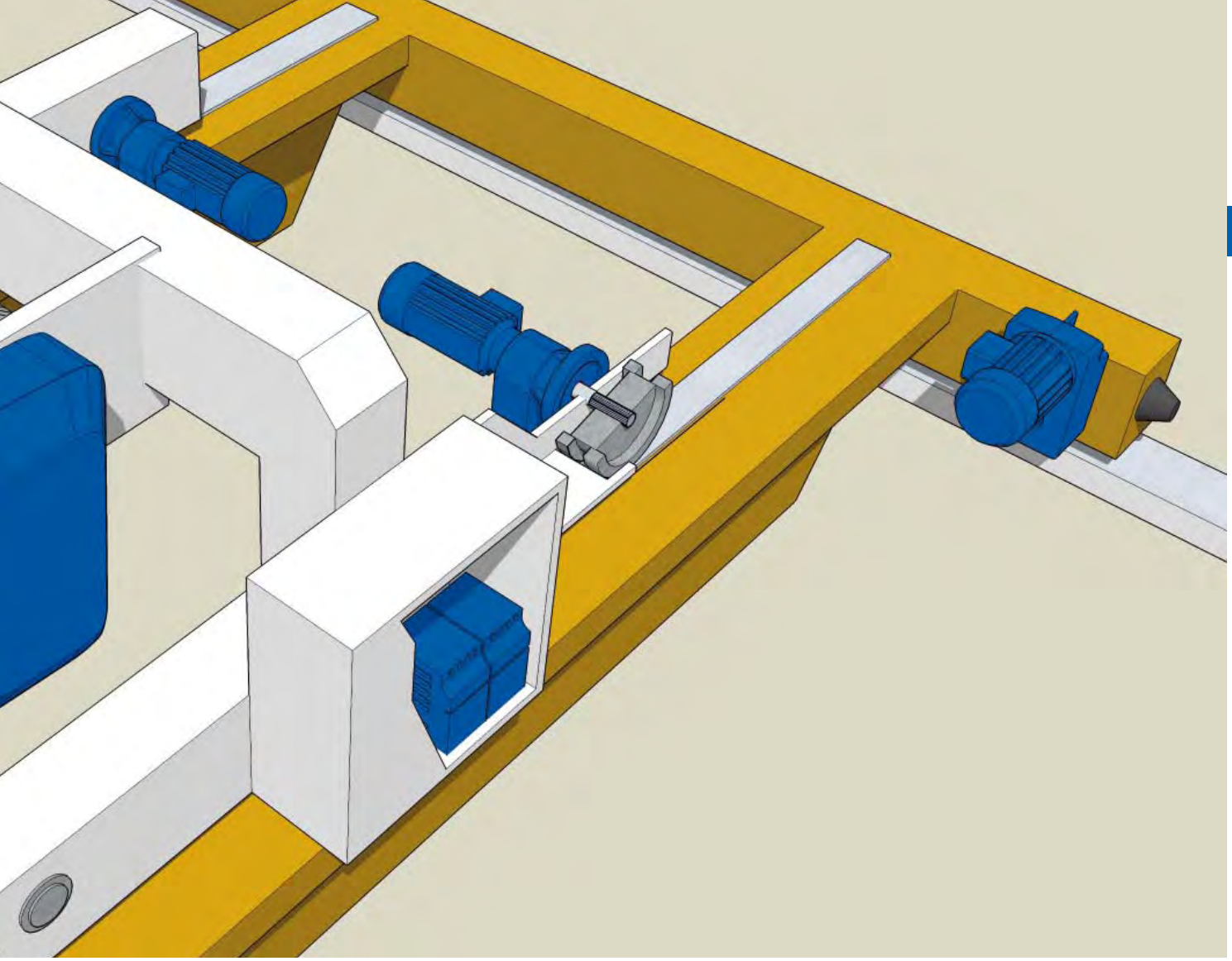
Two drive unit series achieve different requirements to speed and precision:



The ***PROFI-LINE*** offers two travel speeds. Pole-switching motors (8/2-pole) with specially designed windings and rotors allow for safe soft start. Typical operational areas are low-vibrant transport of sheet metal and coils or handling of cases, containers and components in assembly halls.



The ***AUTOMATION-LINE*** stands for variable speeds. Especially for inverter use designed 4-pole motors can be operated with an 87 Hz-characteristic. Important parameters like acceleration and deceleration ramps can be adjusted individually via the controller. The exceptionally soft start and braking characteristic of the drive units reduces load swings to a minimum.



AUTOMATION-LINE drive units are especially well-suited for use in the glass industry, handling of paper coils or insertion of moulds or other large tools.

Design according to FEM

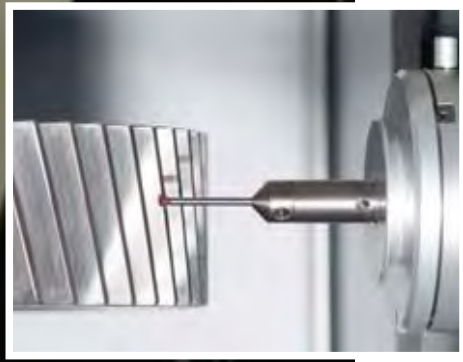
With the specification of load, lifting speed and FEM-group lifting technology specialists at ABM Greiffenberger configure the right drive unit. The classification in FEM-group 2m or higher emphasize for the quality of the drive units. For extremely competitive conditions you receive an extended service life (SWP).

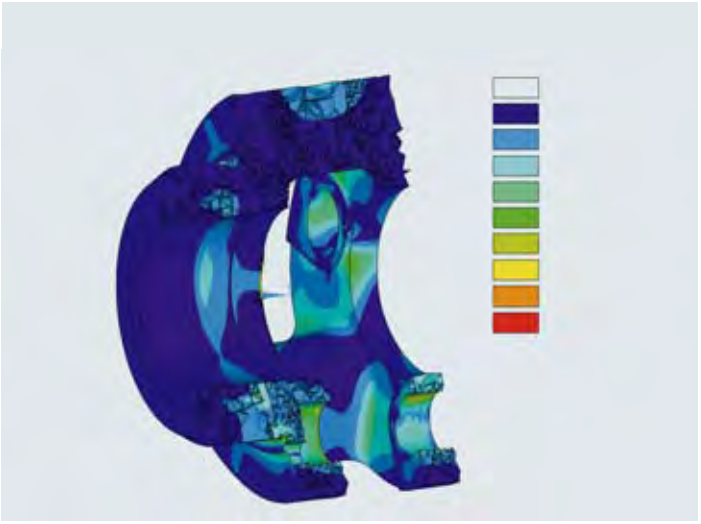
Even outside of the regular product portfolio you are in good hands at ABM Greiffenberger. With profound know-how and powerful design software (like KISSsoft, CAD-Tools, etc.) experienced engineers develop optimized drive unit solutions. FEM-analysis for validation of the development results are as self-evident as customized tests in a well-equipped lab.

Safe, durable, reliable

Even with difficult voltage conditions and in rough environments the powerful drive units of ABM Greiffenberger function reliable and safe. Their dynamic start-up curve assures high starting, cogging and breakdown torques despite soft start.

Thereby, a low-wear double surface safety brake with fast-excitation rectifier takes care of a safe slow-down of your loads. This brake engages automatically in case of a power loss. It responds fast in daily operation and is extremely durable and wear resistant. Should service be necessary after 1 Million cycles an automatic wear indicator will inform the user accordingly.





Quality from the beginning

At ABM Greiffenberger quality starts with the first design step – the careful analysis of requirements of targeted markets. It continues on in a detailed and prospective design as well as diligent choice of used materials and suppliers.

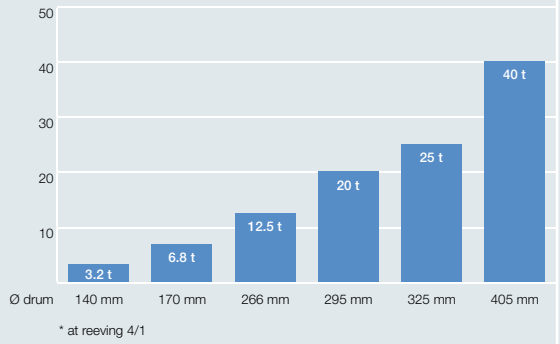
Naturally, the manufacturing processes of ABM Greiffenberger are accompanied by quality checks. Whether 100% checks, durability tests or laser supported detail measurements – a close meshed net assures the reliability of our products. A certification according to DIN ISO 9001:2008 is as self-evident as a consequent environmental management system according to DIN ISO 14001:2004.

A smooth licensure and approval of your crane equipment is assured by the conformity of our drive units with important standards like CE, VDE, DIN, UL / CSA, CCC.

ABM Greiffenberger
We put ideas into gear

Overview **hoist drive units**

Last [t]	GH 3201	GH 5000A	GH 12500	GH 20000	GH 25000	GH 40000

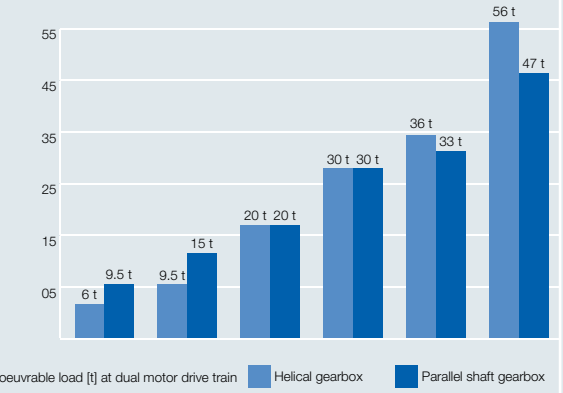


Hoist drive units

Type of motor	12/2-pole or inverter duty
Rated output	Up to 38 kW
Type of gearbox	3-stage aluminium parallel shaft gearbox
Lifting speeds	4 / 5 / 6.3 / 8 m/min at reeving 4/1
Protection class	IP 55 (optional IP65)
Cooling	Self- or forced cooling
Design	Acc. to FEM

Overview **travel drive units**

Wheel Ø	125	160	200	250	315	400



Travel drive units

	PROFI-LINE	*AUTOMATION-LINE*
Standard travel speeds	5/20 m/min and 10/40 m/min	20 m/min and 40 m/min
Type of motor	8/2-pole	Inverter duty
Connection	Star/star	Delta/star
Duty cycle	S3 - 60% - 180 c/H; FEM 2m	
Protection class	IP54 (optional IP55, IP65)	
Brake	Safety brake with bridge-rectifier	
Type of gearbox	2- or 3-stage aluminium parallel shaft gearbox (up to 1,350 Nm) or helical gearbox (up to 2,060 Nm)	

Electronic drive unit technology

Voltage supply	3-phase, 380 – 480 V
Line frequency	50 - 60 Hz
Motor output	0.75 - 11.0 kW

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We put ideas into gear

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ISO 14001
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Company

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NAI quip CRANES L/T Bogies

EWB Bogies

NAI quip PTY LTD manufactures an extensive range of bogies, ranging from 125mm to 710mm diameter wheels. These bogies are fabricated from a rectangular hollow section with anti-drop and derailment plates at each end. With the 500 and the 700mm diameter wheels the bogies are fabricated from four plates prepared and welded to form a box section. Internal diaphragms are enclosed to secure tie the box section.
Wheels are fitted with sealed for life deep groove ball bearings also the wheel assembly is designed for easy removal.

Typical bogie assembly

Drive wheels are driven by an internal spline in the centre of wheel

Typical bogie and drive assembly

NOTE: Wheel load shown are for each wheel
Insert wheel base required after the model no. E.g. EWP130-2.5 for a 2.5m wheelbase
For wheel base greater than 3.5m contact us for further details.

Refer catalogue SACS

ACS contactors CA 7

4 – 45 kW

Innovation and ease of use provide solutions for your control systems

Coil terminals are always in the correct position

The coil terminations on CA 7 contactors can be supplied optionally at the top or bottom of the contactor. It is also a simple task to change this arrangement on-site should the requirements change.
When CA 7 contactors are used in combination with KTA 7 motor circuit breakers the bottom coil terminations are used. When used with standard CT 7 thermal or CEP 7 electronic overloads the top coil terminals should be selected.

Advanced safety and reliability features

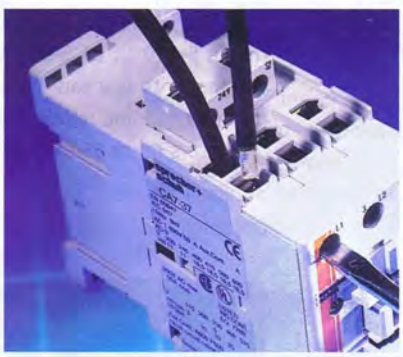
The entire CA 7 line features a mechanically linked contacts, such that if a main power pole welds, adequate clearances exist (≥0.3 mm) to ensure that the auxiliary contacts do not change state when coil power is removed and device tries to open. This is a requirement in safety circuits.
Reliability is further assured by 'cross-stamped' auxiliary contacts, which provide multi-point reliability in low current, low voltage applications.

Mechanical interlocks save space

Only 9 mm wide, the CM 7 mechanical interlock snaps into place between any of the CA 7 contactors. You can also interlock different sizes of the CA 7 range with the same interlock.
The basic mechanical interlock is supplemented by a variation with built-in N/C auxiliary contacts for electrical interlocking. This version is also only 9 mm wide and further minimises space requirements.

CA 7 contactors provide improved wiring terminals

The main terminals of all CA 7 contactors are designed to accept at least two cables. At the same time they comply with safety standards regarding touch protection.
The larger contactors CA 7-30 and upwards employ a special cage terminal which allows the connection of two cables in separate chambers.
The ease of wiring with CA 7 contactors saves both time and money.



With Sprecher + Schuh you can choose the best protection for your motors


CT 7


CT 7K


CEP 7-ED


CEP 7C


CEP 7-EE

Thermal overloads type CT 7K

Refer catalogue CEP 7-SSOR

ACS motor protection relays

CEP 7 electronic overload relays

Outstanding CEP 7 electronic overloads now offer even more:

Improved range

- Wider current adjustment range (5 : 1) significantly reduces inventory requirements
- Extremely low heat generation (150 mW) results in cooler panels and switchboards
- Self-powered with no separate power supply connection required
- Advanced phase failure detection (typically 3 seconds)
- Visible trip indication
- Direct current measurement for precise thermal modelling ensures accurate motor protection
- Industrial, quality design
- Two high performance versions available to meet specific application requirements
- High level of resistance to shock and vibration
- Low voltage compatible contacts (17 V, 5 mA) – ideal with PLC systems
- Includes trip and alarm contacts – 1 N/C and 1 N/O
- Directly mounts to CA 7 and CA 6 contactors
- Unique latching mechanism and strengthened power connections provide greater mechanical connection with CA 7 and CA 6 contactors

CEP 7-ED

Adjustable trip classes 10,15, 20 or 30

CEP 7-ED Standard version

- Available from 0.1 to 800 amps
- Trip Class 10
- Manual reset
- Visible trip indicator
- Test/Reset button
- Separate mounting bracket available

5:1 current adjustment range

CEP 7-EE

CEP 7-EE Enhanced version

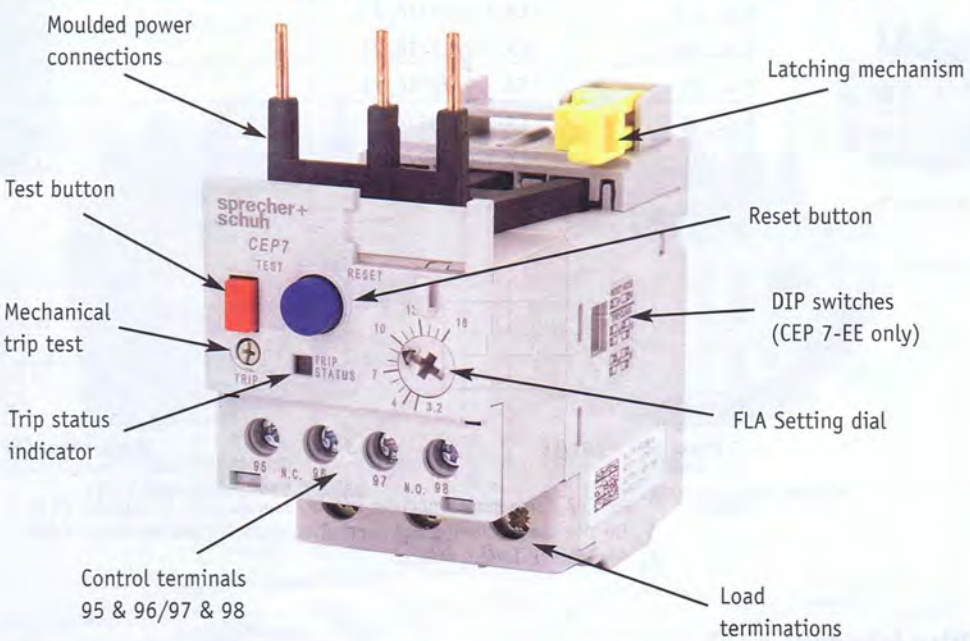
- Available from 0.1 to 800 amps
- DIP switch adjustable trip classes – Class 10, 15, 20 and 30 to suit various load run-up times
- DIP switch adjustable Auto/Manual reset
- Remote reset module available
- Jam/Stall protection module available
- PTC Thermistor relay module available
- Ground Fault protection module available
- Single or three phase models available
- DeviceNet™ module available for fully adjustable jam/stall protection and thermal warning to indicate imminent overload trip
- Profibus® module available

Additional side mount modules enhance product range

CA 7-16 + CEP 7-EE

CEP 7-EEJG

Product feature overview



TERASAKI
Innovators in Protection Technology

Din-T MCBs + RCDs Technical data

Din-T, 3 pole 10 kA MCB

Line protection by means of MCBs

Protective devices shall be capable of breaking any overcurrent up to and including the prospective short-circuit current at the point where the device is installed. One of the protective devices complying with those conditions is the MCB.

Protection against short-circuit

According to IEC 60364 protective devices shall be provided to break any short-circuit current flowing in the circuit conductors before such a current could cause danger due to thermal and mechanical effects produced in conductors and connections. To consider that an installation is well protected against short-circuits, it is required that the protective device complies with the following conditions:

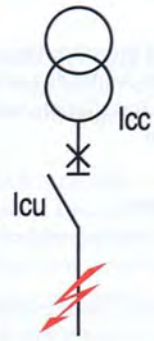
- The breaking capacity shall not be less than the prospective short-circuit current at the place of its installation.

$$Icu \geq Icc$$

- Let-through energy I^2t smaller than admissible energy of the cable.
- According to IEC 60364-4-473 there are some cases where the omission of devices for protection against overload is recommended for circuits supplying current-used equipment where unexpected opening of the circuit could cause danger.

  Examples of such cases are:
  - Excitation circuit of rotating machines.
  - Supply circuit of lifting magnets.
  - Secondary circuits of current transformers.

As in those cases the Iu>Iz, it is necessary to verify the short-circuit value at the point of the installation to ensure the protection (Icc min).

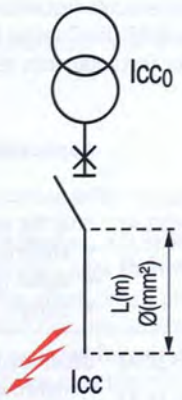


Icc: Maximum value of the short-circuit current in that point.

Icu: Short-circuit capacity of the protective device.

Calculation of Icc

The value of the short-circuit current flowing at the end of a cable depends on the short-circuit current flowing at the beginning of the cable (transformer terminals), the cross-section as well as its length.



Short-circuit current at the transformer terminals (Icc0)

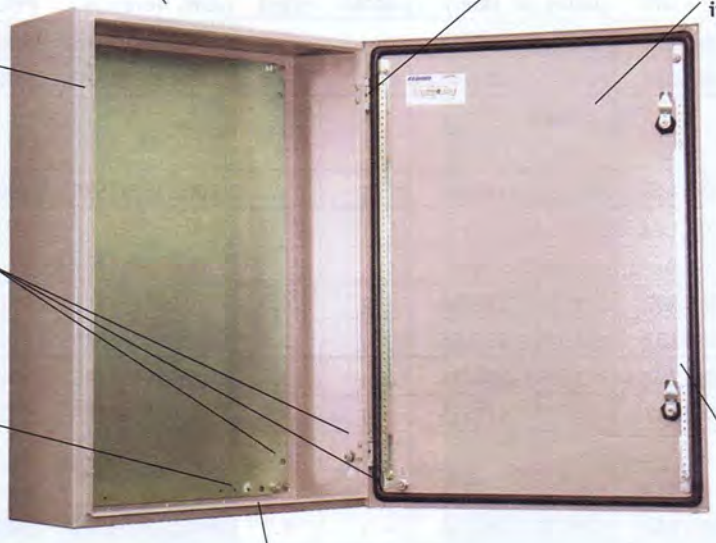
Three phase oil transformer - 400 V

Transformer power kVA	Voltage Ucc In %	In A RMS	Icc0 kA RMS
250	4	352	8.7
315	4	443	10.9
400	4	563	13.8
500	4	704	17.1
630	4	887	21.6
800	4.5	1126	24.1
1000	5	1408	27
1250	5.5	1760	30.4
1600	6	2253	35.5
2000	6.5	2816	40.5
2500	7	3520	46.6
3150	7	4435	57.6

Refer catalogue ETC08

Industrial steel enclosures
Series MAS

Protection class IP 66



Technical data

Material: Body: Steel plate 1.2 mm/1.4 mm (MAS0606021R5 and above) 1.5 mm (MAS1008026R5 and above) Door: Steel plate 1.2 mm/1.4 mm (MAS0605021R5 and above), 1.8 mm (MAS1008030R5 and above). Mounting plate: 2 mm galvanised steel.

Body: Folded and seam welded. Four wall fixing holes are pressed out 2 mm, which protects the back from damage while laying on its back and to allow airflow around the rear.

Door: Surface mounted with 130 ° opening. Concealed removable hinge with captive pin can be mounted to allow left or right hand opening. From size MAS0604015R5 and larger there are two removable mounting profiles in the door. Sealing is ensured by an extruded one piece polyurethane gasket.

Lock: Customised lock with double grip for easy opening of the door, DIN-lock with 3 mm pin and 90 ° movement. 1000 and 1200 mm high enclosures have three point locking. Other inserts are available.

Mounting plate: The plate is marked at 10 mm intervals for easy horizontal positioning of equipment on the mounting plate. On the top and bottom are holes to facilitate cable fixing. Fixed onto M8 press welded studs to the rear of the enclosure. All sizes from 800 mm and above are strengthened by folded edges.

Gland plate openings: Situated at the far rear of the enclosure to accommodate easy cabling onto the mounting plate. Flush mounted. Five different widths and two depths depending on enclosure size.

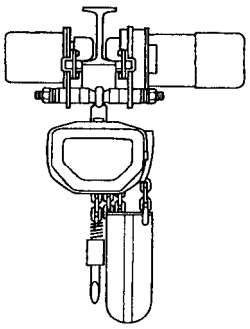
Finish: Body, door and gland plates: RAL 7035 polyester powder structure paint.

Protection: Corresponds with IP 66 and NEMA 4, 12 and 13.

Delivery includes: Two door mounting profiles (size MAS0604015R5 and larger). Mounting plate and gland plate(s) with gasket(s).

Approved by the following institutes:

NAI QUIP CRANES



Why Fit a Crane Mechanisms Utilisation Recording Device Explained

- **Existing Hoists:**
  If you own or operate a wire rope hoist or electric chain hoist and the equipment is over ten calendar years old and you cannot provide records which can prove the utilisation over this period, then the hoist should be re-certified for Continued Safe Use or replaced, as recommended in AS2550.

  With the obvious difficulty in keeping such records manually, we believe the majority of companies will be unable to provide this information if requested. This means that a decision with regards to re-certification for Continued Safe Use can only be based on the ten calendar year time frame, regardless of hoist utilisation.

- **New Hoists:**
  If you recently installed a new hoist, then you should immediately commence keeping accurate records of hoist utilisation. Failure to do so means that when the hoist is ten calendar years old it should be re-certified for Continued Safe Use or replaced.

- **Re-certified Hoists:**
  If you recently had a hoist re-certified for Continued Safe Use, then you should immediately commence keeping accurate records of the hoist utilisation. Failure to do so means that after the re-certified period ***(which should be specified in your re-certification documentation and signed by the qualified certifying engineer who inspected the hoist***) has expired, then it will have to be re-certified again — or replaced.

- **Hoist Utilisation Explained:**
  The design life of a hoist is calculated in full load hours. For example, a 5 tonne capacity hoist with an M4 rating has a design life of 800 hours. So, if the hoist lifted 5 tonnes every lift over an 800 hour period, then the hoist will have reached the end of it's design life. But, as we know, hoists lift varying loads throughout their life. If this varying load/ time utilisation can be proven, then the ten calendar year time frame can be legitimately extended.

- **What Can I Do:**
  Hoists are expensive capital purchases and to ensure that you achieve the maximum design life, regardless of age, you will be required to keep accurate reports that can prove that the hoist has not exceeded the original design life. To be accurate these reports must record the capacity of each load lifted, date of lift, start time and finish time of each lifting cycle. Manual record keeping and the use of devices like hour meters, in our view, do not provide enough information to prove that the hoist is still operating within the manufacturer's original design parameters.

- **The Solution:**

The only method of providing accurate reports is by electronic means — and the **D**ata**P**ro-42**Z** is the solution. The device has the capability to cons tantly monitor hoi st utilisation and store this informat ion in onboard memory. The report (see figure 1) clearly shows the design life hours remaining on the hoist and, because the report can b e do wnloaded wirele ssly, it can b e retriev ed from the safety of floor level . By fitting the **D**ata**P**ro-42**Z** to the hoist, the pro blems with providing accurate utilisation reports are solved — meaning that the end user is guaranteed to achieve th e maximum design life fro m the equipment as it can be proved that, although the hoist may have exceeded the ten calendar years time frame, it has not been overloaded and is still operating within the manufacturer's original design life, or, in the case of a re-certified hoist, the certifying engineer's specified period for Continued Safe Use.

- **Additional Functionality:**

Additional functionality means the **D**ata**P**ro-42**Z** can be:

- connected to report the running hours of the long travel and the cross travel motions
- connected to provide overloading protection, audible and or visual warning devices.
- connected to the LTD-740 digital load display using hard wiring
- interfaced with the LTD-740 digital load display using our **iCoM** wireless module
- interfaced with our **iReaD** stand alone access control module for usage control
- interfaced to email the report at selected intervals using the onboard GSM module
- interfaced with the customer's existing computer network for real time reporting.

- **Reports:**
  The **D**ata**P**ro-42**Z** produces a report, as seen below.

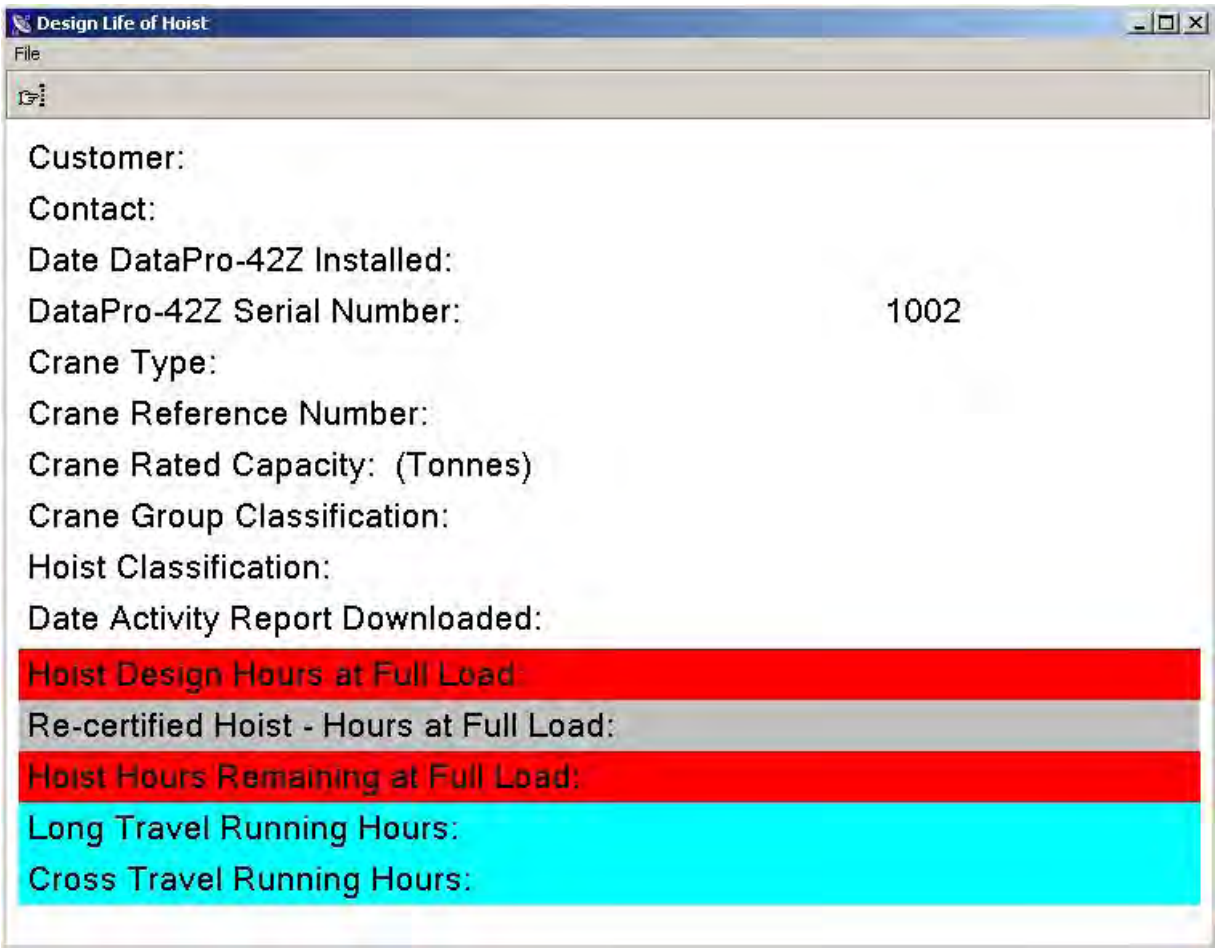


Figure 1

- **Remaining Compliant:**
  Record keeping does not negate the end user's responsibility to have equipment regularly serviced and maintained by qualified personnel, as required in AS2550.

- **Can We Help:**
  Please do not hesitate to contact us if you require any further advice or assistance.

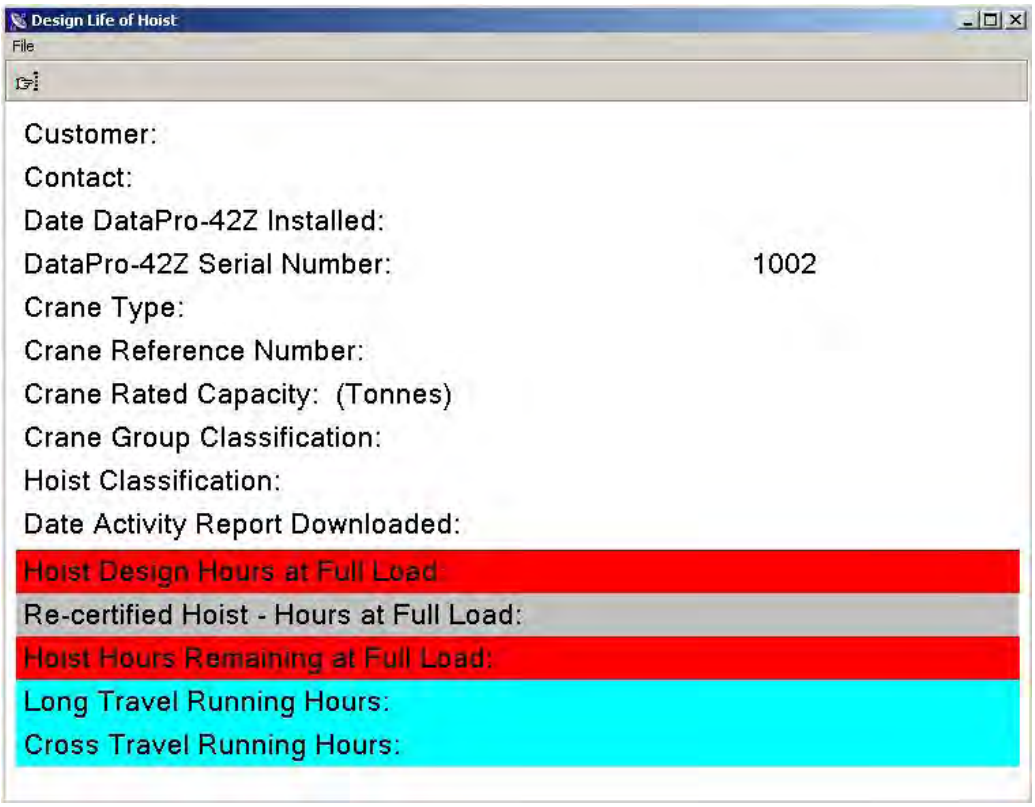
The DataPro-42Z
Crane Mechanisms Utilisation Recording Device

The **D**ata**P**ro-42**Z** is an electronic device that can be installed onto new hoists or hoists that have been recertified for Continued Safe Use. The device constantly monitors hoist utilisation and converts this data to a real time report, an example of which can be seen below.

The Australian Standard 2550 states that hoists that are ten calendar years old must be replaced or recertified for Continued Safe Use, irrespective of the fact that there may still be design hours left in the hoist.

Should you wish to continue using the hoist after the ten calendar year period has expired, then it will be necessary to provide utilisation documentation that can prove that the hoist has not exceeded its' original design classification.

The most accurate method of providing utilisation documentation is electronically, and by fitting the **D**ata**P**ro-42**Z**, the problem is solved — this means that the hoist can be used until it has reached its' full design hours as it can be proven that, although the hoist may have exceeded the mandated ten calendar years, it is still operating within the manufacturer's original design classification, or, for a re-certified hoist, the specified period for Continued Safe Use.



Specification

- IP-65 enclosure
- USB wireless communications for initial calibration and downloading utilisation report
- Ten years onboard data storage
- Four inputs — Used for mechanisms utilisation recording
- Two outputs — Used for overload protection - warning devices
- Variable input voltage — 24-48 Vac
- Monitors long and cross travel running hours
- Minimum Ambient Operating Temperature: - 15° C
- Maximum Ambient Operating Temperature: + 70° C
- Data interface for the LTD-740 digital load display

Options at Additional Cost.

- Interface with the LTD-740 digital load display using our i**C**o**M** wireless module
- Interface with our i**R**ea**D** stand alone access control module for usage control
- Interface with customer's existing local area network for real time reporting
- GSM communications to email utilisation report (**Requires Sim Card and Data Pack**)

Product information

FSE 512

An attractively-priced quality receiver for the control of 3 two-step drives!

NEW!

Product information

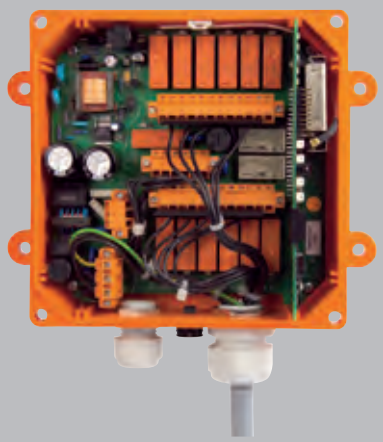
FSE 512 – tailor-made radio technology for control of industrial cranes and machinery!

Attractively-priced, robust design, slim dimensions: HBC-radiomatic's new FSE 512 receiver is a perfect choice for the control of industrial cranes and machinery with 3 two-step drives. Standard equipment includes 12 commands black/white and emergency-stop plus infrared relay for HBC-radiomatic's option radiomatic® infrakey.

FSE 512 scores big with its robust finish of best HBC quality and by its versatility. With a robust plastic housing (protection class IP 65) and a power supply with worldwide capability, this new receiver is suited for the most diverse applications around the globe. An emergency-stop of category 3 (according to EN 954-1) ensures a high standard of safety.

FSE 512 is very easy to install. With a handy mounting device, installation is only a matter of seconds!

FSE 512 with mounting device for easy installation.



Reliable HBC radio technology in slim dimensions.

Details at a glance:

- 12 commands black/white + emergency-stop + infrared relay.
- Suitable for Multi-Receiver-Concept (MRC).
- Emergency-stop: category 3 according to EN 954-1.
- Frequency ranges: 400 – 475 MHz, 868 – 928 MHz.
- Robust plastic housing, protection class IP 65.
- Dimensions: 165 x 165 x 70 mm (6.5 x 6.5 x 2.7").
- Weight: 1,5 kg (3.3 lbs).
- Connection: cable glands or Harting plug (optional).
- Power supply: 42 – 240 V AC (worldwide capabilities).
- Mounting device for easy installation.
- Options: radiomatic® AFS, tandem operation, catch-release, radiomatic infrakey.

Recommended transmitters:

cubix.

quadrix.

micron 4.

micron 5.

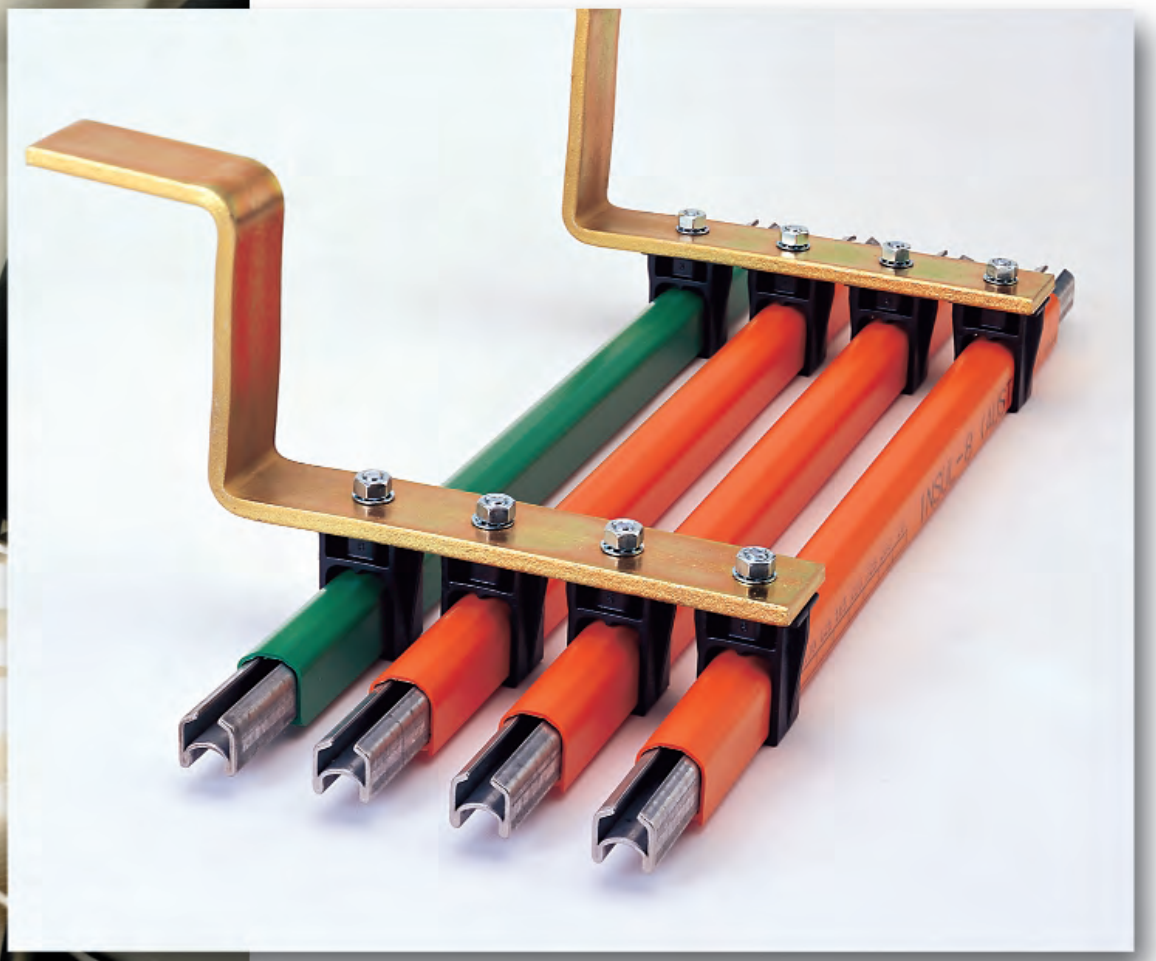
eco.

spectrum 1.

HBC-radiomatic GmbH
Haller Strasse 45 – 53 • 74564 Crailsheim • Germany
Phone +49 7951 393-0 • Fax +49 7951 393-50
info@radiomatic.com • www.hbc-radiomatic.com

ACTIV-8 PLUS

Insulated Conductor Bar



CONDUCTIX
INSUL 8

DELACHAUX GROUP

www.conductix.com.au

A product made in Australia

ACTIV-8 PLUS

ACTIV-8 is the most widely used and stocked conductor rail in use in Australia. It was designed by Conductix engineers utilising over thirty years of experience and supported by the worldwide Delachaux group of companies with over fifty years of pioneering innovation in mobile electrification.

Across Australia you can find ACTIV-8 used in many applications including overhead cranes, automated storage and retrieval, assembly lines and other moving powered equipment.

With the ACTIV-8 range of accessories, the ease of installation and the Conductix team ready to assist in the design of difficult installations, it becomes obvious why ACTIV-8 has become accepted as the industry standard.

Some benefits of the ACTIV-8 PLUS system:

- Current ratings from 90 to 400 Amps
- Finger safe to IP2
- Systems up to 200m without expansion sections
- Able to be curved down to a 1.5m radius
- Green coloured earth components.

Conductor Bars:

Available in galvanised steel, copper and high conductive aluminium with a stainless steel contact surface. Supplied in either four or two metre lengths and in a range of 90 to 400 Amps. Factory curved units are offered.

Power Feeds:

Power feeds are designed in a variety of styles ranging from 54 to 330 Amps and available to suit cable sizes up to 70mm^2.

Expansion Sections:

Expansion sections are used at all structural expansion joints and for long runways to compensate for thermal expansion.

Insulating Covers:

Standard conductor bar covers of PVC meet all requirements for electrical insulation and may be used outdoors and in temperatures up to 75^{0}c.

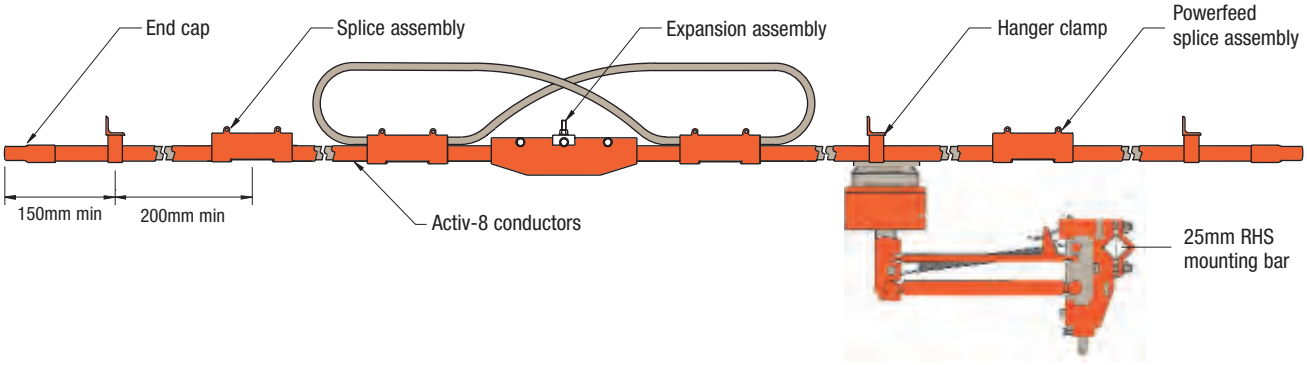
Hanger Clamps / Anchor Clamps:

Hanger clamps made from high strength Xenoy support the conductors and are of a "sliding tight" design. Anchor clamps are designed to grip and support the conductors "anchor-tight" and are used at anchor points only.

Collectors:

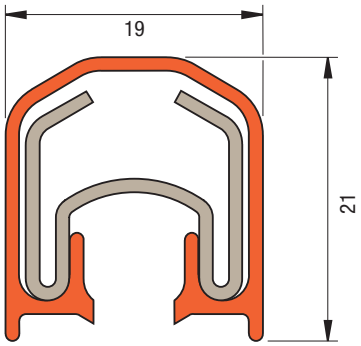
Insulated contact heads that hold the replaceable shoes are mounted on spring loaded arms and are designed to both articulate and swivel. No exposed metal surfaces carry current.

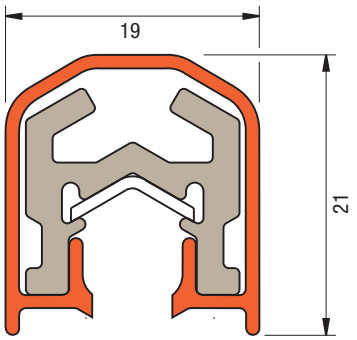
Basic System Design:



SYSTEM COMPONENTS

Conductor Bar Detail
Gal Steel & Copper





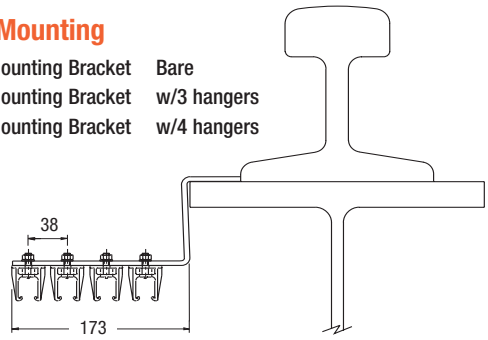
Conductor Bar Detail
Alu/Stainless Steel

	90A	120A	140A	250A	300A	400A
	Gal Steel	Gal Steel	Gal Steel	Copper	Alu/Stainless	Copper
Conductor Bar 4m	98352	98353	98354	98355	98358	98357
Conductor Bar 4m Med.Temp.*	98362	98363	98364	98365	98368	98367
Splice Assembly	98306	98306	98306	98306	97750	98306
Power Feed	98307	98307	98307	98307	90156	98307
End Cover	98309	98309	98309	98309	98309	98309
Expansion Section 1.5m	97052	97053	97054	97055	97059	97057
Isolation Section 500mm	97061/090	97061/120	97061/140	97061/250	97061/300	97061/400

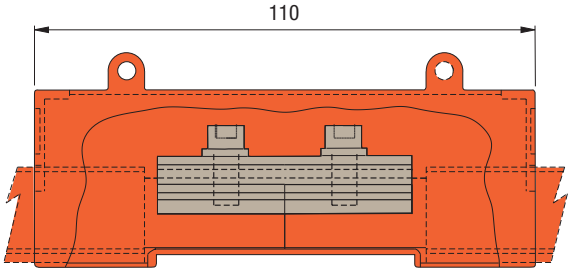
All components listed above (except Med. Temp. cover) are available in green to designate earth.
* Medium Temperature conductor bar incorporates red, halogen-free lexan cover.

Standard Mounting

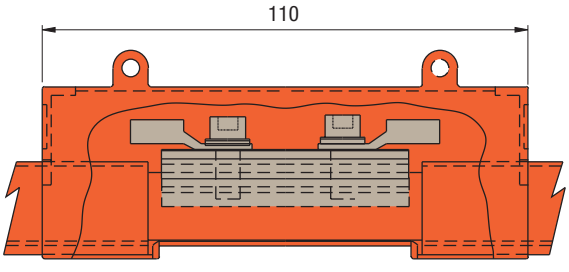
97879 "Z" Mounting Bracket Bare
98382 "Z" Mounting Bracket w/3 hangers
98383 "Z" Mounting Bracket w/4 hangers



Splice Assembly P/No. 98306

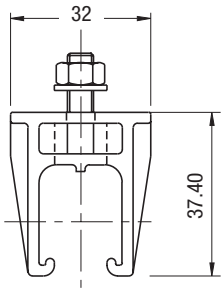


Power Feed Assembly 54-330A P/No. 98307

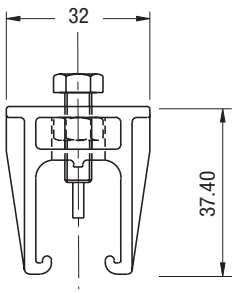


Galv. & Copper Part No.	Alum/ S/S Part No.	Description	Amps 1 Lug Connected	Amps 2 Lugs Connected
98307/06	90156/06	Powerfeed 6mm² Crimp Lug	54	108
98307/10	90156/10	Powerfeed 10mm² Crimp Lug	74	148
98307/16	90156/16	Powerfeed 16mm² Crimp Lug	99	198
98307/25	90156/25	Powerfeed 25mm² Crimp Lug	135	270
98307/35	90156/35	Powerfeed 35mm² Crimp Lug	165	330

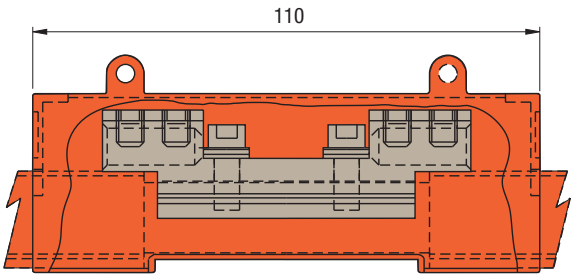
Hanger P/No. 98380



Anchor P/No. 98381

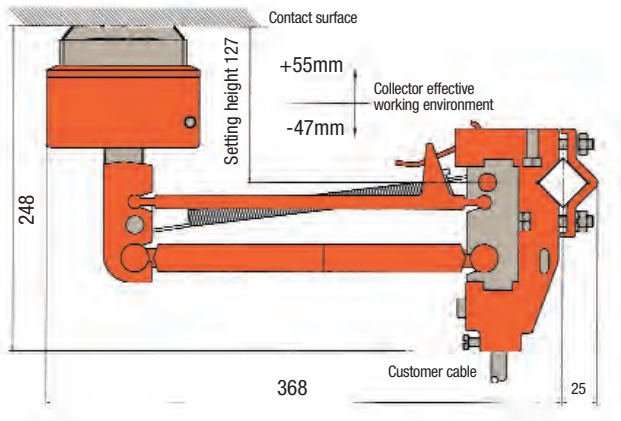


Power Feed Assembly 330A P/No. 97027

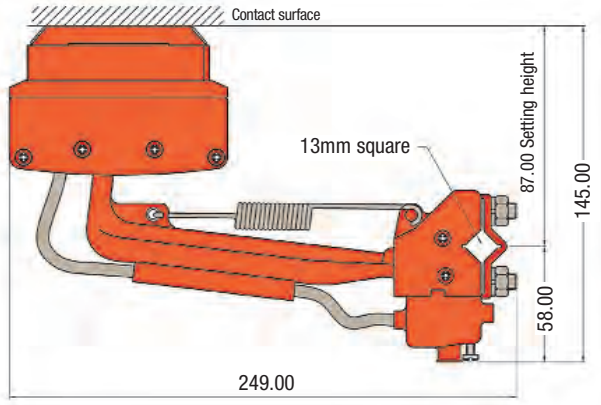


SYSTEM COMPONENTS

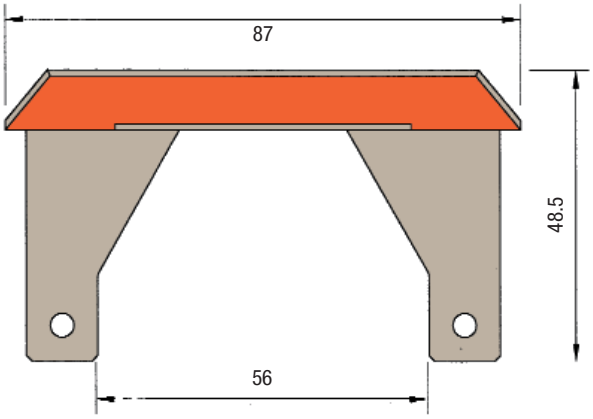
100 Amp DI Collector P/No. 310990



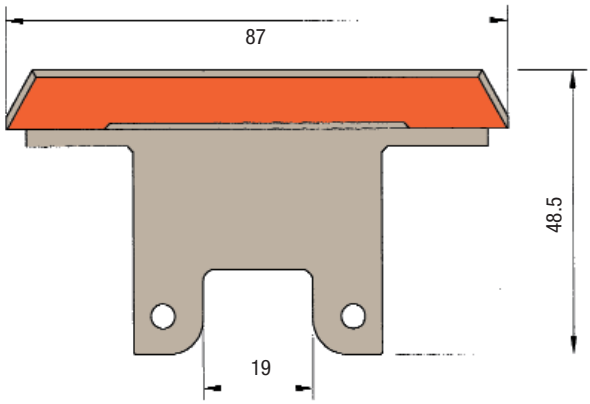
50 Amp SI Collector P/No. Live: 399360
Earth (Green): 399380



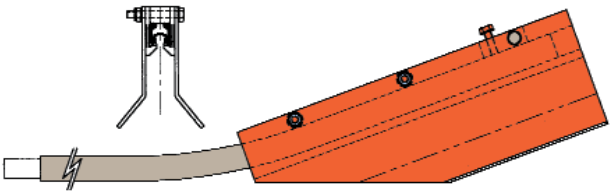
100 Amp DI Collector Shoe P/No. 310993
(includes holder)



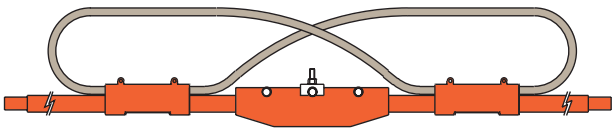
Collector Shoe for Double Arm Collector (P/No. 98497)
P/No. 98387



Pick-up Guide



Expansion Section

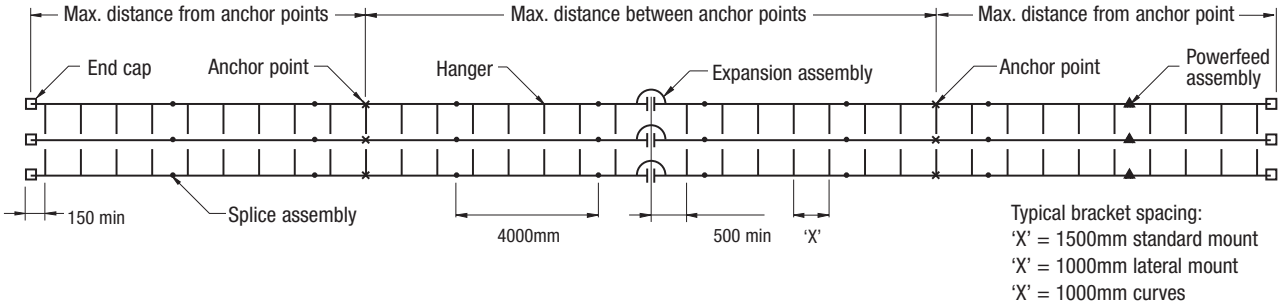


Other components:

Part No.	Description	Part No.	Description
28082	30 A Collector Shoe	98308	Cluster Style Anchor Clamp
31582	30 A 2 Pole Collector	98309	End Cover
31583	30 A 3 Pole Collector	98310	12mm Collector Mount Bar
31584	30 A 4 Pole Collector	98311	Cluster Style Monopole Hanger Clamp
97011	Monopole Pick-up Guide Assembly	98313	Cluster Style 3 Pole Hanger Clamp
97012	Two Pole Pick-up Guide Assembly	98314	Cluster Style 4 Pole Hanger Clamp
97013	Three Pole Pick-up Guide Assembly	98324	Splice Clamp w/o Cover
97014	Four Pole Pick-up Guide Assembly	98325	54-330 A Power Feed w/o Cover
97061	Monopole Isolating Section	98326	330 A Power Feed w/o Cover
97062	Two Pole Isolating Section	98327	Transfer Cap
97063	Three Pole Isolating Section	98328/70	Power Feed for 70mm Cable
97064	Four Pole Isolating Section	98388	100 A Cast Iron Cleaning Shoe for 98497 collector
97752	330 A Power Feed for Alu/SS Bar	A163	"Danger Live Rail" Sign
98275	Conductor Bar PVC Insulating Cover	A164	25mm Collector Mount Bar
98288	Splice Cover Half	97879C672	3 Phase Anchor Clamp Kit
		97879C671	4 Phase Anchor Clamp Kit

TECHNICAL DATA

Typical 3 Phase System:



An accurate choice of conductors can only be made when all of the following information is known:

- Type of current: single or three phase AC; continuous DC
- The maximum current load for all motors
- Allowable voltage drop for the motors being supplied
- Expected duty cycle of the system
- The ambient temperature range
- Environment (dusty, coastal, humid, acidic…)

	Galvanised Steel			Copper	Alu/Stainless	Copper
	90A	120A	140A	250A	300A	400A
Cross sectional area in sq mm	45.36	61.05	88.64	46.24	104.00	88.64
Weight per four meter length	1.91kg	2.4kg	3.26kg	2.14kg	1.62kg	3.65kg
Resistance R (for DC) (ohm/m)	0.002621	0.001948	0.00134	0.000381	0.000303	0.000203
Impedance Z (Ohm/m) 22mm cts @ 20°C	0.002416	0.001808	0.001253	0.000393	0.000319	0.000235
*Impedance Z (Ohm/m) 38mm cts @ 20°C	0.002431	0.001823	0.001268	0.000408	0.000334	0.000250
Impedance Z (Ohm/m) 75mm cts @ 20°C	0.00245	0.001842	0.001287	0.000427	0.000353	0.000269
Max. system length without expansions	200m	200m	200m	150m	150m	150m
Max. distance between anchor points	180m	180m	180m	120m	85m	120m
Max. distance from anchor to end of run	100m	100m	100m	75m	75m	75m
Min. bending radius	1.5m	1.5m	1.5m	1.5m	2.0m	1.5m
Thickness/gauge of conductor in mm	0.8	1.1	1.6	0.8	extrusion	1.6

* Z bracket arrangement

Voltage Drop Calculations:

AC three phase	VD = L x I x Z x 1.73 Volts
AC single phase	VD = L x I x Z x 2 Volts
DC	VD = L x I x R x 2 Volts

VD = Voltage drop in Volts
I = Maximum Current in Amps
L = System length in meters from feed
R = DC resistance in Ohms per meter
Z = Impedance in Ohms per meter

The value of L will vary dependent on the placement of the power feed(s) as shown in the diagram below:

End Feed
L = length

Centre Feed
L = 1/2 length

Two End Feeds
L = 1/4 length

Feed point at 1/6 from each end
L = 1/6 length

Feed points at 1/2 and 1/10 from ends
L = 1/10 length

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TELECRANE®

F25 Industrial Radio Remote Controller

ISO 9001
BUREAU VERITAS
Certification

TELECRANE®

LEE'S HI-TECH ENTERPRISE CO., LTD.

F25 Industrial Radio Remote Controller

Safe-Reliable-Easy to Use

- Safety function of "STOP" & "CONTROL" (**Cat. 4 / Cat. 3 EN ISO 13849-1**)
- Compact design and Easy operating.
- Durable casing with extra shock resistance.
- Programmable function setting, suitable for diversified industrial applications.
- Remote Pairing technology, allowing instant maintenance on site.
- Pre-wiring standard cable for quick and easy installation.
- Built-in Alarm / Horn, no need to install extra warning devices.

TELECRANE®

LEE'S HI-TECH ENTERPRISE CO., LTD.

F25 Industrial Radio Remote Controller

LEE'S HI-TECH ENTERPRISE CO., LTD.

F25 Series Receiver

F25-6S/6D

6 Single/Double steps Buttons

1 EMS Button
1 START Button
1 Rotary Key
1 Alarm Button

F25-8S/8D

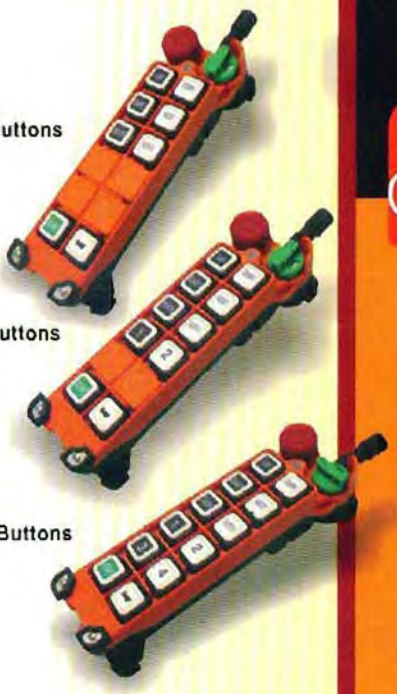
8 Single/Double steps Buttons

1 EMS Button
1 START Button
1 Rotary Key
1 Alarm Button

F25-10S/10D

10 Single/Double steps Buttons

1 EMS Button
1 START Button
1 Rotary Key
1 Alarm Button



Optional Accessories

- Software CD
- USB Interface Cable

- Passive Antenna

- Copier

- Transmitter Protective Cover

Specifications

General	Operation Frequency	433.05 ~ 434.79MHz
	Hamming Distance	≧ 4
	Operation Range	Up to 100 Meters
	Temperature Range	-40 ℃ ~ +85 ℃
	I.D. Code	2^{20} sets (set by factory, never repeated)
Transmitter	Power Supply	Four 1.5 volts Batteries (AA Size)
	Transmitting Power	< 10 mW
	Power Indication	3-stage with LED Indication
	Dimensions	186 x 61 x 51 mm (L x W x H)
	Weight	about 265g (including batteries)
Receiver	Power Supply	24 / 48 / 110 / 220 / 380VAC (50/60Hz), ±20%
	Dimensions	200 x 162 x 107 mm (L x W x H)
	Weight (w/o cable)	about 1550g

TELECRANE®

http://www.telecrane.com.tw

2008.01

FosguardEP266

SelfPrimingIndustrialCoating

FEATURES

Fosguard EP266 is a self-priming, fast drying direct to metal semi-gloss enamel.

The finish produced is smooth, hard and particularly durable. **Fosguard EP266** provides good protection in exterior situations for most industrial applications.

Formulated with the ant-corrosive Zinc Phosphate, **Fosguard EP266** will provide protection to steel in moderately corrosive environments.

RECOMMENDED USES

Fosguard EP266 is recommended wherever a self-priming semi-gloss finish is desired in an industrial application. It will find uses in the following applications:

- Machinery and equipment
- Tractors and agricultural equipment
- Mining and engineering equipment
- Trailers
- Garbage disposal containers

SPECIFICATION DATA

Colour:	White, Standard Cameleon colour range.AS2700 Colours
Finish:	Semi Gloss
Density:	~1.10 g/cc [(1)]
Volume Solids:	~ 38% [(1)]
Packaging:	1,2, 4, and 20 litre
Application:	Air and airless spray
Thinner:	Thinner E243 or Mineral Turps
Cleanup:	Mineral Turps

Dry Film Thickness:	40 - 50µ DFT
Wet Film Thickness:	105 - 130µ WFT
Coverage:	8 - 9 m^2 / litre @ 40µ DFT
Number of Coats:	2 coats
Touch Dry:	15 minutes @ 25°C
Dry to Handle:	2 - 3 hours @ 25°C
Hard Dry:	8 hours @ 25°C
Storage:	Store under cool dry conditions away from heat and sources of ignition.

[(1)] Based on Fosguard EP266 White

PERFORMANCE

Temperature Resistance:	Up to 90°C dry heat
Abrasion Resistance:	Good
Weatherability:	Fair / Good
Solvent Resistance:	Moderate / Good [(2)]
Chemical Resistance:	Moderate; not resistant to strong acids or alkalis. Resists rain and condensation, not suitable for immersion.
Corrosion Resistance:	Tested to ASTM B117/ ISO 9227, Passed Salt Spray exposure of 250 Hours
Adhesion:	Excellent – tested directly applied to steel

[(2)] Resists alcohols, mineral turps, and enamel thinners. Not resistant to Aromatic solvents, ketones, esters and chlorinated solvents.

DIRECTIONS FOR USE

Ensure all surfaces are clean, dry, and free from contamination. Fosguard EP266 may be applied directly to suitably prepared un-primed steel. Aluminium, zinc aum and galvanised surfaces should be etch primed with **Cameleon Cametch VP628**.

Fosguard EP266 is best applied by conventional or airless spray. Add the appropriate amount of **Cameleon E243 Thinner** depending on the type of application equipment and environmental conditions. Typical conventional spray set up should have air pressures of Pot: 60 - 100 kPa (10 - 15 psi); Gun: 380 - 420 kPa (55 - 60 psi). Airless spray set up should have a 28:1 pump ratio and an air supply of 520 - 650 kPa (80 - 100 psi). Apply one mist coat, allow to flash off then apply one full coat. Recoat within 1 - 2 hours, or after 24 hours.

Cameleon E248 Enamel Additive may be added to enhance drying, hardness, chemical resistance, gloss and durability. Add at the rate of 250 mls per 4 litres of **Fosguard EP266.**

Stir well and ensure colour is as required before use. Provide adequate natural ventilation during use. Wash equipment immediately after use with **E243 Thinner** or **Mineral Turps**.

DO NOT apply if temperature is below 10°C or if relative humidity is >85%

Typical Specifications

Surface	Preparation	System	Dry Film Build
Steel	Ensure surface is clean, dry and free from grease, oil, or other surface contaminants. Abrasive blast to AS1627.4 class 2, or power tool clean to AS1627.2	1. Fosguard EP266 2. Fosguard EP266	40 - 50µ 40 - 50µ
Aluminium, Zinc Alum or galvanised metals	Thoroughly scrub the surface to remove any white corrosion products and surface contamination (oil, grease etc). Prepare substrate to SSPC-SP-1.	1. Cametch VP628 2. Fosguard EP266 3. Fosguard EP266	15 - 20µ 40 - 50µ 40 - 50µ
Previously Painted Surfaces	Thoroughly sand the surface down to provide a sound substrate. Ensure the surface is clean, free from dust, oils, grease or other surface contamination.	1. Fosguard EP266 2. Fosguard EP266	40 - 50µ 40 - 50µ

PRECAUTIONS

IMPORTANT! See the Cameleon Paints General Safety Data Sheet, Product label, and Material Safety Data Sheet (MSDS) for health and safety information prior to use.

CAMELEON PAINTS

Manufacturers of a complete range of quality paints

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