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BALKANSKO ECHO

CERTIFICATES









THE COMPANY

Dear customers, colleagues and friends,

In front of you is the catalogue which contains valuable and useful information about

the manufacturing activity and high-quality production of one of the leading companies for travel and hoist systems worldwide.

"Balkansko Echo" company is unique with its three separate factories situated on a total manufacturing area of over 20 000 m², more than 600 metal-working machines and more than 550 dedicated and highly qualified specialists, as all this makes the company independent from outer subcontractors and cooperative deliveries.

The company is designing, constructing, manufacturing, assembling and servicing the following:

- electric wire rope hoists of "T" and "MT" series with a lifting capacity of up to 50 t and a lifting height of up to 120 m, which are to be known for their exceptional reliability and durability;
 - electric chain hoists, with a lifting capacity from 0,125 t to 2 t;
- single and double girder electric traveling cranes with a control from the cabin and from the ground with a lifting capacity of up to 100 t;
 - bracket electric cranes with a lifting capacity from 1t to 10 t and outrigger length of 10 m;
- induction cone hoist motors, single and double- speeded, with a built-in brake and a thermo-protection from 0,12 kW to 30 kW;
 - induction, mono-phase and three-phase cylindrical electric motors from 0,55 kW to 37 kW;
 - geared motors for setting in motion the running gears of travel and hoist systems;
 - lifting capacity limiting devices for all kinds of hoists and crane travel and hoist systems;
 - complete spare parts range for all products.

All company's products are manufactured in a general-industry, fire-safe and explosion-proof execution, and they can operate in different climate zones, including chemically aggressive environment.

The company's system for quality management and control has been certified according to ISO 9001:2008 by TÜV Rheinland.

The company's production has been certified according to the requirements of the countries where it is used.

By the end of 2010, "Balkansko Echo" had manufactured and sold more than 20 000 electric hoists, including 5000 explosion-proof ones, more than 600 cranes and over 50 000 general-industry and explosion-proof electric motors.

The production of "Balkansko Echo" company proves every day its high-tech qualities, security and reliability in different countries, like Russia, Kazakhstan, Belarus, Ukraine, Czech Republic, Slovakia, Turkey, Iran, etc. We are proud to announce that our goods are the only ones in the world with a 36-month warranty.

The aim of this catalogue is to provoke your interest to the goods we manufacture with great responsibility.

By this catalogue we would like to turn to you, our customers, and declare our willingness to make the most suitable product for your manufacturing, and also to assure you that you'll make the best choice.

Please use the following telephone numbers for a twenty-four-hour contact with us: +35967302220; +359885000555; +359888223344 or you can write to us at balkanskoeho@abv.bg

ELECTRIC WIRE ROPE HOISTS

The electric wire rope hoists of "T" Series are the most famous and well-sold hoists worldwide. More than 1 800 000 pieces have already been produced, which have been marketed in more than 40 countries. Their main advantages are: high reliability, durability, simple maintenance. These advantages in combination with the broad range of lifting capacities, lift and move speeds, construction executions, and ability to be used in different conditions, make the electric hoists of this series preferred to the other executions, despite their 30-year-old history.

Technical data:

Voltage: 380- 400V (special executions- by request) Frequency: 50 Hz (special executions- by request)

Operational voltage: 24V, (42V) Class of protection IP54 (EN 60529)

Operational conditions *

- climate- normal, tropical or marine
- normal or chemically aggressive environment
- temperature of the environment
- 1) normal: from -25°C up to +40°C
- 2) low: from -40°C up to +40°C
- relative air humidity- 80% at 20°C
- in closed rooms or in the open air under a shelter by a normal fire-hazard
- * special execution by a request

STRUCTURE

The electric hoists are based on a module construction consisting of the following elements:

1. REDUCTION GEAR

The two-stepped planetary reduction gear is positioned out of the roll or the body of the hoist.

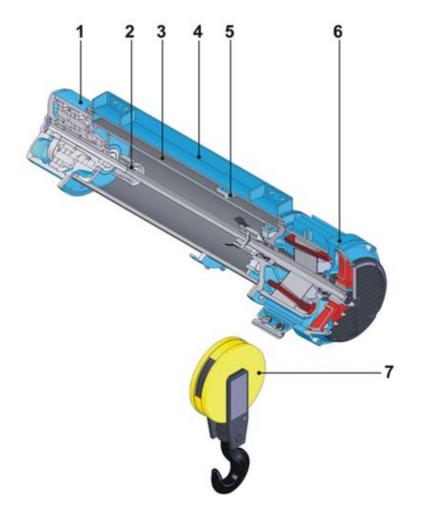
The solid construction allows a reliable torque transmission towards the roll of the machine. The use of high-quality materials during the manufacturing process of the reduction gear is a guarantee for its reliable performance. Its positioning allows an easy service during the period of use.

2. TOOTHED CLUTCH

A construction that allows safe transmission of the motor torque to the reduction gear shaft, with sufficient possibility for axial and angle compensationall this guarantees a normal and safe performance of the machine.

3. ROLL

The roll is positioned axle-like to the reduction gear and the electric motor. It has got ball bearings at the front guards of the electric motor and the reduction gear. It has also been designed with a screw channel for positioning the rope, according to DIN 15020.





4. BODY

It is a steel-welded construction with a round form made of sheet material. The reduction gear and the electro motor are mounted on both the opposite sides of the body. When the execution is with a trolley, it is also attached to it. The fixed end of the rope is also attached to the body. Different reeving systems can be realized by means of additional supporting elements.

5. ROPE LEAD

The rope lead ensures the correct arrangement and lead of the rope in the screw channel of the roll, and also its normal going out of it. Apart this, it also functions for operating the cut-offs of the lifting mechanism, which are fixing the end up and end down position of the hook.

6. LIFTING ELECTRIC MOTOR

It's a three-phase induction motor with a cone rotor and a built-in brake. Typical for it is its simple construction giving it a great reliability and maintainability. The completely automatic brake allows safe hold of the load. It is simple in service and adjustment during the process of operation.

Class of protection IP54, IP22 (EN 60529) for the brake; class of insulation F (H- by agreement with the customer). We can also offer double-speeded executions with a ratio of micro speed: main speed- 1:4; 1:6, as well as stepless ones by request. All electric motors are equipped with a coil overheating protection.

In the electric motor's terminal box there is a built-in stop of the end hook positions.

7. HOOK

The hook construction and the roller block of the reeving are performed according to the requirements of DIN 15400.

CONTROL BLOCK

The control block has been designed as a cabinet with electro appliances and it ensures all requirements for safety and elements protection. It is mainly based on circuit closer control of the electro motors, with an option for performing radio or frequency control. Class of protection IP54.

CONTROL DESK

Contemporary design, materials ensuring high level of safety, option for a stepless control, class of protection IP65.

SINGLE-GIRDER TROLLEY

Normal and reduced headroom execution. They are being driven by electric motors with cone rotor and an automatic cone brake, single and double-speeded (ratio 1:3, and step-less also by request), class of protection IP54, class of insulation F. These can be driven on rectilinear and curve sections, onto single girder roads with 90...300 mm in width.

DOUBLE-GIRDER CRANE TROLLEY

Executions in a variety of lifting capacity, driven by one or two gearmotor groups, equipped with electric motors with cone rotor and an automatic cone brake, single and double-speeded (ratio 1:3, and stepless also by request), class of protection IP54, class of insulation F. Great variety of wheel-gauge (1000 -2800 mm).

STANDARD EXECUTIONS

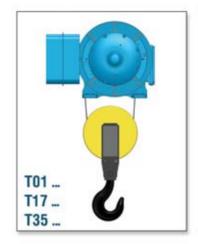
Stationary

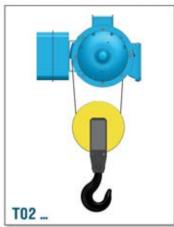
Lifting capacity: 200 – 16 000 kg **Reevings:** 1/1; 2/1; 4/1; 2/2

Lift height: 6 - 72 m

Lift speed: 4- 32 m/min (by microscope at a

rate of 1:4 and 1:6)







With a single-girder trolley (reduced headroom height)

Lifting capacity: 200 - 12500 kg

Reevings: 2/1; 4/1

special executions- 1/1; 2/2

Lift height: 6 – 36 m

special executions- up to 72 m

Lift speed: 4- 16 m/min

by microscope at a rate of 1:4 and 1:6 special executions- 32 m/min

Conveying speed:

8; 10; 12; 15; 20; 32; 12/4; 15/5; 20/6; 32/10 m/min



STANDARD EXECUTIONS

With a single-girder trolley (reduced headroom height)

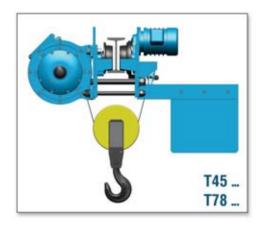
Lifting capacity: 200 – 10 000 kg

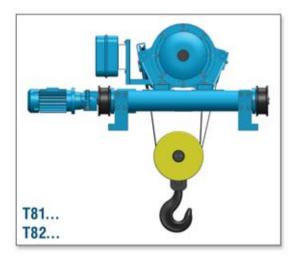
Reevings: 2/1; 4/1 Lift height: 6 – 36 m Lift speed: 4- 16 m/min

(by microscope at a rate of 1:4 and 1:6)

Conveying speed:

8; 10; 12; 15; 20; 32; 12/4; 15/5; 20/6; 32/10 m/min





With a double-girder trolley

Lifting capacity: 1000 – 16 000 kg **Reevings:** 1/1; 2/1; 4/1; 2/2 **Lift height:** 6 – 36 m

Lift speed: 4- 16 m/min

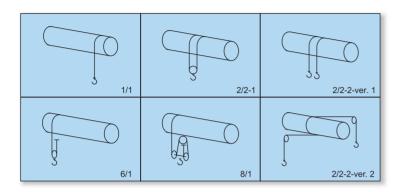
(by microscope at a rate of 1:4 and 1:6) special executions- 32 m/min

Conveying speed:

8; 10; 12; 15; 20; 32; 40 m/min (by microscope at a rate of 1:3)

Gauge: 1 000- 2 800 mm

REEVING SYSTEM







CRITERIA FOR THE CHOICE

In order to be able to make the right choice of a lifting device you need to know:

- 1. The maximum load that is going to be uplifted.
- 2. The maximum height of the lift.
- 3. The necessary speed of the lift.
- 4. The operational conditions.

After that you need to determine the operational rate group of the lifting device according to FEM 9.511, DIN 15020, ISO 4301 or FOCT 25835.

With regard to this you need to define in advance:

- class of loading
- class of use



The class of loading can be determined by the loading factor K, using the formula:

$$K=\sum [(Q_i / Q_{nom})^3. t_i / \sum t_i],$$

where:

Q, - load being lifted by the device for a definite time t,

Q - the nominal (maximum) capacity of the device

t_i - duration of operation with load Q_i

 $\sum t_i$ - sum of time for device operation with load.

After that the average machine time T_{M} for a day is being defined:

$$T_{M} = 2.H.N.T / 60.V,$$

where:

H - average height of lift

N - number of cycles per hour (a cycle means: lift-pause-lift down-pause)

T - daily duration of operation

V - lift speed, m/min

The data received is used to define the operational rate group, and then you may continue with the choice of a lifting device.

EXAMPLE

Lifting capacity	-	2000 kg
Average height of lift	Н	3 m
Lift speed	V	8 m/min
Reeving	-	2/1
Class of loading	-	medium
Number of cycles per hour	N	30
Daily duration of operation	Τ	8 h

The average machine time per a day is calculated:

$$T_{M}$$
= 2.H.N.T/60.V= 2.2.30.8/60.8= 3, h

Using the table for operation range, for Tm= 3h and class of loading "medium", you can define the group of operation range for the lifting device - **2m**, according to FEM 9.511.

Knowing the needed capacity of **2000 kg** and using the already defined group of operation range -2m, and the type of Reeving -2/1, we can define the lifting device as type T..4..

CLASSIFICATION OF THE LIFTING DEVICES

	Ор								
Class of loading	Loading factor, K	Perform	nance			of use			
		0 11 111	0 10 50 100	Тм, h 1) 2-4 4-8 8-16 >					
LIGHT	< 0.125	Operation with loads less than the	capacity			, h 2)	10		
LIGITI	0.120	nominal ones	Appended to build with the second of the sec	6 300	12 500	25 000	50 000		
			0 16.7 33.3 50 100	4.0		1, h	0.10		
NAEDU INA		Operation with	73	1-2	2-4 Tm	0, h	8-16		
MEDIUM	0.125 - 0.25	medium and nominal loads	73 46 20 % machine time	3 200	6 300	12 500	25 000		
			0 50 100			1, h			
		Operation with	acity	0,5-1	1-2	2-4 o, h	4-8		
HEAVY	0.25 - 0.5	nominal or close to nominal loads	Ailufing capacity		1 101	, <i>11</i>			
		nominar loads	% machine time	1 600	3 200	6 300	12 500		
			0 90 100			1, h			
VEDV		Repeated	otity Sity	0,25-0,5	0,5-1	0, h	2-4		
VERY HEAVY	0.5 - 1	operation with nominal or close to	% lifting capacity.						
TILAVI		nominal loads % machine time 0		800	1 600	3 200	6 300		
switching in o	duration, %			30	40	50	60		
switching in f	requency, h ⁻¹			180	240	300	360		
			FEM 9.511 / DIN15020	1Am	2m	3m	4m		
	operational rate	group	ISO 4301	M4	M5	М6	М7		
	•		ГОСТ 25835	2M	3M	4M	5M		
	REEVINGS	3							
1/1	2/1	4/1	DIMENSIONS		TY	PE			
L	IFTING CAPACI	TY, kg	DIVILITOIONO			' -			
160	320	-		-	-	-	T2 *		
200	400	-	2	-	-	T2	-		
250	500	4050		-	T2	_			
320	630	1250		-	_		T3 *		
400 500	800 1000	1600 2000	3	-	T3	T3	-		
630	1250	2500		-	13 —	_	T4 *		
800	1600	3200	4	_	_	T4	-		
1000	2000	4000	1	-	T4	_	T5 *		
1250	2500	5000	5	-	_	T5	-		
1600	3200	6300	J J	-	T5	_	T6 *		
2000	4000	8000	6	-		T6	-		
2500	5000	10000		-	T6	_ 	T7 *		
3200 4000	6300 8000	12500 16000	7	-	T7	T7	-		
	by customer order	10000	1) Tn.	ı – average n		per dav			
,				10 – total time			onal period		



NOTATION



TECHNICAL DATA

			REEVINGS	S 1/1 – 2/2 ¹⁾				
Lifting Capacity kg		DIN 15020	Lifting height,	, m	Lifting speed, m/min			
Ng .	Туре	FEM 9.511	1/1	2/2	V1	V2	V3	
200	T2	3m	12;18;24;36;48;60;70	-	16; 4/16	24; 4/24	32; 5/32	
250	T2	2m	12;18;24;36;48;60;70	-	16; 4/16	24; 4/24	32; 5/32	
400	T3	3m	12;18;24;36;48;60;72	8;12;19;27	16; 4/16	24; 4/24	32; 5/32	
500	T3	2m	12;18;24;36;48;60;72	8;12;19;27	16; 4/16	24; 4/24	32; 5/32	
800	T4	3m	12;18;24;36;48;60;72	8;12;21;29	16; 4/16	24; 4/24	32; 5/32	
1 000	T4	2m	12;18;24;36;48;60;72	8;12;21;29	16; 4/16	24; 4/24	32; 5/32	
1 250	T5	3m	12;18;24;36;48;60;72	7;10;17;24	16; 4/16	24; 4/24	32; 5/32	
1 600	T5	2m	12;18;24;36;48;60;72	7;10;17;24	16; 4/16	24; 4/24	32; 5/32	
2 000	T6	3m	12;18;24;36;48;60;72	6;9;16;23	16; 4/16	24; 4/24	32; 5/32	
2 500	T6	2m	12;18;24;36;48;60;72	6;9;16;23	16; 4/16	24; 4/24	32; 5/32	
3 200	T7	3m	18;24;36;48;60;72	13;20;27;34	16; 4/16	24; 4/24	32; 5/32	
4 000	T7	2m	18;24;36;48;60;72	13;20;27;34	16; 4/16	24; 4/24	32; 5/32	
1) refers only to	stationary hoi	sts, without load	limit					

		REEVINGS 2/1											
Lifting Capacity kg		DIN 15020	DIN 15020 Lifting height, m		Lifting speed, m/min								
Ng .	Type	FEM 9.511	Litting neight, m	V1	V2	V3							
400	T2	3m	6;9;12;18;24;30;35	8; 2/8	12; 2/12	16; 2.5/16							
500	T2	2m	6;9;12;18;24;30;35	8; 2/8	12; 2/12	16; 2.5/16							
800	T3	3m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
1 000	T3	2m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
1 600	T4	3m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
2 000	T4	2m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
2 500	T5	3m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
3 200	T5	2m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
4 000	T6	3m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
5 000	T6	2m	6;9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
6 300	T7	3m	9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							
8 000	T7	2m	9;12;18;24;30;36	8; 2/8	12; 2/12	16; 2.5/16							



TECHNICAL DATA

Lifting Capacity			REEVINGS 4/1				
kg	Type	DIN 15020	Lifting height, m	Lifting speed, m/min			
	туре	FEM 9.511	Litting noight, m	V1	V2	V3	
1 600	T3	3m	6;9;12	4; 1/4	6; 1/6	-	
2 000	T3	2m	6;9;12	4; 1/4	6; 1/6	-	
3 200	T4	3m	6;9;12	4; 1/4	6; 1/6	-	
4 000	T4	2m	6;10;13	4; 1/4	6; 1/6	-	
5 000	T5	3m	6;9;12	4; 1/4	6; 1/6	-	
6 300	T5	2m	6;9;12	4; 1/4	6; 1/6	-	
8 000	T6	3m	6;9;12	4; 1/4	6; 1/6	-	
10 000	T6	2m	6;9;12	4; 1/4	6; 1/6	-	
12 500	T7	3m	6;9;12;15;18	4; 1/4	6; 1/6	-	
16 000	T7	2m	6;9;12;15;18	4; 1/4	6; 1/6	-	





ELECTRIC MOTOR PARAMETERS

PARAMETERS OF THE LIFTING ELECTRIC MOTORS WITH A BUILT-IN BRAKE (400 V, 50 HZ)

Suc	- kg	by 511	Single speeded lift						Double speeded lift						
Dimensions	Dimensio Lifting capacity, Group b	д 9.	\	/1	\	/2	٧	′ 3	V	′1	V	/2	V	/3	
Dim L capi	cap	Grou	Рн, kW	Iн, А	Рн, kW	Iн, А	Рн, kW	Iн, А	Рн, kW	Iн, А	Рн, kW	IH, A	Рн, kW	Iн, А	
T2	500			0.75	3.3	1.1	3.6	4.5	12.0	0.16/0.75	3.0/3.4	0.16/1.1	3.0/3.5	0.7/4.5	6.0/9.5
T3	1000		1.5	5.8	2.3	6.0	4.5	12.0	0.33/1.5	3.7/5.0	0.33/2.2	3.7/6.2	0.7/4.5	6.0/9.5	
T4	2000	2m	3.0	11.0	4.5	12.0	12.0	28.0	0.7/3.0	6.0/7.5	0.7/4.5	6.0/9.5	1.7/12.5	15.0/23.0	
T5	3200	2111	4.5	12.3	7.5	17.0	12.0	28.0	1.0/4.8	11.0/12.0	1.0/7.5	11.0/15.0	1.7/12.5	15.0/23.0	
T6	5000		8.0	24.5	12.0	28.0	15.5	29.5	1.7/8.0	15.0/18.0	1.7/12.5	15.0/23.0	4.0/24.0	70.0/48.0	
T7	8000		12.5	36.0	22	49	22	49	3.0/13.0	40.0/30.0	4.0/24.0	70.0/48.0	4.0/24.0	70.0/48.0	

PARAMETERS OF THE ELECTRIC MOTORS WITH A BUILT-IN BRAKE FOR MONORAIL HOIST RUNNING GEARS (400 V, 50 HZ)

suc		Lifting		Lifting height, m			Speed travel, m/min						
capacity, kg		city, kg	roup by IM 9.511		8,10,12, 20		15, 32		4/12, 5/15, 6.5/20, 10/32*				
Dimensions	2/1	4/1	Grou	2/1	4/1	Рн, kW	Iн, А	Рн, kW	Iн, А	Рн, kW	Iн, А		
T2	500	-		6;9;12	-	0.12	0.82	0.18	0.75	0.06/0.18	1.4/1.2		
T3	1000			6;9;12	-	0.12	0.62	0.10	0.75	0.00/0.10	1.4/1.2		
1	-	2000		-	6								
T4	2000	4000	2m	6;9;12	6		1.2	0.37	2.1	0.11/0.37	1.7/1.4		
T5	3200			6;9;12	-								
15	-	6300		-	6	0.37	1.8	0.55		0.11/0.27	1.7/1.4		
T6	5000	-		6;9;12	-	0.57	1.0	0.55		0.11/0.37	1.771.4		
* exclud	ling T5 (•		•	•						

Dimensions	Lifting 출		by 511	Lifting he	Speed travel, m/min							
	capac	capacity, kg		Litting rie	igiit, iii	8,10,1	8,10,12, 20		32	4/12, 5/15, 6.5/20, 10/32*		
	2/1	4/1	Group FEM 9.	2/1	4/1	Рн, kW	Iн, А	Рн, kW	Iн, А	Рн, kW	Iн, А	
T2	500	-		18;24;30;35	-			2x0.18				
٠ ٦	1000	-		18;24;30;36	-	2x0.12	0.82		0.75	2x0.06/0.18	1.4/1.2	
T3	-	2000		-	9;12							
T4	2000	4000	0	18;24;30;36	9;12		1.2	2x0.37	1.5	2x0.11/0.37		
T5	3200	6300	2m	18;24;30;36	9;12	2x0.25					1.7/1.4	
т с	5000	-		18;24;30;36	-							
T6	-	10000		-	6;9;12							
T7	8000	-		9;12;18;24;30;36	-	2x0.37	1.8	2x0.55	2.1	2x0.11/0.37	1.7/1.4	
	-	12500	3m	-	6;9;12;15;18							



WE ALSO MANUFACTURE

MT- electric wire rope hoists

The wire rope hoists series MT are the inheritors of the world's most popular series of electric wire rope hoists T. By keeping the basic technical features and thanks to the use of a new body construction, contemporary steel ropes, hooks, etc., we offer our customers a series of electric hoists with much extended opportunities like lifting capacity, lift speed and conveying speed. All this expands new opportunities for a more efficient operation of our products.

BT- electric explosion-proof wire rope hoists

Based on the basic construction decisions of electric wire rope hoists series T and keeping its technical features, series BT electric explosion-proof wire rope hoists is intended to operate in an explosion hazardous environment.

The electrical equipment included in these goods, such as: electric motors, electric appliances panel, control panel, overtravel limit switches, etc., is manufactured in the so called "explosion-proof" execution, and it is marked by: (Ex) d IIB T5 and (Ex) d IIC T5.

BMT- electric explosion-proof wire rope hoists

The electric wire rope hoists BMT series are based on the basic technical solutions being used in BT and MT series. Based on the higher technical parameters of MT series and the already proven technical decisions of BT series regarding explosion proof, we have created an electric explosion-proof wire rope hoist having much better operational features, such as lifting capacity, lift speed and conveying speed. The electrical equipment is identical to BT series, which presupposes the identical explosion-proof execution and marking: (Ex) d IIB T5 and (Ex) d IIC T5.

Induction electro-motors

- 1. With built-in brakes, for the main lift of electric chain and wire rope hoists and other running gears from 0.75 kW up to 30 kW. Explosion-proof execution as an option.
- 2. With built-in brakes, for running gears of electric chain and wire rope hoists and other lifting parts from 0.12 kW up to 3 kW. Explosion-proof execution as an option.
- 3.General purpose electric motors, executions of IM B3, IM B5, IM B3, IM B14, etc., with or without a built-in brake from 0.55 kW up to 37 kW.

Weight-lifting cranes

- 1. Single-girder underslung traveling cranes lifting capacity from 1 to 16 t and a span from 3 to 25 m.
- 2. Single-girder stationary traveling cranes lifting capacity from 1 to 16 t and a span from 4.5 to 25.5 m.
- 3.Double-girder stationary traveling cranes lifting capacity from 5 to 100 t and a span from 10.5 to 50 m.
- 4.Bracket stationary and wall-mounted cranes lifting capacity from 1 to 10 t and an outrigger spread from 3 to 10 m. Ground and cabin control. Explosion-proof execution as an option.

Crane components

- 1.Reduction gears and motor-reducer gear groups- intended for leading the motion parts of girder cranes and other weight-lifting appliances. These are available in a great variety of output revolutions and torques. They are lead by electro motors with built-in cone brakes. Explosion-proof execution as an option.
- 2. Front girders for stationary traveling cranes- diameters of traveling wheels from 160 to 400 mm, load of the traveling wheel from 4000 to 19 500 kg, conveying speeds from 8 to 32 m/min. Explosion-proof execution as an option.
- 3. Cable trolleys intended for carrying supply and operation cables of traveling cranes. Available in executions for traveling onto profile or straight steel rope.

