

NERAK SCALEVATOR

BUCKET CONVEYOR SYSTEM WITH INTEGRATED WEIGHING FACILITY



NERAK
FÖRDERTECHNIK

THE EXPERTS IN VERTICAL CONVEYING

PRINCIPLE

NERAK has become firmly established worldwide as a leading supplier of systems for the combined vertical and horizontal transport of bulk goods. NERAK bucket conveyors are capable of handling capacities up to 200 m³/h.

With the SCALEVATOR, NERAK has developed a system that features all the reliable characteristics of the bucket conveyor combined with a weighing function.

As with a belt weigher, a segment of the loaded bucket belt is supported on measuring sensors. The data thus obtained is then evaluated together with the relevant path and time information. This means that it is possible to perform a large number of functions in very little space.

- monitoring of the bucket conveyor throughput

- acquisition of production data for the material flow, allowing three different totals, i.e. totals for the shift, day or month. The weighing device has three counters, two of which can be reset.
- Monitoring and control of loading. Pre-setting of a loading value and automatic switch-off.
- Dosing weigher function with control of the amount charged. The weigher regulates the amount of material charged according to a specified set-point by activating star-feeders, slide valves, screw feeders etc.
- Dosing weigher function with control of the speed. The weigher regulates the bucket conveyor speed according to a specified set-point, thus allowing a constant material flow using the gravimetric method.

The control system can be programmed to suit customer's specific requirements

DRIVE SYSTEM

At the heart of every NERAK conveyor drive system is the heavy-duty rubber block chain.

The outstanding features of this chain are that it has no links, is silent-running, wear-resistant and maintenance free, all excellent qualities further enhanced by its corrosion-free design.



Thanks to the silent operation of the rubber block chain, there is no noise annoyance at the workstations in the immediate vicinity of the heavy-duty conveyor.

Moreover, operation with the rubber block chain is extremely cost-effective as there is no need for lubrication, regular adjustment and re-tensioning. Maintenance costs are thus reduced to a minimum.

The rubber block chain is available in a number of rubber compounds to suit every application. Light-coloured food safe compounds are also available.

The rubber block chain gets its high tensile strength from embedded vulcanized steel cables.

DESIGN



Weigh bridge, PLC control and display unit



Weigh bridge

The rubber block chain driving the bucket conveyor is carried on supporting and guide profiles in the horizontal section. The fabric surface of the rubber block chain ensures that the friction co-efficient between the supporting rail and chain is very low. Weighing takes place when a section of the loaded bucket belt runs over the weighing area with guide rails that are supported separately. These guide rails form part of the weigh bridge. The load on the rails is registered by means of sensors. The actual length of the weigh bridge depends on the weight of the product and deadweight of the bucket belt.

In some cases, rollers may be used to support the load instead of guide rails. The weigh bridge sensor is integrated in the bucket conveyor housing as a protection against dust. In addition to the signal for the load, the signal required for the speed is received from an initiator mounted on the side of the housing. The PLC control can be mounted directly on the bucket conveyor or up to 500 m away, in a control room for example.

Equipment

System module

Required as basic configuration for measuring and control unit for all applications. The system module can communicate with a PLC or PLS via a special module as an option (e.g. Profibus)

Control panel

A control panel can be connected to the system module. The data can be displayed on the LCD screen, and entered via the keyboard (e.g. set point)

Expansion module

An expansion module can be connected to the system module via the integrated bus. This provides a second 4 20 mA output as well as additional inputs and outputs. This module is required for complex control tasks. (e.g. combined charging and discharging control).



Disocont control system with optional control panel

Technical Data

Casing	Glass-fibre reinforced plastic
Dimensions:	260 x 160 x 110 mm
Protection class:	IP 65 (as per ICE 60259)
Supply voltage:	24 V DC \pm 20%, 110–230V 20 – 0%+10%, 50 Hz
Ambient temperature:	-20 °C to 50°C in casing
Inputs:	Load cell input (\pm 6V, R > 87 Ω) 2 NAMUR inputs (0.03 – 3000 Hz for speed, belt circulations/valve feedback) 2 isolated digital inputs (24 V, 20 mA, safely isolated) (0/4 mA.. 20 mA, max. 11V)
Outputs:	4 relay outputs, safely isolated (24 V or 230 V with combinations: 3x 24 V and 1x 230 V or 3x 230 V and 1x 24 V; 8 A ohm. / 1 A induct.) 1 isolated analogue output
Interfaces	RS 232 (PC) Internal Disocont-bus
Options	Control panel with graphic display for operation of weighing facility and/or parameterization and configuration.
Display	LCD graphic display (100 mm x75 mm), character size (3.5 / 9 mm)
Keyboard	Membrane keyboard

Other brochures available for NERAK products:

- Pendulum bucket conveyors
- Bucket conveyors
- S-shaped conveyors
- Reciprocating conveyors
- Circulating conveyors
- Circulating-fork conveyors
- Vertical lift units
- Heavy-duty S-shaped conveyors
- Heavy-duty reciprocating conveyors

NERAK GmbH Fördertechnik

Brigitta 5

29313 Hambühren

Tel.: +49(0)5084/944-0

Fax: +49(0)5084/944-222

E-mail: info@nerak.de

http: www.nerak.de