



Field Drive System[®]

The decentralized drive control for conveying systems



About us

MSF-Vathauer Antriebstechnik GmbH & Co. KG produces since 1978 mechanical, electrical and electronic drive technology in Detmold (Headquarters) and Oborniki (Poland), In this time MSF-Vathauer developed itself to the technology leader for decentralized drives.

MSF-Vathauer provides not only mechanical drives technology to its customers. The focus is upon the development, manufacturing and sales of electronic drives.

Further provides MSF innovative solutions for saving energy resources like heat due to heat recovery with rotary heat exchanger and intelligent drives for conveying systems.

We are able to provide our customers a fast, flexible and suitable technical solution due to our high in-house production depth.

On approximately 6000 m² MSF-Vathauer research, develop and produce devices for the measurement and test engineering, for the control technique and for the drive technology.

Highly trained and motivated teams in our research and development department and at our production lines and our many years of experience with the development and customising of drive technology guarantee your success.

We train our employees, representatives and customers within own training facilities continuously. Our own EMC-Laboratory guarantees a high EMC safety standard for all customised and standard devices.

We are looking forward to a close and successful cooperation.

MSF-Vathauer Antriebstechnik GmbH & Co KG

Stand: November 2015

Applications



Automotive

- Skid- conveying systems
- Chain conveying systems
- Ground handling equipment



Intralogistics

- Pallet conveying systems
- Vessel conveying systems
- Parcel conveying systems



Airport logistics

- Baggage conveying systems
- Cargo conveying systems



Building-automation

- Pump Control
- Ventilation
- Air Conditioning
- Heating



Machine-building industry and Machine automation

Product philosophy - Motor starter Field Drive System®

Electronic Motor Starter and Frequency Inverter from MSF-Vathauer Antriebstechnik with Field Drive System® System from Weidmüller – the leading generation for the decentralised automation

Deployment from A to Z

The deployment of all motor starters with the Energy-bus system Field Drive System® is reflected in various industries. Starting with the Automotive industry/Automotive supplier industry over the airport technology to booster conveyor in fully automated warehouses.

Applications

Typical applications are conveyor units such as roller conveyors, belt conveyors, chain conveyors, lift tables, RA deck, turntables, etc. Every place where a robust and flexible installation is required

Properties

Motor starter with the Energy-bus system Field Drive System® is a decentralized drive system with the following properties

- Drive system for the close motor fitting
- Various designs as Frequency inverter, Soft-Starter, Direct-Starter
- Integrated 400Vac power distribution
- Integrated Communication interface (Cascaded, 24V-Binär, AS-interface und Profibus)
- Optional integrated intelligence for local control of the conveyer units
- Integrated engine brake management

Product benefits - Motor starter Field Drive System®

The product benefits of the whole Field Drive System® has the following advantages for many users

Product benefits for project planners and applicators

- Modular, decentralized plant design
 - Standardization of plant sections and plant parts
 - Clear function in plant sections
 - Feedback-free copying of configured plant parts
 - Reduction in planning effort
 - Reduction in planning costs
 - Reduction in planning time

ePLAN® P 8
Motor starter Field Drive System®
Frequency inverter Field Drive System®



- Usage of prefabricated e-Plan Macros
 - ePlan V5.70
 - ePlan P8

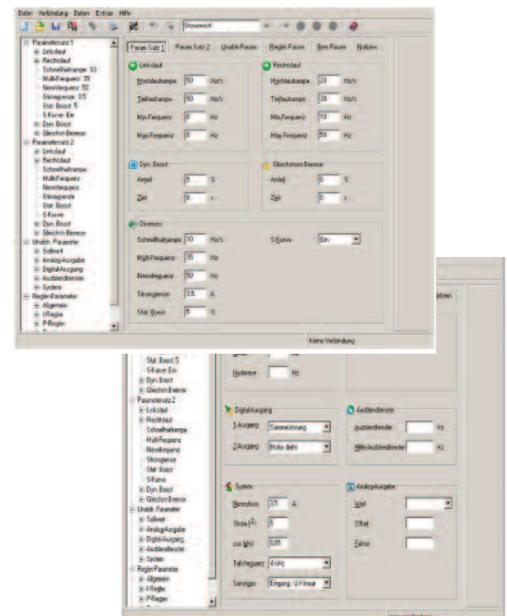
-Use the calculation tool NetCalc for interpreting the energy lines and lines- or tree structures

- Reduce component costs by using the DUO-SWITCH Field Drive System®
 - Small number of individual components
 - Planning the shortened installation time
 - Reducing installation costs
 - Preparation of individual installation components in the factory

Product benefits for Programmer and Commissioner

Modular, decentralized system design

- Common software tools
- Reproducibility of all settings
- Documentable system topology through planning software NetCalc



- Preferences of individual drive modules in the works
- Commissioning of isolate drive modules on the construction site
 - Simultaneous operation of individual drive units possible
 - Replacing the drive modules on another drive unit
 - Replacing any drive units at changing system conditions

Product benefits - Motor starter Field Drive System®

Product benefits for Service and End users

- High system availability for end users
- Low costs for system operators
- Short installation and commissioning times
- Easy and fast service in a simple exchange of electronic
- Short plant shutdown for maintenance and service
- Easy system expansion by modular system, even years later.
- Reduction of control cabinet space



Product benefits for Cabinet and Control mechanics

- Modular, distributed machine design
 - Assembly of individual drive modules
 - Preferences, and pre-commissioning of the drive modules
- Quick installation and assembly on site
- Easy installation for all drive components on site
- Reduction of control cabinet space
- Minimizing the overall complexity
- Use of modern technologies
- Rapid expansion or change in the "last second"
- Minimizing of connection errors

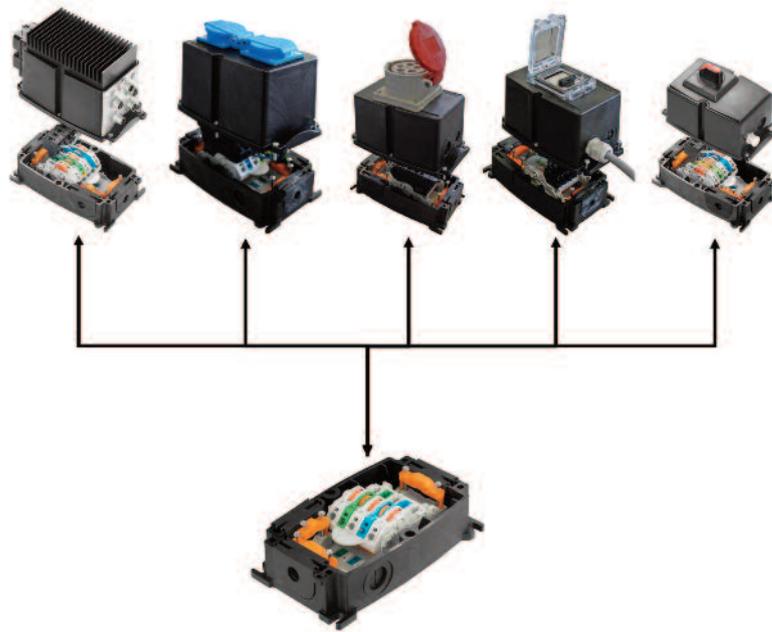


The modular system

The Field Drive System® is a modular designed drive control system for the decentralized drive automation in the conveying industry. The Field Drive System® suits for a wide range of drive application and provides a number of function modules such as motor starter, frequency inverter, power supply, maintenance switch, power outlets etc.

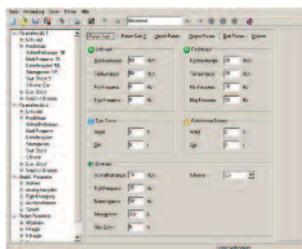
Standard plugs guarantees an easy, quick and reliable sensor- and motor connection on the site.

Common communication interfaces such as AS-interface, Profibus or Profinet guarantee a proper solution for simple and sophisticated conveying applications.



Accessories

The Smart Field Automation® productline provides lots of accessories for the decentralized drive control system Field Drive System®



Commissioning / Parameterisation Software



Manual operating terminal



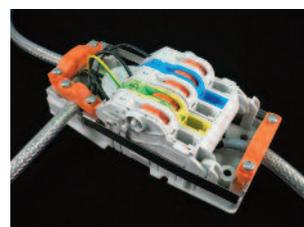
Copying tool



Decentralized fuse box



EMC shield for EMV-Abschirmung für interference-prone power line



Motor cable

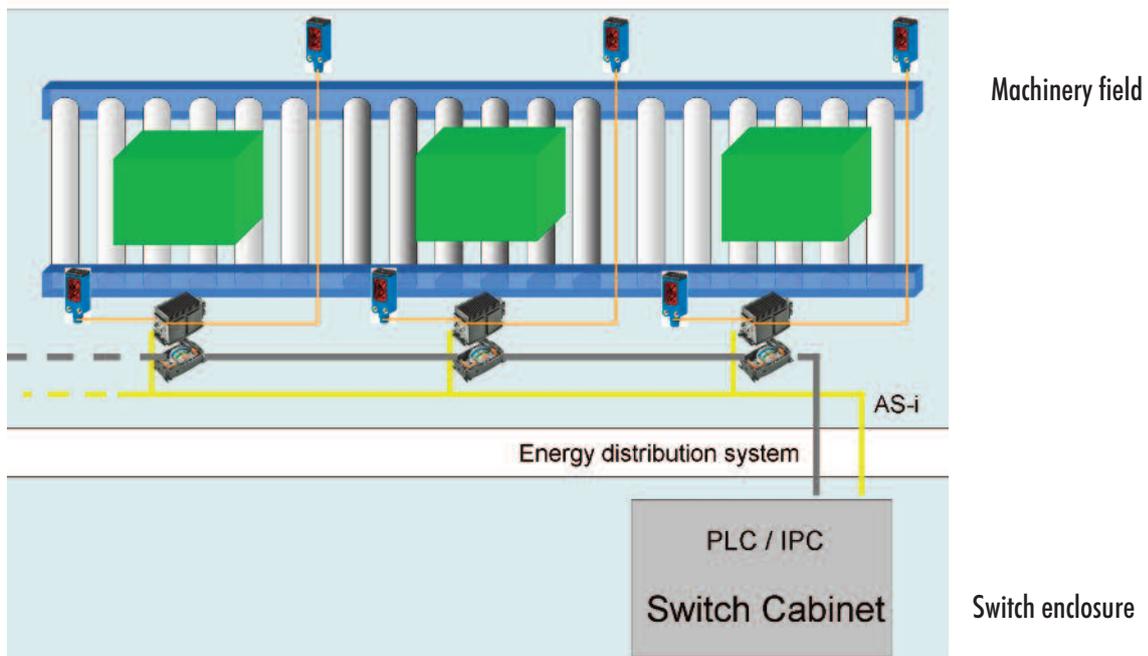
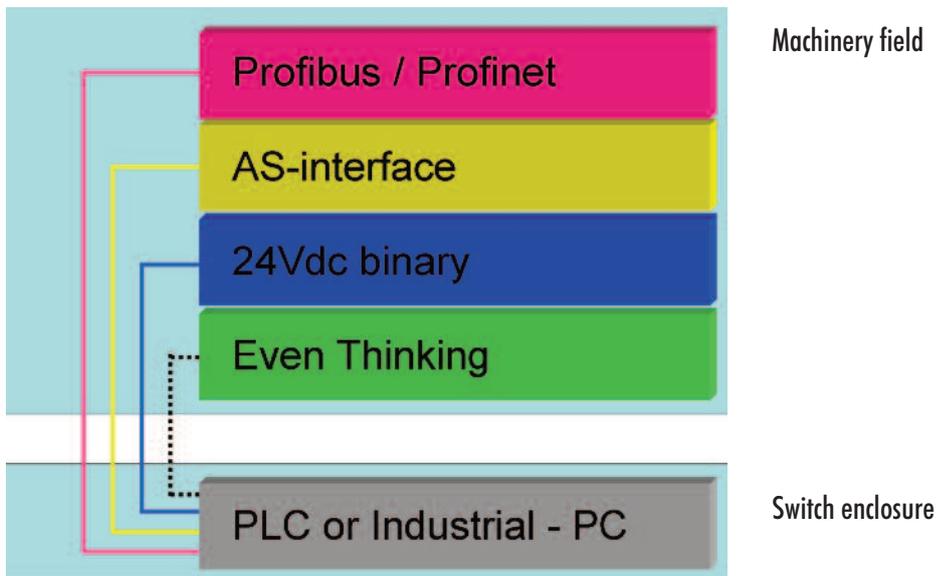
Communication interfaces for Field Drive System® (FDS)

Communication interfaces for Field Drive System® (FDS) Motormangement

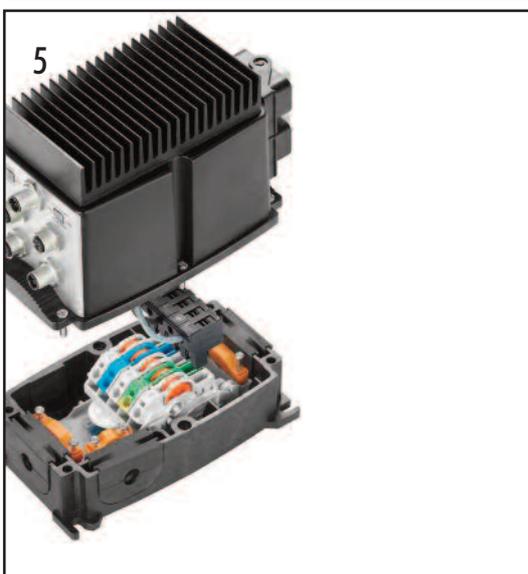
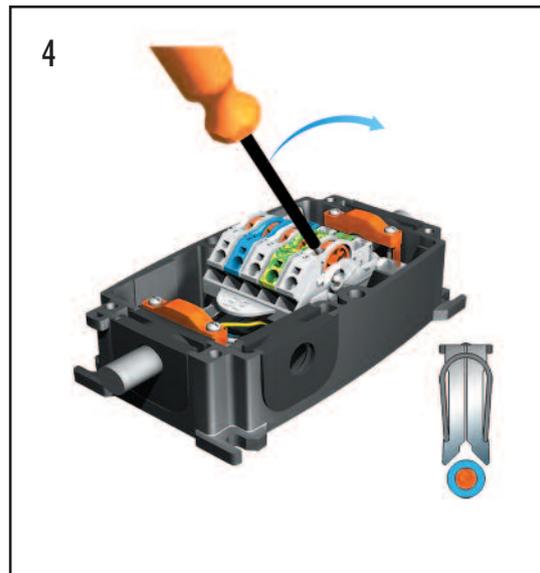
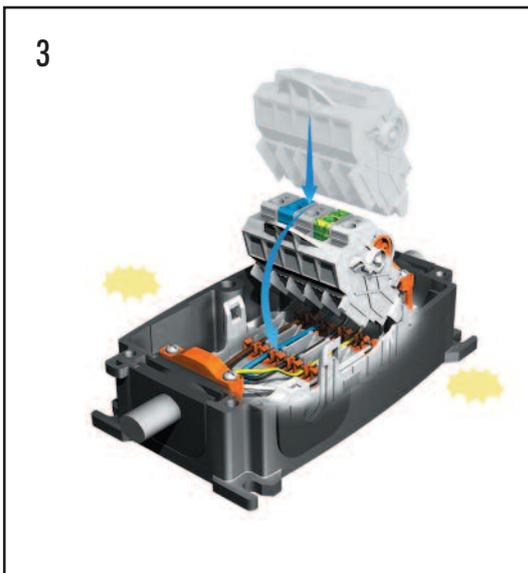
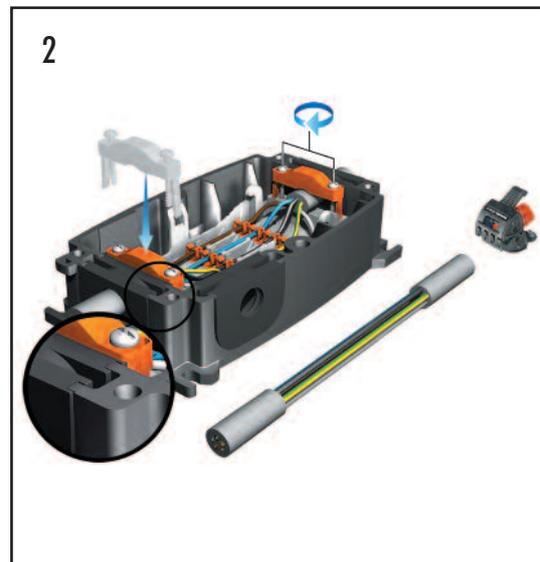
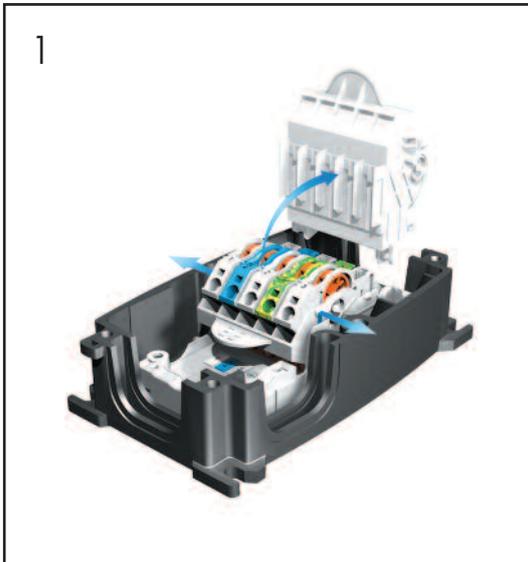
Das Field Drive System® (FDS) motor management provides a wide range of communication interfaces for your application.

Profinet | Profibus | AS-interface | 24Vdc Binary | Even Thinking-

Decentralized communication



Installation technology - Motor starter Field Drive System®



Installation technology - Motor starter Field Drive System®

The Installation Technology

With the flexible installation technology Weidmüller as well as MSF-Vathauer Antriebstechnik set new standards in the decentralized assembly leading to reduced costs and greater efficiency

The modular system allows the combination of functional modules such as frequency converters and motor starters, and is thus adapted to the application requirements.

Easy Installation

1. Opening of the Schneid-terminal adapter
2. Stripped of the power line. Here the power line is not cut or stripped.
The individual wires are inserted not cut into the appropriately marked points and fixed at the same time.
3. Insertion and fixation of the Schneid-terminal block
4. Contacting the loaded cable wires through the Schneid terminal block. Here the power line is already contacted without special tools.
5. + 6. Attaching the desired motor management such as
 - Frequency inverter VECTOR Field Drive System®
 - Motor Starter MONO-SWITCH Field Drive System®
 - Motor Starter MONO-SOFT-SWITCH Field Drive System®
 - Motor Starter DUO-SWITCH Field Drive System®
 - Motor Starter DUO-SOFT-SWITCH Field Drive System®
 - Motor Starter MONO-SOFT-SWITCH Reversible Field Drive System®

Control options and field bus systems

- Cascading multiple drives without superior process control
- 24Vdc PLC control
- AS-interface Spec. 3.0
- Profibus DP

Product features - Motor starter Field Drive System®

Aluminium heat skin



Viewable status LED's
Pluggable M12 connector for
- Field bus
- Sensors
- Manual operating terminal

Plastic case
Halogen free
Protection degreee IP65



Plug connector for Energy Distribution system.
Power supply for motor starter



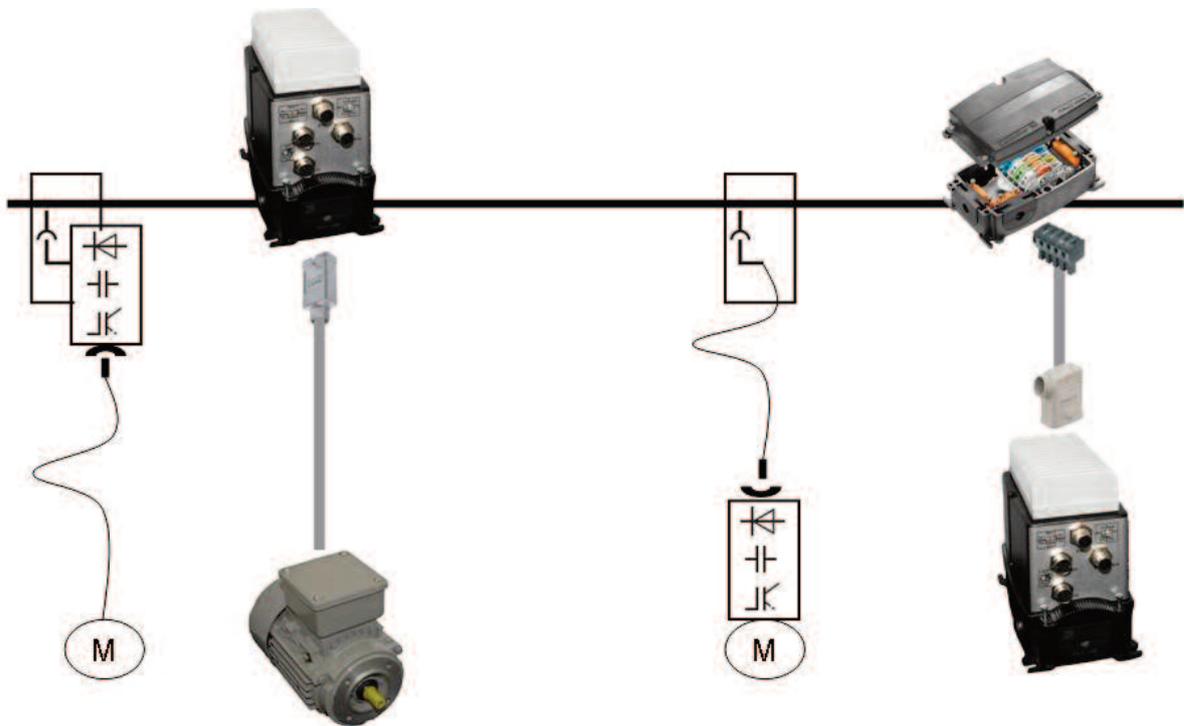
Easy and quick connection of Power Supply cable by IDC-Technology

Plug-in motor connections for one or two
motors in DESINA standard.

With an attached motor temperature evaluation
With attached brake management



Connecting and building forms - Motor starter Field Drive System®



Through the combined modular system different variants of the construction and installation of various engine management variants are at your disposal.

To bring the engine management and power distribution close to the engine on site, the Motor starter or the frequency inverter is directly plugged on the Field Drive System® Power Box. The advantage here is the much shorter installation and commissioning time, in the shortened system planning phase and in the simple "last second" transformation of the system topology.

Product variants of the Motor starter are characterized by standardized connections. Thus connected, depending on the product variants one or two 3-phase motors using Q8 motor connector to the DESINA Directive. The control of all Motor starters is via standard M12 connectors for sensors, the field bus and for a manual operation panel.

Features - Motor starter Field Drive System® - Cascade

The system of fully electronic motor starter MONO-SWITCH® Field Drive System cascade is characterized firstly by its modular design. On the other hand, this Motor starter is characterized by the fact that no communication should take place between a master controls.

System Description

To control the flow of material from accumulating conveyor systems a motor starter with integrated logic should be used. The drive of each conveyor segment is equipped with a special motor starter that automatically assumes control. As this standard photoelectric sensors are used that are connected to the respective Motor starter. For signaling between the different segments, an 8-pin M12 signal line is used, which is drawn from one segment to another. With this strand signal line the control electronic is also supplied with 24V from a central location.

Through internal control logic this motor starter communicates automatically with the following connected motor starter. Furthermore, standard photoelectric sensors are connected for signal processing. Thus, commercially available components are used. Power semiconductors switch each motor zero-crossing fully electronic. Hereby very high switching cycles, high reliability and long life cycles are achieved.

Built in fuses protect the engine starter against over current and short circuit. From outside visible LED's give a quick overview of the device status.



Control inputs

The externally visible LED's give a quick overview of the device status.

- Ready
- Error message motor temperature
- Motor Run 1
- Motor PTC

Through the integrated plug-M12 connectors the sensors, the connection of the cascade as well as the manual operation panel are connected quickly and easily. - Easy Plug and Play.

Connections

- 2 sensors per Motor (MONO-SWITCH)
- 1 x cascading
- 1 x Manual operation panel

Product features - Motor starter Field Drive System® AS-interface

The system of fully electronic motor starter MONO-SWITCH® Field Drive System is characterized by its modular design.

Electronic components such as soft-start functions, motor brake functions, reversing functions and an AS-interface connection are components of the modular system.

Power semiconductors switch each motor zero-crossing fully electronic. Hereby very high switching cycles, high reliability and long life cycles are achieved.

Built in fuses protect the engine starter against over current and short circuit. From outside visible LED's give a quick overview of the device status.

The AS-interface slave is configured in the A / B mode, so that up to 62 participants can be to operate on an ASi line.



Control inputs

The externally visible LED's give a quick overview of the device status.

- Ready
- Error message motor temperature
- ASi-Operative (or any other field bus-Sati)
- Motor Run 1
- Motor PTC

Through the integrated plug-M12 connectors the sensors, the field bus as well as the manual operation panel are connected quickly and easily. - Easy Plug and Play.

Connections

- 2 sensors per Motor (MONO-SWITCH) or
- 1 sensor per Motor (DUO-Switch)
- 1 x field bus (AS-I, Profibus DP)
- 1 x Manual operation panel

Product features - Motor starter Field Drive System® AS-interface



Motor connection

The integrated pluggable motor connector allow quick, and accurate connection of all motors

An adoption of tailored cables are possible due to a DESINA-Standard connection.

Either only one motor plug (MONO-SWITCH Field Drive System®) as well as two motor plugs (DUO SWITCH Field Drive System®) can be connected.

The motor plug for the frequency inverter VECTOR Field Drive System® is self-evident as EMC male connector.

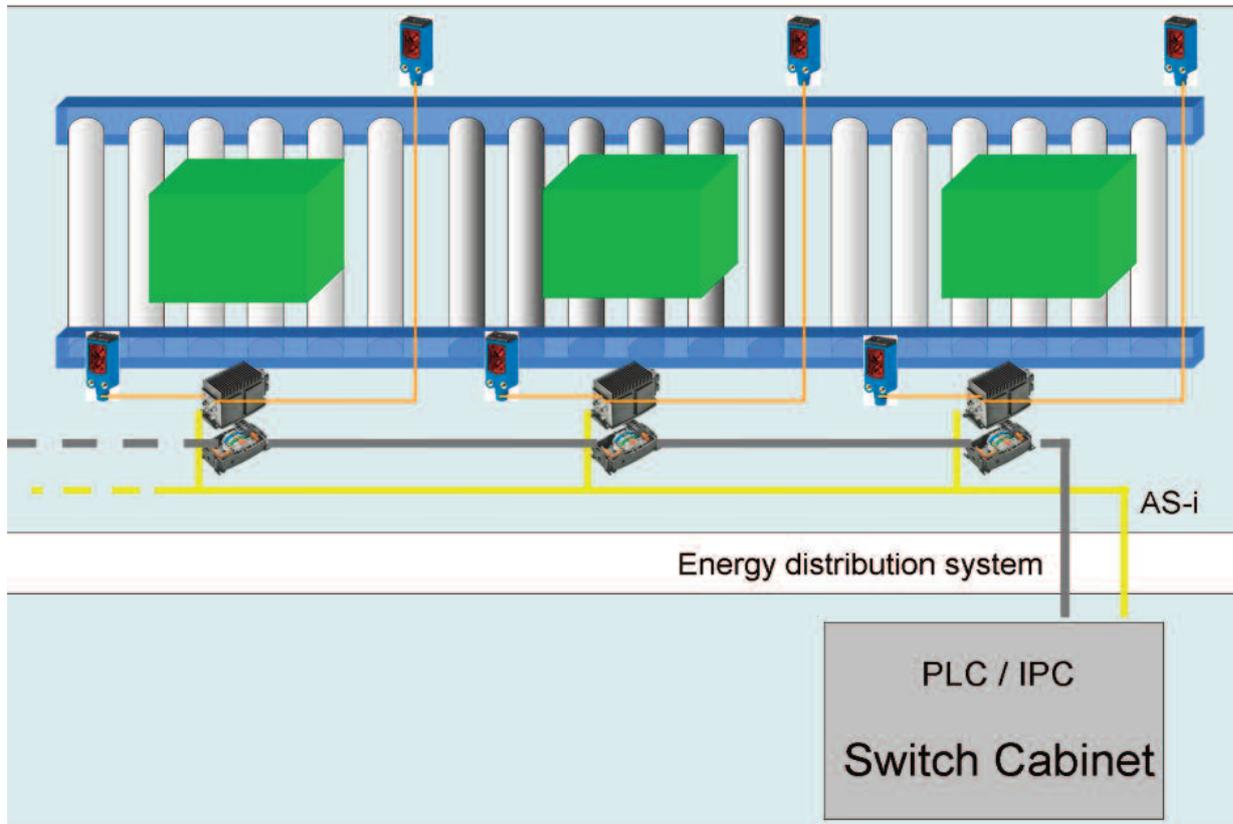
The motor plug includes default

- Motor connection
- Motor temperature evaluation
- Engine brake management

Product variants of the starter motor with integrated AS-interface

- MONO-SWITCH Field Drive System®
- DUO-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Field Drive System®
- DUO-SOFT-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Reversible Field Drive System®
- Frequency inverter VECTOR Field Drive System®

Installation topology - Motor starter Field Drive System® AS-interface



Schematic diagram of an analogue topology with motor starters and frequency converters. The control is done by AS-interface. The individual drive units are connected by an interconnector. An internal logic takes over the control of the respective drive units without a parent control.

Per motor starter up to two 3-phase motors can be connected. Per frequency inverter one 3-phase motor can be connected.

Benefits

- Decentralized motor starter or frequency inverter with high functionality
- Small number of devices to install
- Cost advantage through DUO- Motor Starter
- Time savings in the laying of energy- and field bus
- No additional power supply cable for AS-interface necessary
- Up to two sensors can be connected on the motor starter / frequency inverter
- Reduction of the used components

Applications for two-motor operation

- Traversing
- Turntables
- Deviation table
- etc.

Product features - Motor starter Field Drive System® Profibus DP

The fully electronic Motor Starter Field Drive System® with integrated Profibus DP-control provides a direct connection of a Profibus able control.

At the embedded M12 plug / socket, the Profibus cables are connected in the so-called daisy chain process to the motor starter.

Internal power supply (Optional)

Furthermore, the motor starter is powered of an internal power source, so no separate power supply is required for the motor starter.

External power supply (Standard)

Optional, the motor starter can also be supplied from an external power source. So that in the event of a mains power loss, the communication between the Profibus master and the motor starter is ensured. This has the advantage that at any materials handling equipment, the sensors provide all the necessary information's from the storage space usage.

Power semiconductors switch each motor zero-crossing fully electronic. Hereby very high switching cycles, high reliability and long life cycles are achieved.

Externally visible LED's give a quick overview of the device status.



Control inputs

The externally visible LED's give a quick overview of the device status.

- Ready
- Error message motor temperature
- Profibus ok
- Motor Run 1
- Motor Run 2

Through the integrated plug-M12 connectors the sensors, the field bus as well as the manual operation panel are connected quickly and easily. - Easy Plug and Play.

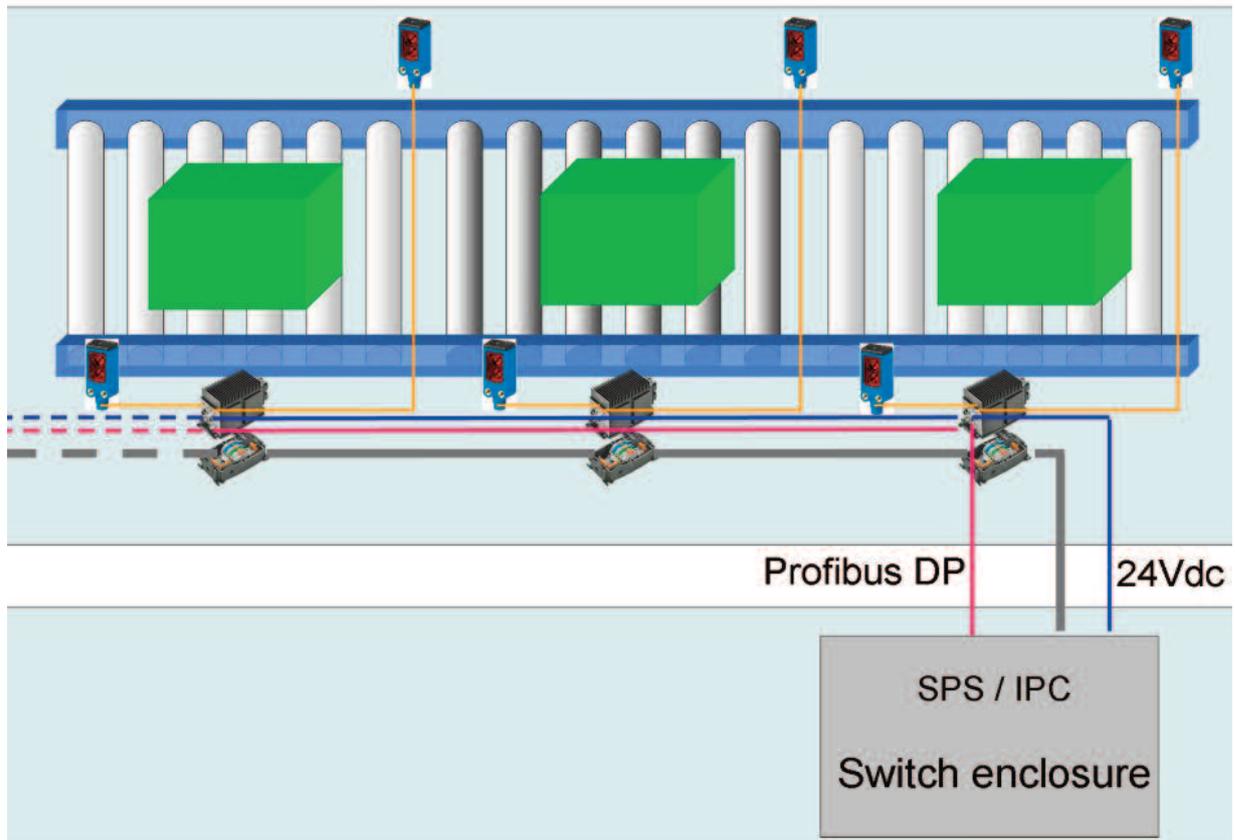
Connections

- 4 sensors per motor (MONO-SWITCH) or
- 2 sensor per motor (DUO-Switch)
- 2 x field bus (Profibus DP)
- 1 x Manual operation panel

Product variants motor starter with integrated ProfibusDP-Interface

- MONO-SWITCH Field Drive System®
- DUO-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Field Drive System®
- DUO-SOFT-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Reversible Field Drive System®
- Frequency Inverter VECTOR Field Drive System®

Installation topology - Motor starter Field Drive System® Profibus



Schematic diagram of an analogue topology with motor starters and frequency converters. The control is done by Profibus-DB. The individual drive units are connected by an interconnector. An internal logic takes over the control of the respective drive units without a parent control. The Profibus cable is connected in daisy-chain process in which a device is connected to the next in succession.

Per motor starter up to two three-phase motors can be connected. Per frequency inverter one three-phase motor can be connected.

Benefits

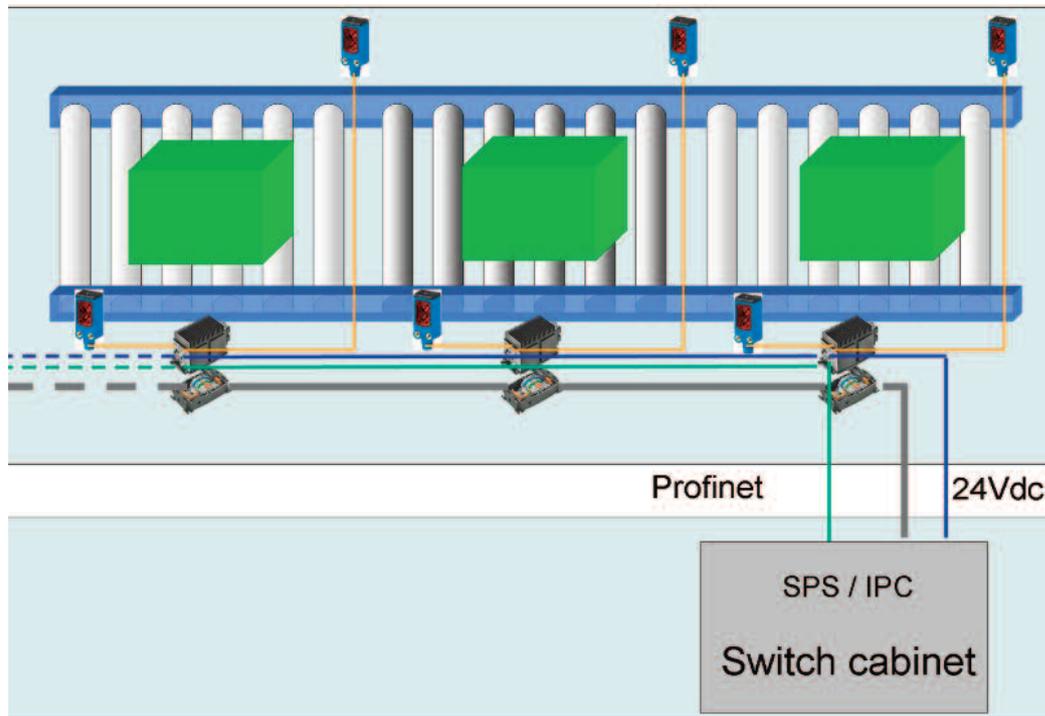
- Decentralized motor starter or frequency inverter with high functionality
- Small number of devices to install
- Cost advantage through DUO- Motor Starter
- Time savings in the laying of energy- and field bus

- No additional power supply cable for AS-interface necessary
- Up to two sensors can be connected on the motor starter / frequency inverter
- Prefabrication in the factory
- Reduction of the used components

Applications for two-motor operation

- Traversing
- Turntables
- Deviation table
- etc.

Installation topology - Motor starter Field Drive System® Profinet



Installation topology with Profinet communication

Schematic diagram of a system topology with motor starters and frequency inverter. The control is done with Profinet communication. The Profinet wiring is done in daisy-chain method in which a device is connected to the next in succession. The internal Profinet logic ensures that the decentralized line topology is maintained.

Per motor starter up to two three-phase motors can be connected. Per frequency inverter one three-phase motor can be connected.

Benefits

- Decentralized motor starter or frequency inverter with high functionality
- Small number of devices to install
- Cost advantage through DUO- Motor Starter
- Time savings in the laying of energy distribution system and field bus

- Up to four sensors can be connected on the motor starter / frequency inverter
- Prefabrication in the factory
- Reduction of the used components

Applications for two-motor operation

- Traversing
- Turntables
- Deviation table
- etc.

Product features - Motor starter Field Drive System® Profinet

The fully electronic Motor Starter Field Drive System® with integrated Profinet-control provides a direct connection of a Profinet able controller.

At embedded M12 plug / socket, the Profinet cables are connected in the so-called daisy chain process to the motor starter.

The motor starter is supplied from an external power source. So that in the event of a mains power loss, the communication between the Profinet master and the motor starter is ensured. This has the advantage that at any materials handling equipment, the sensors provide all the necessary information's from the storage space usage.

Externally visible LED's give a quick overview of the device status.



Control inputs

The externally visible LED's give a quick overview of the device status.

- Ready
- Error message motor temperature
- Profibus ok
- Motor Run 1
- Motor Run 2

Through the integrated plug-M12 connectors the sensors, the field bus as well as the manual operation panel are connected quickly and easily. - Easy Plug and Play.

Connections

- 4 sensors per motor (MONO-SWITCH) or
- 2 sensor per motor (DUO-Switch)
- 2 x field bus (Profinet)
- 1 x Manual operation panel

Product variants motor starter with integrated Profinet-Interface

- MONO-SWITCH Field Drive System®
- DUO-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Field Drive System®
- DUO-SOFT-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Reversible Field Drive System®
- Frequency Inverter VECTOR Field Drive System®

Product variants - Frequency inverter VECTOR Field Drive System®



Frequency inverter VECTOR Field Drive System®

The frequency inverter VECTOR Field Drive System® is used everywhere motor speeds will vary for specific applications.

Characteristics of the VECTOR Field Drive System®

- Power range: 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Clock speed: up to 8 KHz
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: 4-Q - Operating
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes
- Standard: Programmable brake for lifting frames
- Standard: Integrated EMC filter class A
- Standard: Integrated motor temperature control for each motor
- Standard: Standard: 8 preset speeds available
- Standard: Connection for manual control unit
- Standard: Connection of 2 sensors per motor
- Standard: Q8 Motor connector to DESINA for each motor
- Optional: Connecting of a brake resistor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System®



Motor starter - MONO-SWITCH Field Drive System®

The Motor starter MONO-SWITCH Field Drive System® is used everywhere where the drive without a speed change without integrated soft start must be application-specific switched on and off.

The MONO-SWITCH Field Drive System® is designed for the direct on- and off turning of one separate three-phase asynchronous motor.

Characteristics of the MONO-SWITCH® Field Drive System

- Power range: 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: Connection of 2 (4) sensor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System®



Motor soft starter - MONO-SOFT-SWITCH Field Drive System®

The Motor soft starter MONO-SOFT-SWITCH Field Drive System® is used everywhere where the drive without a speed change with integrated soft start must be application-specific switched on and off.

The MONO-SOFT-SWITCH Field Drive System® is designed for the soft on— and off turning of a three-phase asynchronous motor.

Characteristics of the MONO -SOFT-SWITCH Field Drive System®

- Power range: 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times
- Standard: Adjustable motor current
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 (4) sensors
- Standard: Q8 Motor connector to DESINA
- Standard: Reversing (reversing starter)
- Security: By 3-phase independent soft switching for each motor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System®



Motor starter - DUO-SWITCH Field Drive System®

The motor starter DUO-SWITCH Field Drive System® is used everywhere where two drives independently of one another without application-specific change in speed and without a soft start must be switched on and off.

The DUO-SWITCH Field Drive System® is designed for the direct on— and off turning of two separate 3-phase asynchronous motors.

Characteristics of the DUO-SWITCH ® Field Drive System

- Power range: 0,75kW for each motor
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: Connection of 2 (4) sensor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System®



Motor Soft starter - DUO-SOFT-SWITCH Field Drive System®

The Motor Soft Starter DUO-SOFT-SWITCH Field Drive System® is used everywhere where two drives without a speed change with integrated soft-start must be application-specific switched on and off.

The DUO-SOFT-SWITCH Field Drive System® is designed for the soft on– and off turning of two independent 3-phase asynchronous motors.

Characteristics of the DUO-SOFT-SWITCH ® Field Drive System

- Power range: 0,75kW for each motor
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times per motor
- Standard: Adjustable motor current of each motor
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: connection of 2 (4) sensor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System®



Motor soft starter – MONO-SOFT-SWITCH Reversible Field Drive System®

The motor soft starter MONO-SOFT-SWITCH-Reversible Field Drive System® is used everywhere where the drive without a speed change with integrated soft start must be application-specific switched on and off and a rotation reversal is necessary.

The MONO-SOFT-SWITCH Reversible Field Drive System® is designed for the soft on– and off turning of a 3-phase asynchronous motor and for the rotation reversal.

Characteristics of the MONO-SOFT-SWITCH Reversible Field Drive System®

- Power range: 2,2kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times
- Standard: Adjustable motor current
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 (4) sensors
- Standard: Q8 Motor connector to DESINA
- Standard: Reversing (reversing starter)
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface
- Profibus DP
- Profinet
- 24V binary
- Even Thinking for storage conveying systems

Product variants - Motor starter Field Drive System® MOT



Motor Starter Field Drive System® mounted on 3phase asynchronous motor

Motor starter Field Drive System® MOT

The Motor starter Field Drive System® MOT is always used where the motormanagement application-specific must be built or can be built onto the motor.

Characteristics of the motor starter Field Drive System® - MOT

- Power range: 2,2kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution
- Integrated Field Bus interface
 - AS-interface
 - Profibus DP
 - Profinet
 - 24V binary
 - Even Thinking for storage conveying systems
- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 (4) sensors
- Standard: Q8 Motor connector to DESINA
- Optional: Connection of brake resistor

Motor specifications

- AC induction gear motor 0,09 kW - 2,2 kW
- Transmission type: worm gears, spur gears, bevel gears, worm-spur gear, etc.
- Design: B3, B14, B34, B35
- Motor protection: 3 x built-in PTC thermistor

Product Variants of the Motor Starter Field Drive System® - MOT

- MONO-SWITCH Field Drive System®
- DUO-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Field Drive System®
- DUO-SOFT-SWITCH Field Drive System®
- MONO-SOFT-SWITCH Reversible Field Drive System®
- Frequency inverter VECTOR Field Drive System®

Field bus systems

- AS-interface | Profibus DP | Profinet | 24V binary | Even Thinking for storage conveying systems

Technical data and dimensions

Type	MONO-SWITCH FDS	MONO-SOFT-SWITCH FDS	DUO-SWITCH FDS	DUO-SOFT-SWITCH FDS	MONO-SOFT-SWITCH - Rev. FDS	Frequency inverter VECTOR FDS
Power supply	400V AC					
Net frequency	50 /60 Hz					
Motor power	2,2 kW		0,75 kW each Motor		2,2 kW	0,75 kW or 2,2 kW
Motor current	5 A					
Main fuses	Internal	–	Internal	–	–	–
Ambient temperature	0 - 40°C					
Inputs	2 (4) x Sensor 1 (2) x Communication 1 x Manual operating terminal		1 (2) x Sensor for each Motor 1 (2) x Communication 1 x Manual operating terminal		2 (4) x Sensor 1 (2) x Communication 1 x Manual operating terminal	2 (4) x Sensor 1 (2) x Communication 1 x Manual operating terminal
Communication	24V binary / AS-Interface / Profibus DP / Profinet / Even Thinking					
Protection degree	IP65					
Sensor voltage	18V - 30V					
Sensor current max.	20mA					
Dimensions incl. Power Box (without motor plugs and sensor plugs)	H: 165 mm* W: 211 mm D: 104 mm * Frequency inverter VECTOR FDS 2,2 kW: The dimension are 183 mm.					

Subject to change



Smart Field Automation - Accessories for Field Drive System®

Smart Field Automation® Power Supply 24



Smart Field Automation® Power Supply 24

The Power Supply is plugged onto the Power Box of the Field Drive System. More system components are supplied with 24Vdc via the integrated M8 or M12 connectors. The Power Supply can supply other system components with DC voltage via 4 outputs.

The wide voltage range ensures a safe and reliable operation in almost any application.

The externally visible LED displays and visualize the device status.

Integrated protection features for each of the 4 outputs ensure safe operation. A common failure status function reports any errors to your system controller. The protection degree IP65 ensures the decentralized mounting in any position (multimounting).

The power supply operates in a 3-phase, in a 2-phase and in-phase operation. These operating conditions are monitored via the built-in protection functions.

Power supply	190V-480Vac or 270V-680Vdc
Power supply operation mode	3-phase / 2-phase / 1-phase
Output voltage	24Vdc SELV
Output current	4A rather 4x1A each output via M8 or M12 sockets
Boost function	Integrated. 50% for 30 sek.
Common failure function	Integrated. Output via M8 or M12 sockets potential free
Protection degree	IP 65
Ambient temperature	0°C ... +40 °C
Visual LED's	Integrated for device status

Subject to change

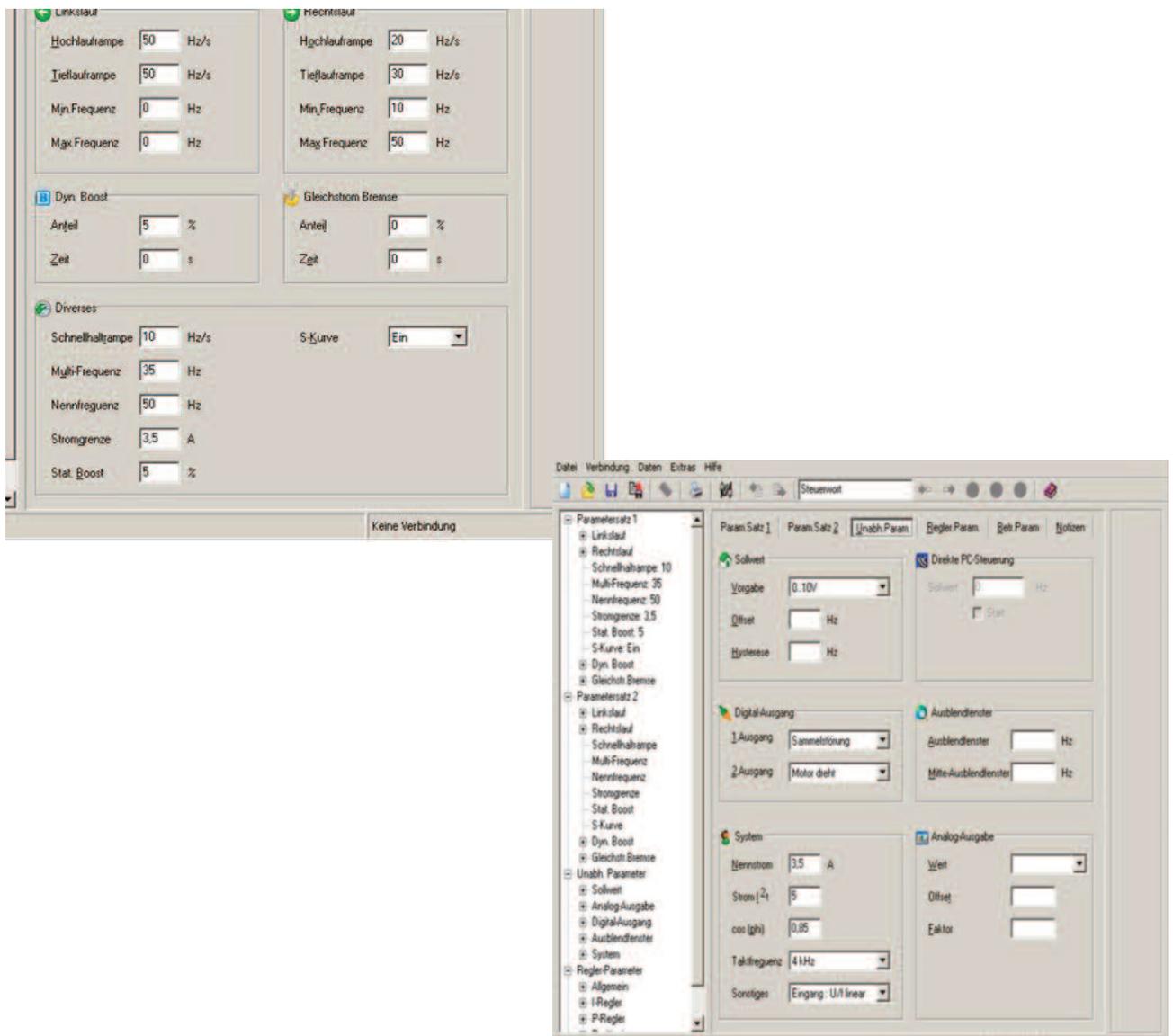
Smart Field Automation - Accessories for Field Drive System®

PC-Parameterization Software VECTOR - PC - WIN

Field Drive System Inverter VECTOR® - Configuration

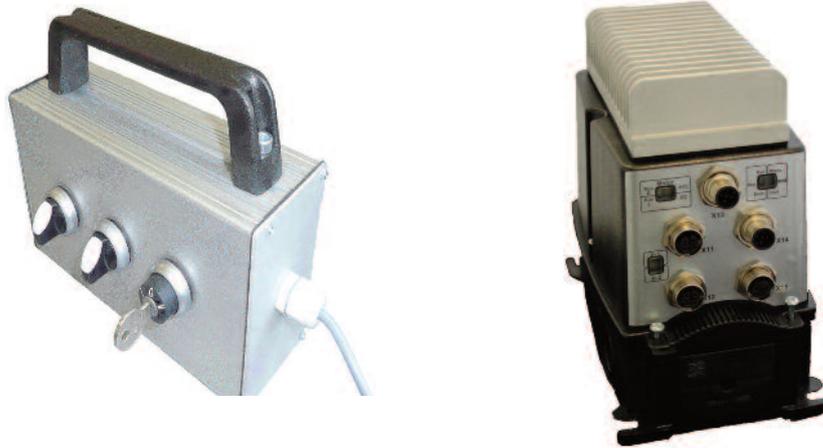
With the parameterisation-Software VECTOR-PC-WIN and with the appropriate programming cable the frequency inverter VECTOR Field Drive System® can be adjusted quickly and clearly.

With the structured computer programming software all inverter parameters are set ON-line or OFF-line. With the Initiation of communication to the frequency inverter all adjusted data is transmitted to the frequency inverter. The reproducibility as well as the documentation facilities of all the settings are an important tool in the project.



Smart Field Automation - Accessories for Field Drive System®

Manual operation panel



All motor starter (SWITCH) or frequency inverter (VECTOR) are controlled by this manual operation panel without a superordinated controller by the pluggable M12 connector.

The function start, stop, right direction, left direction can be activated during the initial operation or at installation or at a revision by the manual operation panel. The integrated key-operated switch can switch off the function of the manual operation panel and activate the superordinated controller.

The manual operation panel is ideal for commissioning purposes before the field bus system is connected. Therefore, a test of individual plant modules without higher-level control is already possible at the installer and the user.

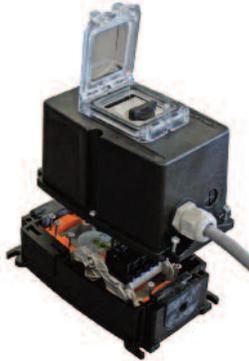
Copying tool for motor starter and frequency inverter

Device parameterisation without PC-Software



In case of AS-interface devices or 24Vdc binary devices the copying tool for motor starters and frequency inverter stored the device parameters (eg. from a master device) by a download. These cached device parameters can be uploaded to further devices which have been changed or which have been installed in a new application without a laptop or PC software. Just with a two-button function.

Smart Field Automation - Accessories for Field Drive System®



Motor protection switch FDS

Regardless of the used motor management such as motor starters, motor soft starters or frequency inverter, the user can easily protect the motors against overcurrent by using the Field Drive System motor protection switch.

The optional pre-assembled housing cover with integrated motor protection switch is quickly and easily attached to the Field Drive System Power Box. The connected plug is inserted into the insulation block. The motor cable is easily connected to the motor circuit breaker.

The tripping current of the integrated motor protection switch is set from the outside. Furthermore, the motor protection switch can be turned ON and OFF from the outside thanks to the attached and openable transparent protective cap on the front panel.

Advantages of the motor protection switch

- Maintaining of the energy distribution system Field Drive System (FDS)
- Reusing of the Field Drive System components
- Easy replacement of the housing cover
- Fast connection of the motor protection switch by prefabricated motor cables
- Setting of tripping current from the outside
- Switch position (ON/OFF) recognisable from the outside
- High protection degree IP 65



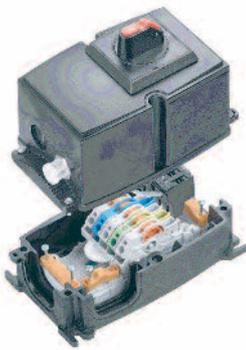
Outlets - Sockets

The decentralized outlets supply additional components in machinery field. The Smart Field Automation (SFA) sockets 230 and the Smart Field Automation (SFA) socket 400 are useful extensions for the decentralized power distribution and motor management system Field Drive System (FDS). The optional pre-assembled housing cover with integrated 230V socket or 400V CEE socket 16A is fitted quickly and easily to the already used Field Drive System (FDS) Power Box. The connected connector with integrated fuse for 16A is inserted into the insulation block. Thus, each plugged outlet is optimally secured locally.

Advantages of the Smart Field Automation outlets

- Optimal supply of additional components in the machine field
- Supply of start-up devices in the machinery field during commissioning
- Easy to mount on the existing Field Drive System (FDS) Power Box
- Internal protection 16A for standard socket and CEE socket
- Also available for other countries

Smart Field Automation - Accessories for Field Drive System®



Field Drive System Box ON / OFF

With the service switch for the power field box individual devices or an entire power line can be disabled via a lockable maintenance switch.

The shutdown is signaled via another M12 output to the controller. (optional)

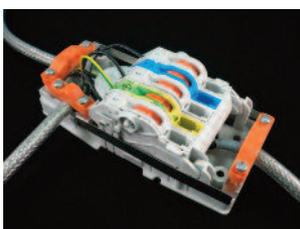
The IP65 protection class enables the import and attachment of almost all applications.



Field Drive System Box Fuse

With the fuse element for the Field Drive System Box partial or total Power lines in the field are all-pole, i.e. protected in all three phases.

The activation of one or more fuses is signaled via externally visible red LED's or a separate M12-output (Field Drive System Fuse Box R).



Field Drive System Box Screening Shield FPB

With the screen plate for the Field Drive System box the possibility is created to relocate shielded power leads.

To avoid interferences in sensitive sensor cables by means of the inserted shield plate the cable shield is continued over a large without cutting through these. Thus, the EMC-compliant installation in any Field Drive System Box is guaranteed.

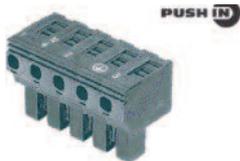
Smart Field Automation - Accessories for Field Drive System®

Field Drive System Box - Energy Distribution Box

The Energy Distribution Box is the modular base for decentralised automation.

The Field Drive System® product family is a unique solution system of your varied uses and create stands in the factory and building automation.

Cable cross-section	6 mm ²
Rated voltage / Rated current	800 V/41 A
Rated voltage / Rated current	8 kV
Insulation material / Material colour	Polycarbonate / black
Flammability class by UL 94	5VA
Halogen free / Silicone free	Yes / Yes
Protection class	IP 65
Temperature mounting, min.-max.	10 °C ... 40 °C
Working temperature, min.-max.	-40 °C ... 55 °C
Single-wire, min.-max.	2,5 mm ² ... 6 mm ²
Multi-wired, in.-max.	2,5 mm ² ... 6 mm ²
Fine-wired, min.-max.	2,5 mm ² ... 6 mm ²
Extra fine-wired, min.-max.	2,5 mm ² ... 6 mm ²
Blade size	0,6 x 3,5 mm



Field Drive System Box - Plug

Cable cross-section	4 mm ²
Rated voltage / Rated current	90 V/32 A
Surge voltage	kV
Mounting	stuck
Insulation material / Material colour	PA GF/black
Flammability class by UL 94	V0
Working temperature, min.-max.	-50 °C ... 120 °C
Cable outflow direction	90°
Inspection tapping	2 mm
Code able	Yes
Connection technique	Push In
Poles	5
Number of connections/Poles	1

Smart Field Automation - Accessories for Field Drive System®



Field Drive System Box - Dichtungen

The gaskets are pocketed without tools in the intended openings of the cases IP65. This allows the assembly of the energy management quick and easy. The gaskets are to be chosen to the used cable diameter. For the FieldPower® Box are three gaskets are required.

Material	EPDM
Flammability class by UL 94	HB
Colour	black
Thickness	18 mm
Type of cable	round / ribbon
Halogen free	yes
Silicone free	yes
Tightness	IP 65
Diameter Ø	
7.5 - 9 mm	RKDG D9 PT6
9 - 11 mm	RKDG D11 PT6
11 - 13 mm	RKDG D13 PT6
13 - 15 mm	RKDG D15 PT6
15 - 17 mm	RKDG D17 PT6



Sheathing strippers for PVC-insulated round cable - Type AM 16

- Stripping of the insulation possible at any point of the cable
- Very well suited for stripping of cables in the cable channel
- Pivoting blade for circular- and longitudinal section
- Handle tips with integrated cutter for breaking cut insulation
- Pivoting blade for circular, longitudinal and spiral cuts
- Bracket with integrated cutter for breaking cut insulation
- Spare blade integrated
- Cable type: PVC round cable
- Cable diameter: 6 - 17.3 mm
- Adjustable cutting depth: 0.8 - 2.5 mm
- Length: 53mm
- Weight: 60g

Smart Field Automation - Accessories for Field Drive System®



AS-Interface Master B&W

Versions: AS-i 3.0 PROFIBUS-DP-Gateway in stainless steel

- AS-i 3.0 DeviceNet-Gateway in stainless steel
- AS-i 3.0 CANopen-Gateway in stainless steel
- AS-i 3.0 Modbus-Gateway in stainless steel
- AS-i 3.0 EtherCAT-Gateways in stainless steel
- AS-i 3.0 EtherNet/IP-Gateway in stainless steel
- AS-i 3.0 PROFINET-Gateway in stainless steel
- AS-i 3.0 RS232-Master in stainless steel

Order-No.: Please contact us

Unit: 1 piece



AS-Interface Power supplies B&W

Version: - AS-i power supply 1.8 A

- AS-i power supply 4 A, Wide range power supply
- AS-i Power Supply 8 A, wide range power supply
- 8A Power supply for AS-i Master in Stainless Steel in
Version 1 power supply for 2 AS-i networks
- 4A 3-phase power supply for AS-i Master in Stainless Steel
- 8A 3-phase power supply for AS-i Master in Stainless Steel
- AS-i power supply decoupling: Supply 2 AS-i networks via a power supply

Order-No. Please contact us

Unit: 1 piece



AS-interface Flat cable yellow

Description: AS-KG-GE

Design: AS-interface Flat cable

Order - Nr.: 9455110000

Unit: 100 m

Smart Field Automation - Accessories for Field Drive System®

Motor cable in PVC for motor starter - Series MONO-SWITCH und DUO-SWITCH

The output cables are fully assembled and beaten with HQ8 plug.

The pin assignments are as follows (DESINA):

Pin 1: U
Pin 2: n.c
Pin 3: W
Pin 4: BR
Pin 5: TF
Pin 6: BR
Pin 7: V
Pin 8: TF



Type: FPL 8G1.5/Q8KW/2
Design: Angled cable outlet
Order-No.: 8000005235
Length: 2m
Unit: 1 piece

Type: FPL 8G1.5/Q8KW/5
Design: Angled cable outlet
Order-No.: 8000005237
Length: 5m
Unit: 1 piece



Type: FPL 8G1.5/Q8KG/2
Design: Straight cable outlet
Order-No.: 8000005238
Length: 2m
Unit: 1 piece

Type: FPL 8G1.5/Q8KG/5
Design: Straight cable outlet
Order-No.: 8000005239
Length: 5m
Unit: 1 piece

Smart Field Automation - Accessories for Field Drive System®

Motor cable in PVC for frequency inverter – Series - VECTOR Field Drive System®

The motor cables are fully assembled and fitted with an EMC-compliant HQ8 plug

The pin assignments are as follows (DESINA):

Pin 1: U
Pin 2: nc
Pin 3: W
Pin 4: BR
Pin 5: TF
Pin 6: BR
Pin 7: V
Pin 8: TF



Type: FPL 4G1.5C4/Q8MW/2
Design: Angled cable outlet
Order-No.: 8000005240
Length: 2m
Unit: 1 piece

Type: FPL 4G1.5C4/Q8MW/5
Design: Angled cable outlet
Order-No.: 8000005241
Length: 5m
Unit: 1 piece



Type: FPL 4G1.5C4/Q8MG/2
Design: Straight cable outlet
Order-No.: 8000005242
Length: 2m
Unit: 1 piece

Type: FPL 4G1.5C4/Q8MG/5
Design: Straight cable outlet
Order-No.: 8000005243
Length: 5m
Unit: 1 piece

Smart Field Automation - Accessories for Field Drive System®



AS-interface piercing - Adapter for ASi – Ribbon cable

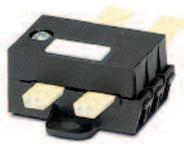
Description: SAI-ASI-T-FR

Design: With molded cable and M12 - plug for connection to motor starter

Order-No.: 1925010000 for cable length 0,5 m

Order-No.: xxxxxxxxxxxx for cable length 1,0 m

Unit: 1 piece



AS-interface bridge module

Description: SAI-ASI-T-FF

Design: Piercing technology for two Asi- flat cables

Order-No.: 1924990000

Unit: 1 piece



M12 ASi - Sleeve - Straight with screw bracket

Description: SAIB-3/7

Design: M12, Sleeve, straight, Screw

Order-No.: 1021490000

Unit: 1 piece



M12 ASi - Sleeve - Angled 90° with screw bracket

Description: SAI BW-3/7

Design: M12, Sleeve, angled, screw

Order-No.: 1021310000

Unit: 1 piece

Smart Field Automation - Accessories for Field Drive System®



AS-interface field distributor with 4 inputs M12

Description: SAI-ASI-L-M12-4I V3
Design: AS-interface module complete
Transfer rate: 167 Kbits
Order-No 1962680000
Unit: 1 piece



AS-interface field distributor with 4 outputs M12

Description: SAI-ASI-L-M12-4O V3
Design: AS-interface module complete
Transfer rate: 167 Kbits
Order-No 1962700000
Unit: 1 piece



Sensor - Aktor- interconnector

Description: SAIL-M12GM12G-3-1.5U
Design: Sensor/Actuator-cable, Interconnector, PUR/ PVC
Length: 1.5 m / 3,0 m
Order-No 9457230150 for cable length 1,5m
Order-No 9457230300 for cable length 3,0m
Unit: 1 piece



Protection cap M12 for not connected M12 plugs

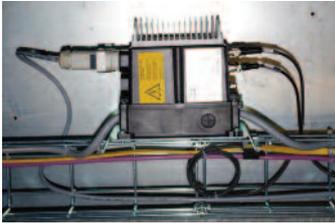
Design: M12 protection cap Description: SAI-SK-M12-UNI Order-No.: 2330260000
Unit: 20 pieces



AS-interface motor starter Addressing unit

Design: Addressing unit for AS-interface
Description: SAI-ASi-Handheld
Order-No.: 1805410000
Unit: 1 piece

Application Examples



Frequency Inverter VECTOR Field Drive System® AS-i

Frequency inverter installed on an Intra-logistics system for pallet handling. Realize up to 8 different speeds. Controlled by AS-interface



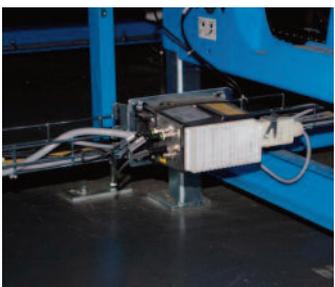
Fully electronic motor starter DUO-SWITCH AS-i Field Drive System ®

Fully electronic motor starter DUO SWITCH Field Drive System ® with AS-interface. Feed via the Field Drive System box. With two connected 3-phase motors with a standard Q8 Motor plug according to DESINA standard.



Fully electronic motor starter MONO-SWITCH - Field Drive System ® AS-i

Fully electronic motor starter with MONO-SWITCHField Power ® Power bus distribution system. Installed on an intra-logistics system for container handling equipment.

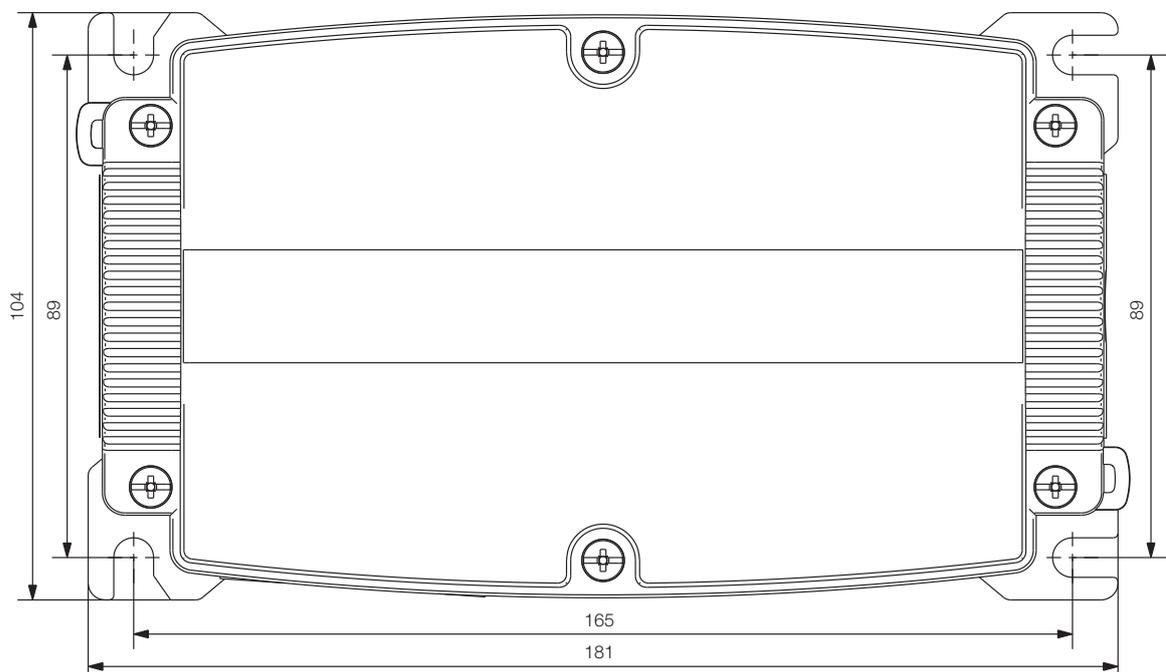
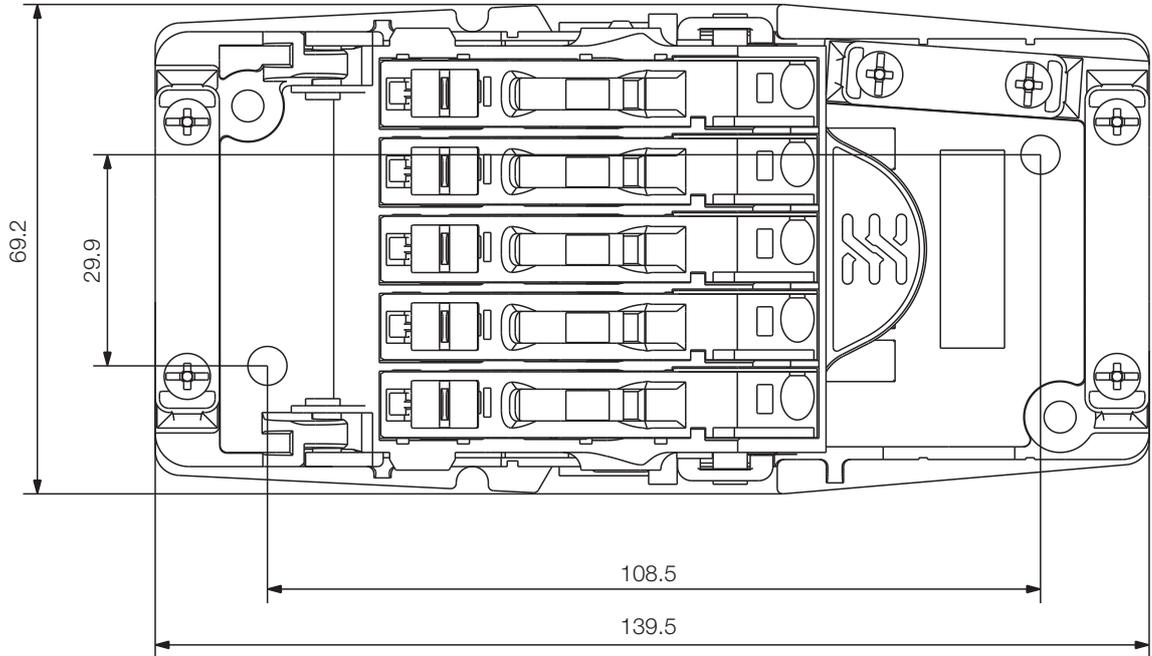


Fully electronic motor starter MONO-SOFT-SWITCH Reversible - Field Drive System ® AS-i

Fully electronic motor starter MONO-SOFT-SWITCH Reversible with reverse rotation and adjustable soft start. Installed on a pallet conveyor system.

Drilling Template

PT6



Contact to MSF-Vathauer Antriebstechnik

Headquarters

MSF-Vathauer Antriebstechnik GmbH & Co KG
Am Hessentuch 6-8
32758 Detmold
Tel.: (+49) (0)5231 - 63030
Fax: (+49) (0)5231 - 66856
Email: info@msf-technik.de
www.msf-technik.de

Sales North-Germany

MSF-Vathauer Antriebstechnik GmbH & Co KG
Am Hessentuch 6-8
32758 Detmold
Tel.: (+49) (0)5231 - 63030
Fax: (+49) (0)5231 - 66856
Email: verkaufsleitung@msf-technik.de
www.msf-technik.de

Sales South-Germany & Europe

MSF-Vathauer Antriebstechnik GmbH & Co KG
Holderäckerstrasse 8-10
70499 Stuttgart
Tel.: (+49) (0)711 - 38045011
Fax: (+49) (0)711 - 38045013
Email: info@msf-technik.de
www.msf-technik.de

Sales East-Germany

MSF-Vathauer Antriebstechnik GmbH & Co KG
Am Hessentuch 6-8
32758 Detmold
Tel.: (+49) (0)5231 - 63030
Fax: (+49) (0)5231 - 66856
Email: verkaufsleitung@msf-technik.de
www.msf-technik.de

Contact to MSF-Vathauer Antriebstechnik

Sales UK

Texam Limited
Mr. John Mc Guigan
Altona Road
Blaris Industrial Estate
Lisburn Co. Antrim
BT27 5QB
T: (+44) 28 9267 4137
F: (+44) 28 9260 7238
eMail: sales@texam.co.uk
www.msf-technik.co.uk
www.msf-technik.com

Sales The Netherlands

INTECNO Holland
Doorlopend in beweging
John Triki
Kantoor: Ambachtweg 17a
NL-5731 AE Mierlo
Nederland
Tel:(++31) (0)492 565959
Fax: (++)31) (0)492 359358
eMail: info@intecno.nl
Internet: www.intecno.nl

Sales Norway

J.F. Knudtzen AS Automasjon
Billingstadsletta 97
Postboks 160
NO-1378 Nesbru
Norwegen
Tel: (++)47) (0)66 983350
Fax: (++)47) (0)66 980955

Sales Spain

Garper-Telecomunicaciones
Guillermo Garcia Pérez
c/ Antonita Jiménez, 8
ES-28019 Madrid
Spanien
Tel.: (++)34) 91 560 1203
Fax: (++)34) 91 560 1490
email: garcia@garper-teleco.es

Contact to MSF-Vathauer Antriebstechnik

Sales Austria

I+L Elektronik GmbH
Bruno Hörburger
Vibrütteweg 9
A-6840 Götzis
Österreich
Tel: (+43) (0)5523 - 64542
Fax: (+43) (0) 5523 - 64542-4
eMail: b.hoerburger@iul-elektronik.at
Internet: www.iul-elektronik.at

Sales Switzerland

NOVITAS Elektronik AG
Maurizio Bielli
Brunnenbachstraße 2
CH-8340 Hinwil
Switzerland
Tel.: (+41) (0)44 908 3666
Fax.: (+41) (0)44 908 3660
email: info@novitas.ch
Internet: www.novitas.ch

Vertieb Singapore

Netwell Systems Pte Ltd.
Sanjay Nemade
No. 60 Kaki Bukit Place
#07-03 Eunos Techpark
Singapore 415979
Tel: (+65) 65478287
Fax: (+65) 65478286
eMail: contact@netwell-systems.com
www.netwell-systems.com

Sales China

Shanghai Dongdi Mechanical & Electrical Co. Ltd.
Wang Yu Tong
3666 Dongdi Technology Park
Sichen Road, Songjiang District
Shanghai
Tel: (+86) - 21-57796339
Fax: (+86) - 21-57793511
eMail: wyt@iind.com
Internet: www.dongdi.net

Contact to MSF-Vathauer Antriebstechnik

Sales France

DB Energie Distribution
Monsieur Dominique CHOMBART
17 Avenue Marcel Pagnol
59510Hem
France
Tel.: (+33) (0)3 62106233
Fax.: (+33) (0)3 62027985
email: dominique.chombart@numericable.fr
Internet: www.msf-technik.de

Sales Croatia / Slovakia / Bosnia-Herzegovina

Elektro Partner d.o.o.
Darko Kos
Slavonska avenija 24/6
HR-10000 Zagreb
Croatie
Tel.: (+385) (0)1 6184793
Fax.: (+385) (0)1 6184795
email: darko.kos@elektropartner.hr
Internet: www.elektropartner.hr

Sales Turkey

SMART EMK OTOMAS. SIS. DAN. TIC. LTD. STI.
Mustafa Yücel
Halil Rifat Pasa Mah.
Perpa Tic. Merkezi B Blok K:9 No: 1509
Sisli/ Istanbul
Tel.: (+90) 212 220 10 92
Fax: (+90) 212 220 10 93
email: myucel@smart-emk.com
www.smart-emk.com

MSF-Vathauer Antriebstechnik GmbH & Co KG
Am Hessentuch 6-8
32758 Dtmold, Germany
T: +49 (0) 5231 - 63030
F: +49 (0) 5231 - 66856
eMail: info@msf-technik.de
www.msf-technik.de

