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Guardmaster®
Specialists in machinery safety

Ferrotek

magnetically coded safety interlock switch and control unit



Magnetically coded unit, cannot be operated by simple magnets

Unique design, operates on two faces

10 mm switching distance, tolerant to misalignment

Building block technology, easily expanded to 6-, 8- or 10-way systems

features

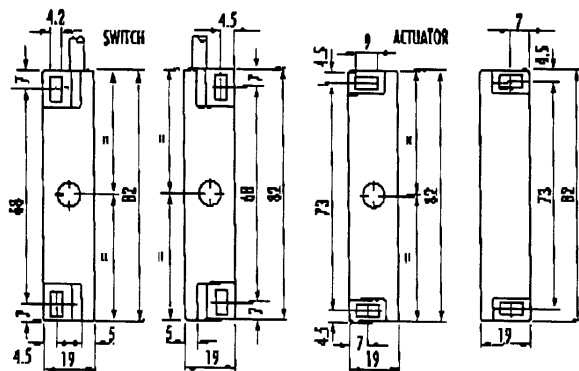
With the increasing speed and complexity of applications a simple magnetic switch may be insufficient to meet the increased risks, therefore Ferrotek's design incorporates several magnetically sensitive elements which must be triggered in a particular sequence to operate the sensor correctly. Thus, anything other than the Ferrotek actuator will not trigger the sensor.

The Ferrotek sensor operates on two faces and, together with the moulded-in brackets and its diminutive size, the Ferrotek is extremely versatile and simple to install.

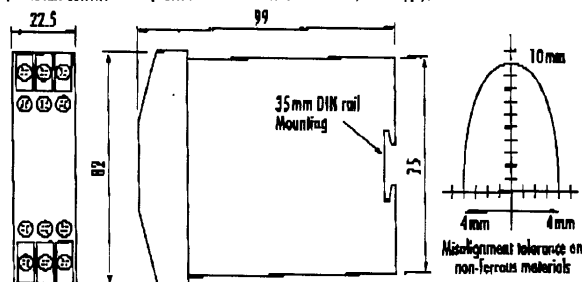
The Ferrotek sensor must be connected to the Ferrotek control unit up to six sensor heads can be used with one control unit. Each control unit features three LEDs, one red, power on and two amber to indicate sensor status.

The Ferrotek control units have also been designed to interconnect with the Minotaur MSR5T safety-relay unit to give up to 3 x N/O and 1 x N/C fail-safe outputs together with contactor monitoring. In this way the Ferrotek can be configured to provide multi-guard interlocking with indication and fail-safe relay output in a compact DIN rail assembly. Standard operating voltage is 24 V AC/DC. For 110/230 V AC requirements an optional power supply unit in a matching housing is available. This is capable of driving up to three control units and the MSR5T safety relay.

dimension drawings



FERROTEK CONTROL UNIT (Note: Identical case houses Ferrotek power supply)



technical specifications

Approvals	UL
Ferrotek control unit	
Power supply	24 V AC/DC ± 16%
Power consumption	< 2 VA
Safety inputs	One or multiple sensors (selectable)
Internal fuse	5 A quick acting on safety output
Relay output	1N/O fused, TUV approved
Utilisation category (AC)	4 A/230 V AC/1000 VA or COSφ=1
Max. switched DC current/voltage	2 A/30 V DC/60 W
Min. switched DC current/voltage	10 mA/10 V
Max. output surge	5 A quick acting
Indication	LED 1 Green = Output closed LED 2 Amber 1 = Guard 1 open LED 3 Amber 2 = Guard 2 open
Max. drop out time	80 ms
Impulse withstand voltage	2600 V
Operating temperature	-10°C to +55°C
Pollution degree	3
Humidity	90% RH at +50°C
Degree of enclosure protection	IP40 DIN 0470
Terminal isolation	IP20 DIN 0470
Max. conductor size	2 x 1 mm ² stranded with sleeve stripped 8 mm, 2 x 1.5 mm ² solid conductor
Terminals	Plus-minus captive terminal screws M3 with self-adjusting connector washers
Weight	147 g
Material and colour	Red polycarbonate
Installation group	C in accordance with VDE 0110
Fixing details	35 mm DIN rail
Miscellaneous	Each unit can monitor up to six heads. If only one head is used, the other channel can be linked out

Sipha 1



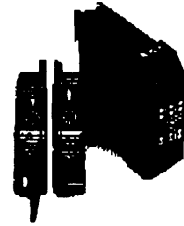
control unit
(for use with Sipha sensors)

Sipha 2



control unit
(for use with Sipha sensors)

Ferrotek



magnetically coded safety
interlock switch & control unit

contacts:			
S = safety			
A = auxiliary			
protection	IP20	IP20	IP67 switch, IP20 Controller
conduit entries	N/A	N/A	Prewired
fixing	35mm DIN Rail	35mm DIN Rail	M4 switch, 35mm DIN Rail
switching capacity	250V AC, 4A 30V DC, 2A	250V AC, 4A 30V DC, 2A	250V AC 4A, 30V DC 2A
conformity to standards	EN1088, EN60204-1, EN594-1 Cat 3	EN1088, EN60204-1, EN594-1 Cat 3	EN1088, EN60204-1
third party approvals			
EMC tested	EMC	EMC	EMC /
comments	Monitors operation of switches, monitors contactors	Monitors operation of switches, monitors contactors	Magnetically coded
approx dimensions	81 x 22 x 99mm	73 x 45 x 120mm	82 x 19 x 19mm (switch)
ordering details	Type Sipha 1 (24V AC/DC) PartNo. 32013	Type Sipha 2 (24V AC/DC, 110/230V AC) PartNo. 32021	Type Controller 24V AC/DC Switch & Actuator Power Supply Remote Indicator Actuator PartNo. 32001 32002 32003 32004 32005

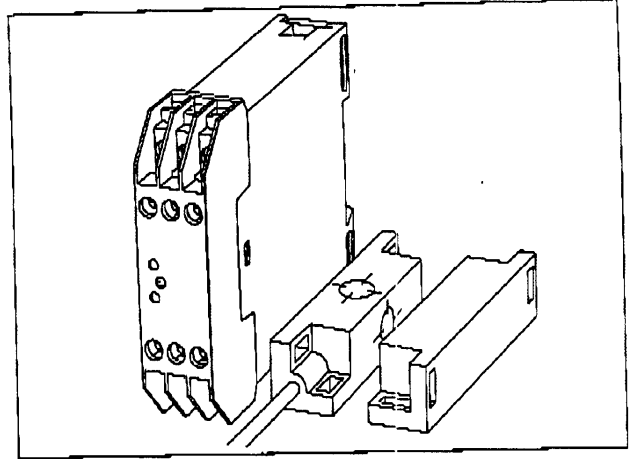
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See enclosed Declaration of Conformity for details.
Siehe Anlage: Konformitätserklärung.
Voir la déclaration de conformité ci-jointe pour détails.

Ferrotek

Coded Magnetic Safety Switch and Control Unit
Codierter Magnet - Sicherheitsschalter und Auswertgerät
Détecteur de sécurité magnétique et boîtier d'autocontrôle



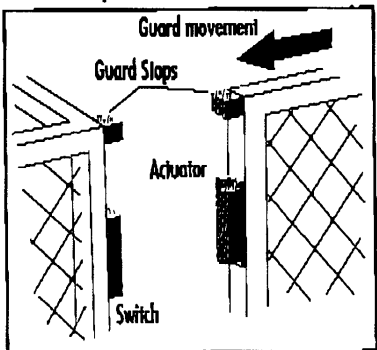
INSTALLATION INSTRUCTIONS / MONTAGEANLEITUNG / NOTICE D'INSTALLATION

1

Note: Switching distance will be reduced if mounted on ferrous metal.
Achtung: Schaltabstand wird bei Montage auf ferromagnetischem Material reduziert.
Note: la distance d'enclenchement sera diminuée si il est monté sur un support ferreux.

NOTE: Using anaerobic thread locking compounds can have a detrimental effect to the plastic switch case if the compounds come into contact with the switch case.
BEACHTEN: Anaerobe Gewindefixierungsmittel können das Kunststoffgehäuse des Schalters angreifen, falls sie mit dem Gehäuse in Kontakt kommen.
NOTE: L'utilisation d'un vernis de blocage sur le peut avoir un résultat désastreux sur le boîtier si ce vernis rentre en contact avec le plastic composant le boîtier.

Misalignment Tolerance (when mounted on non-ferrous materials).
Max. Versatz (bei Montage auf nicht-ferromagnetischem Material)
Tolérance au mauvais alignement (quand il est monté sur un support non ferreux)



Operating configurations

Operation target face to target face
Betriebsposition: Zielscheiben gegenüber
Mise en oeuvre: cibles face à face

2

The head & Actuators must never be used without the correctly configured control unit.
Schalter und Betätiger dürfen niemals ohne das betreffende Auswertgerät benutzt werden

3 DIMENSIONS / DIMENSIONS / ABMESSUNGEN

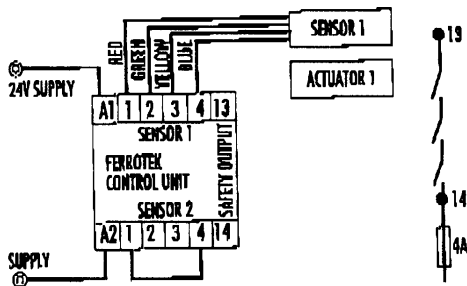
SWITCH
Dimensions: 42, 4.5, 7, 4.5, 19, 5, 41, 68, 82

ACTUATOR
Dimensions: 4.5, 7, 4.5, 19, 5, 41, 73, 82

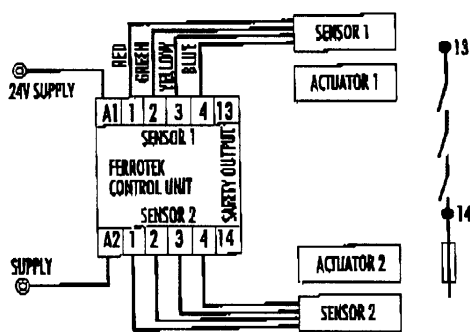
CONTROL UNIT
Dimensions: 22.5, 99, 82, 75, 35mm DIN rail mounting

Wiring Examples / Anschlußbeispiele / Exemples de câblages

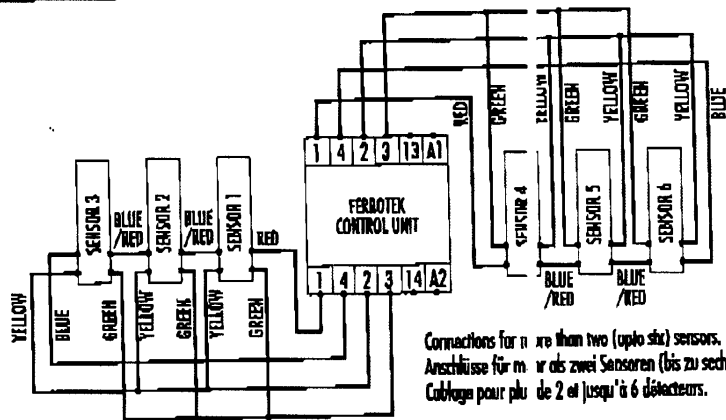
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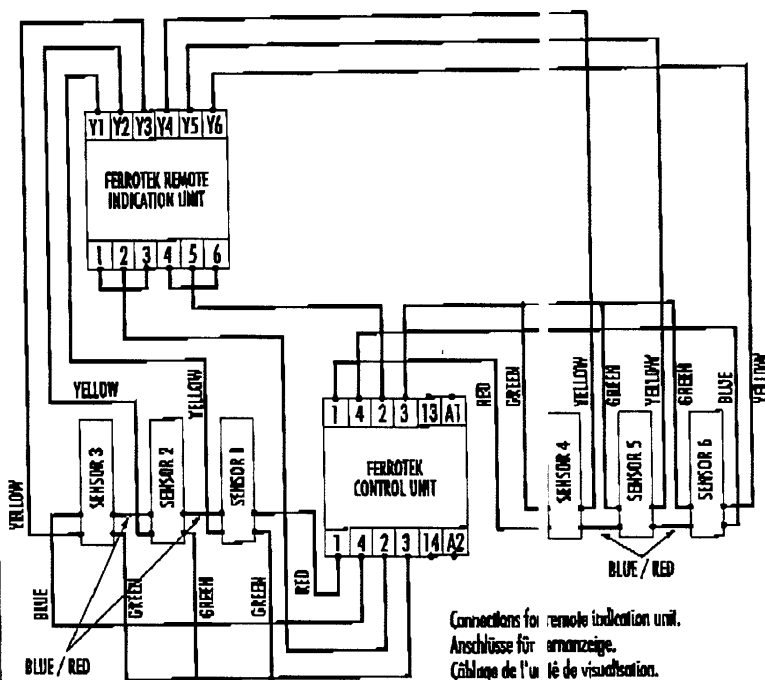
Connections for one sensor.
Anschlüsse für einen Sensor.
Câblage pour un détecteur.



Connections for two sensor.
Anschlüsse für zwei Sensoren.
Câblage pour deux détecteurs.



Connections for more than two (up to six) sensors.
Anschlüsse für mehr als zwei Sensoren (bis zu sechs).
Câblage pour plus de 2 et jusqu'à 6 détecteurs.



Connections for remote indication unit.
Anschlüsse für Fernanzeige.
Câblage de l'unité de visualisation.

Technical Specifications

Technische Daten

Specifications Techniques

Switch & Actuator Part No:32002
 Operating Position: Targel to Targel
 Ambient temperature: -10°C to +55°C
 Degree of protection: IP 67
 Switch material: Moulded ABS
 Contact arrangement: 1N/O, 1N/C
 Make: 9mm
 Break: 12mm
 Mechanical life: 1x 10⁶
 Colour: Red
 Fixing: M4 fasteners

Control Unit Part No:32001
 Supply: 24V AC/DC ±15%
 Power Consumption: <2VA
 Indication: Yellow LED1 = Guard 1 Open
 Yellow LED2 = Guard 2 Open
 Green LED = Output Relays Closed
 Safety Inputs: 1 or 2 sensors - Input selectable
 Protection Category: Housing: IP 40
 Terminals: IP 20
 Relay outputs: 1 Normally Open, 5A Q/B Fuse
 Max Switching: 4A at 250V AC, 2A at 30V DC
 Drop out time: 80ms
 Mounting: 35mm DIN rail

For 110/230VAC use Power Supply Unit part no: 32003

Schalter und Betätiger Bestell-Nr.:32002
 Farbe: Rot
 Schutzart: IP 67
 Befestigung: M4-Schrauben
 Betriebsposition: Zielscheiben gegenüber
 Schaltabstand AN: 9mm
 Schaltabstand AB: 12mm
 Kontakte: 1 O und 1 S
 Betriebstemperatur: -10°C bis +55°C
 Mech. Lebensdauer: 10⁶ Schaltspiele

Auswertgerät Bestell-Nr.:32001
 Montage: Schnellbefestigung auf DIN-Normschiene
 Schutzart: Gehäuse IP 40, Klemmen IP 20
 Betriebsspannung: 24V AC/DC ±15%
 Leistungsverbrauch: <2VA
 Anzeigen: Gelbe LED 1 = Schutzür 1 offen
 Gelbe LED 2 = Schutzür 2 offen
 Grüne LED = Ausgangsrelais geschlossen
 Eingänge: 1 oder 2 Sensoren
 Freigabe-Ausgang: 1 Schließer, Sicherung 5A flink
 Schaltleistung: 4A/250 VAC, 2A/30 VDC
 Abfallzeit: 80ms

Für 110/230 VAC Netzteil Bestell-Nr.: 32003 verwenden

Détecteur de sécurité + aimant codé
 Position de fonctionnement: Targel face à face
 Température ambiante: -10°C à +55°C
 Indice de protection: IP67
 Matière détecteur: Moulé ABS
 Contacts du détecteur: 1N/O, 1N/C
 Enclenchement des contacts: 9mm
 Déclenchement des contacts: 12mm
 Durée de vie: 1x 10⁶
 Couleur: Rouge
 Fixations: fermature M4

Boîtier d'autocontrôle
 Alimentation: 24V AC/DC ±15%
 Consommation: <2VA
 Signalisation lumineuse:

Ref:32001
 24V AC/DC ±15%
 <2VA
 LED1 JAUNE= Porte 1 ouverte
 LED2 JAUNE= Porte 2 ouverte
 LED VERTE= Sorties relais fermées
 1 ou 2 détecteurs - configurable
 Boîtier: IP40
 Connexions: IP20
 1 normalement ouvert, 5A
 protection fusible
 4A sous 250V AC, 2A sous 30V DC
 80ms
 Montage: 35mm rail DIN

Pour utilisation du FERROTEK en 110/230VAC, il est nécessaire d'utiliser le module d'alimentation Ref: 32003

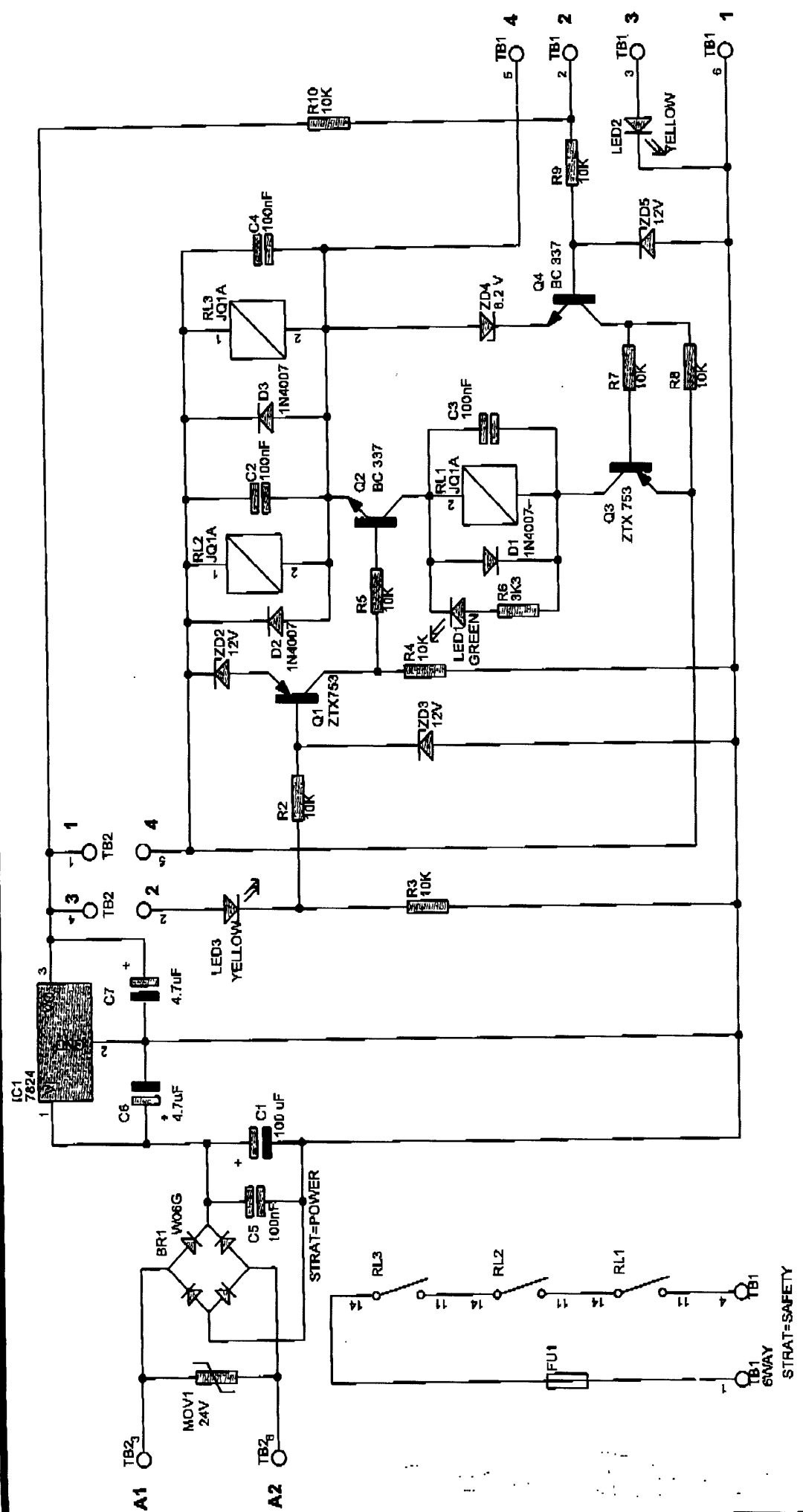
NOTE: The warranty is invalidated if the security seals of the control unit are broken.
 BEACHTEN: Die Garantie erlischt, wenn die Siegel am Auswertgerät aufgebrochen wurden!
 NOTE: La garantie ne sera pas valable si le scellé de sécurité est rompu.

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DRAWING No. 32598



ISS	CHANGE NOTE	DESCRIPTION	APPD	DATE	LOCATION	TITLE	DRAWN BY
					C:\DATA\ISIS\TEK_CONF\TEK-D1.IWS	FERROTECH SCHEMATIC	M BAGLEY
							CHECKED BY
							APPROVED BY
							DATE
							30 January 1997
							A4
							DRAWING No. 32598

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