LINEAR MOTOR FOR SWINGING BELL

MOT30

MOTEUR LINÉAIRE DE VOLÉE POUR SONNERIE DE CLOCHE INSTRUCTIONS DE SÉCURITÉ ET MANUEL DE L'UTILISATEUR

SWINGING BELL LINEAR MOTOR SAFETY INSTRUCTIONS AND USER MANUAL

MOTORE LINEARE PER MOVIMENTO CAMPANE ISTRUZIONI DI SICUREZZA MANUALE D'USO

SIMBOLOGIA UTILIZZATA NEL MANUALE E SULL'APPARECCHIATURA/
THE FOLLOWING SYMBOLS ARE USED IN THE MANUAL AND ON THE PRODUCT

ATTENZIONE! Pericolo di scossa elettrica
DANGER! Electrical Shock Hazard

ATTENZIONE! Possibile situazione pericolosa per il prodotto e l'ambiente
CAUTION! Possible dangerous situation for the product and the environment

Corrente alternata
Alternating current

Smaltimento Apparecchiature Elettriche ed Elettroniche
Waste of electrical and electronic equipment

NOTA! Suggerimenti per l'utenza
NOTE! Tips for the user

SERVIZIO ASSISTENZA TECNICA
TECHNICAL ASSISTANCE SERVICE

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+390174 551428, email: assistenza@ecat.it

USO PREVISTO

Motore lineare con sensore magnetico utilizzato per la movimentazione delle campane. Il kit di installazione comprende: l'induttore, l'indotto, il controllo di potenza e il sensore di movimento.

AVVERTENZA

Il dispositivo è rispondente alla normativa di sicurezza CEI EN61010-1:2013-10. L'utilizzatore deve adempiere a tutti i requisiti di sicurezza contro eventuali rischi connessi alle apparecchiature utilizzate. Il costruttore declina ogni responsabilità relativa a danni, a persone o cose, in seguito a un uso improprio dell'apparecchiatura non dichiarato nel presente manuale e nelle istruzioni d'uso. L'utilizzatore deve assicurarsi che l'installazione dell'apparecchiatura sia rispondente ai requisiti di sicurezza che la rendono adatta all'uso per cui è prevista. Ecat offre supporto telefonico durante la fase di installazione dell'apparecchiatura. Ecat si riserva il diritto di apportare modifiche all'apparecchiatura e al relativo manuale senza preavviso.

ATTENZIONE! CONSULTARE LA DOCUMENTAZIONE ALLEGATA, OGNI VOLTA CHE VIENE RIPORTATO SULL'APPARECCHIATURA QUESTO SIMBOLO

SCOPO DEL MANUALE

Il presente manuale è redatto per consentire all'operatore preposto di comprendere il funzionamento dell'apparecchiatura e utilizzarla conformemente alle norme di sicurezza. La documentazione contiene tutte le informazioni per l'installazione, l'uso e la manutenzione dell'apparecchiatura. Si ricorda di prendere visione del presente manuale al fine di poter operare secondo i requisiti di sicurezza. Il manuale è parte integrante dell'apparecchiatura e va pertanto conservato fino a fine vita operativa della stessa; è consigliabile farne una copia da mantenere in archivio per eventuali deterioramenti dell'originale. Il costruttore è disponibile a fornire le istruzioni per il reperimento di una copia nel caso l'originale sia danneggiato.
Il documento è redatto in italiano e costituisce il riferimento interpretativo per ogni possibile controversia nelle edizioni in altre lingue. Deve essere conservato nei pressi dell'apparecchiatura o in un luogo ben stabilito per una più facile e veloce consultazione; in luogo asciutto e non esposto ad agenti atmosferici per evitare deterioramento e difficoltà di consultazione. In caso di necessità di più copie o per eventuali aggiornamenti vedi par. ***Servizio assistenza tecnica***. Il manuale rimane parte integrante dell'apparecchiatura anche in seguito a eventuali aggiornamenti normativi. Il costruttore valuterà la necessità di integrare lo stesso con ulteriore documentazione che sarà parte integrante del manuale.

GARANZIA DEL COSTRUTTORE

Il costruttore è disponibile a fornire informazioni all'operatore allo scopo di utilizzare l'apparecchiatura nella massima sicurezza. L'apparecchio è garantito per un periodo di 12 mesi dalla data di uscita dal magazzino Ecat. Attenzione: la validità della garanzia è legata al numero di serie (Serial No) indicato sull'etichetta adesiva applicata sull'apparecchiatura o sull'imballo della stessa (vedi esempio etichetta a pag. 4). La garanzia decade nel caso in cui l'operatore non segua le direttive in materia di sicurezza e/o vengano manomesse parti dell'apparecchiatura da personale non specializzato e autorizzato dal costruttore. Inoltre la garanzia decade immediatamente in caso di manomissione, copertura o rimozione dell'etichetta apposta a scopo di identificazione sui prodotti.

INFORMAZIONI PER L'INSTALLAZIONE

ALIMENTAZIONE

Vedi par. ***Electrical Rating*** delle presenti istruzioni o la marcatura sul prodotto (vedi esempio di marcatura nell'ultima pagina).

AMBIENTE OPERATIVO

Vedi par. ***Temperature Rating*** delle presenti istruzioni. L'apparecchiatura non deve essere sottoposta agli agenti atmosferici, a fumi, vapori e polveri. Non installare l'apparecchiatura in ambienti con rischio di incendio o esplosione.

SMALTIMENTO

Questo simbolo sul prodotto o sulla relativa confezione indica che il prodotto non deve essere smaltito come un rifiuto domestico. Deve essere invece consegnato all'apposito centro di raccolta per il riciclo di apparecchiature elettriche ed elettroniche. Il corretto smaltimento del prodotto evita potenziali conseguenze nocive sull'ambiente e sulla salute.
Il riciclo dei materiali consente di preservare le risorse naturali. Per informazioni dettagliate sul riciclo di questo prodotto,contattare nella propria zona l'ufficio comunale preposto o il servizio di smaltimento dei rifiuti domestici.

AVVERTENZE DURANTE L'INSTALLAZIONE
Al ricevimento dell'apparecchiatura verificare che l'imballo sia integro, non presenti segni d'urto o rotture, segni che possano far pensare al contatto con umidità o calore e/o segni di manomissione. Aprire l'imballo e verificare che l'apparecchiatura e i documenti allegati siano integri. Verificare che la documentazione non presenti difformità con i documenti di trasporto. In caso di difformità, comunicare tempestivamente al fornitore l'anomalia e attendere istruzioni prima di proseguire con l'installazione. I materiali impiegati per l'imballo sono assimilabili ai normali rifiuti solidi urbani; si consiglia, se possibile, di differenziare i materiali in accordo con le disposizioni in materia nel luogo di installazione.

INSTALLAZIONE
Prima dell'installazione dell'apparecchiatura sganciare l'interruttore magnetotermico generale dell'impianto elettrico e bloccarlo in posizione di aperto, in modo da evitare erronee accensioni dell'impianto durante la fase di installazione. Prima dell'installazione dell'apparecchiatura, verificare e predisporre l'impianto elettrico in modo che sia conforme alle attuali norme vigenti in materia. È responsabilità dell'utilizzatore predisporre linee, cablaggi, quadri elettrici e messa a terra ove richiesto; attenzione a non posare cavi in zone di passaggio che potrebbero intralciare la normale circolazione creando pericoli. Per parametri alimentazione par. ***Electrical Rating*** o marcatura sul prodotto (vedi es. di marcatura nell'ultima pagina). Assicurarsi di inserire nell'impianto un interruttore automatico esterno per protezione contro eventuali sovracorrenti. Porre l'interruttore nelle vicinanze dell'apparecchiatura in luogo facilmente accessibile senza ostacoli che potrebbero rallentarne l'attivazione da parte dell'utilizzatore. La responsabilità della sicurezza di qualsiasi sistema di diffusione oraria e/o di gestione del campanile, che incorpora l'apparecchiatura, ricade sull'assemblatore del sistema stesso. Verificare che il fissaggio dell'apparecchiatura sia effettuato correttamente e in maniera stabile come indicato nelle istruzioni e nell'allegato.

ATTENZIONE! OGNI OPERAZIONE SU MORSETTI, CABLAGGI E CONNESSIONI MECCANICHE VA ESEGUITA CON TENSIONE DI RETE DISCONNESSA!

Assicurarsi che l'interruttore sezionatore sia in posizione **OFF**, bloccato da apposito lucchetto di sicurezza rimuovendone la chiave. Predisporre tutti i collegamenti aggiuntivi dei morsetti dell'apparecchiatura all'impianto (RS485, antenna sincronizzazione ecc.). Per la connessione di morsetti e cablaggi vedi le presenti istruzioni e l'etichettatura sul prodotto. Predisporre la messa a terra di protezione collegandola all'apposito morsetto di terra di protezione. Verificare che, fornendo alimentazione, l'apparecchiatura esegua le operazioni previste e specificate nel manuale di istruzioni.

MANUTENZIONE
SOSTITUZIONE DEL FUSIBILE DI PROTEZIONE (se presente)
In caso di non accensione dell'apparecchiatura in presenza di alimentazione di rete, è possibile che sia intervenuto il fusibile di protezione sulla tensione di alimentazione, posto all'interno dell'apparecchiatura. Per verificare il fusibile è necessario sganciare l'interruttore magnetotermico generale dell'impianto elettrico e bloccarlo con il lucchetto in posizione di aperto, rimuovendo la chiave per evitare erronee accensioni dell'impianto. Rimuovere il fusibile danneggiato dal portafusibili e verificare con un tester in modalità **Ω** che sia effettivamente danneggiato. Se il fusibile risulta non danneggiato reinserirlo nel suo alloggiamento e contattare l'assistenza ECAT per procedere alla verifica dell'apparecchiatura presso il costruttore. Se il fusibile non è più nella normale condizione conduttiva sostituirlo con un fusibile rapido in 250V 315mA (riferimento OMEGA CF520131) oppure 250V 500 mA se l'apparecchiatura è alimentata con tensione 115 VAC 60Hz. Richiudere con cura l'apparecchiatura in tutte le sue parti. Azionare l'interruttore magnetotermico generale dell'impianto. Verificare che, fornendo alimentazione, l'apparecchiatura esegua le operazioni previste e specificate nel manuale di istruzioni. Nel caso in cui ciò non sia verificato, è necessario che ECAT revisioni l'apparecchiatura. Contattare l'assistenza per le operazioni di riparazione.

INTENDED USE
Linear motor with magnetic sensor for the swinging bells. The kit includes: the inductor, the rotor, the control unit and the sensor.

WARNING
The device is responsive to safety regulation CEI EN61010-1:2013-10. The user must fulfill all safety conditions against any possible risks linked to the used devices. The manufacturer refuses all responsibility for damages to persons or property, following a wrong use not declared in this manual. The user must ensure that the installation complies with the safety requirements that make it suitable for its intended use. Ecat offers phone support during the installation of the device. Ecat reserves the right to modify the device and its manual without notice.

WARNING! CONSULT THE ATTACHED DOCUMENTATION EVERY TIME THE SYMBOL SHOWN HERE APPEARS ON LABEL ON THE DEVICE

PURPOSE OF THE MANUAL
This manual was written to help the operator in charge to understand the functioning of the device and to use it according to the current standards regulations. The documentation contains all the information for the installation, the use and the maintenance of the device. Remember to examine the present manual in order to be able to operate according to the safety requirements. The manual is an integral part of the device, so it must be kept until the end of its service life; make a copy to keep in the archive in case of any deterioration of the original one. The manufacturer is willing to provide the instructions for the finding of a copy if the original is damaged. The document was written in Italian and it is the interpretative reference in case of dispute in the editions in other languages. It must be kept near the device or in an established place for easy and quick consultation; in a dry place and it must not be exposed to the weather to avoid deterioration and difficulty of consultation. If one or more copies are required or for any updates see ***Service of technical assistance***. The manual is part of the device even after any regulatory updates. The manufacturer will decide if it's necessary to complete that with additional documentation that will be part of the manual.

MANUFACTURER'S WARRANTY
The device is guaranteed for a period of 12 months from the date of exit from the Ecat warehouse. Attention: the validity of the guarantee is linked to the serial number (Serial No) indicated on the adhesive label applied on the product or on its packaging (see example on page 4). The warranty is void if the operator does not follow the safety directives and/or parts of the product are tampered with by non-specialized personnel authorized by the manufacturer. In addition, the warranty becomes void immediately in the event of tampering, cover or removal of the label affixed for identification purposes on the products.

INSTALLATION INFORMATION

POWER SUPPLY
See par. ***Electrical Rating*** or the label on the product (see example of label on the last page).

HOUSING
See par. ***Temperature Rating***. The device must not be exposed to weather, fumes, vapours and dust. Do not install the device in environments with risk of fire or explosion.

DISPOSAL

This symbol on the product or its packaging indicates that the product should not be disposed of with a household waste. It should instead be delivered to the collection center for the recycling of electrical and electronic equipment. Proper disposal of the product avoids potential harmful effects on the environment and health. Recycling materials helps to preserve natural resources. For detailed information on the recycling of this product, contact your local communal office or your household waste disposal service.

WARNINGS DURING INSTALLATION
When you receive the device, check that packaging is not damaged, without signs of damage or breakage or signs that might suggest the contact with

moisture or heat and/or signs of tampering. Open the packaging and check that the device and attached documents are complete. Make sure that the documentation does not present differences with the transport documents. In case of discrepancy, promptly notify the supplier about anomaly and wait for instructions before continuing with the installation. The materials used for packaging are normal solid urban waste; if possible sort the materials in accordance with the environmental regulations.

INSTALLATION
Before the installation of the device, unhook the thermal-magnetic circuit breaker of the electrical system and secure it with the lock in open position, remove the key to avoid wrong switching in the system during the installation phase.
Before the installation of the device, check and prepare the electrical system in accordance with current standards in force. It is the user's responsibility to prepare lines, wiring, electrical panels and grounding if requested; leave cables away from passageways, because they could interfere with normal circulation, creating dangers. For power supply's parameters see par. ***Electrical rating*** or the label on the product (see example of label on the last page). Be sure to insert an external circuit breaker in the system for protection against any surge currents. Place the switch close to the device in a readily and accessible place without obstacles that could slow down the start up by the user. The responsibility for the security of any time distribution system or bell tower management system, which incorporates the device, falls on assembler himself. Check that fastening of the device is done properly and in a stable manner as shown in the instructions and in the attachment.

WARNING! MAINS VOLTAGE MUST BE SWITCHED OFF BEFORE TOUCHING ANY CLAMPS, WIRING OR MECHANICAL CONNECTIONS!

Make sure the isolator switch is in the OFF position and safety-locked by removing the key. Make all the additional system clamp connections (RS485, synchronisation antenna etc.). See these instructions on how to connect wiring and clamps. Predispose the protective earthing by connecting it to the earth clamp. Check that, when live, the device performs the necessary operations specified in the instruction manual.

MAINTENANCE
REPLACING THE FUSE (if it is there)
If the device does not come on when power is switched on, the power-supply fuse inside the device may have been triggered. To check the fuse, Disengage the electrical circuit breaker and block with the lock in the open position, removing the key to avoid switching the system on by mistake. Remove the damaged fuse from the fuse holder and check with a tester in mode **Ω** whether it is damaged. If the fuse is not damaged, place it back in its holder and contact ECAT Assistance to have the device checked by the manufacturer. If the fuse is no longer conductive, replace it with a 250V 315mA fast-acting fuse (ref. OMEGA CF520131) or a 250V 500 mA one if the device runs on 115 VAC 60Hz. Carefully close all parts of the device. Engage the system circuit breaker. Check that, with the power on, the device performs the operations specified in the instruction manual. If it does not, ECAT must service it. Contact Assistance for repairs.

USAGE PRÉVUE
Moteur linéaire de volée pour sonnerie de cloche. Le kit comprend: l'inducteur, le rotor, l'unité de contrôle et le capteur d'oscillations.

AVERTISSEMENT
Le dispositif est entièrement conforme à la norme de sécurité CEI EN 61010-1:2013-10. L'utilisateur doit se conformer à toutes les exigences de sécurité contre les éventuels risques associés aux appareils utilisés. Le fabricant décline toute responsabilité pour les dommages corporels ou matériels, en cas de mauvaise utilisation ou d'utilisation non indiquée dans ce manuel ou dans le mode d'emploi. L'utilisateur doit s'assurer que l'installation de l'appareil répond aux exigences de sécurité qui le rendent approprié à l'usage pour lequel il est prévu. Ecat offre une assistance téléphonique pendant l'installation de l'appareil. Ecat se réserve le droit d'apporter des modifications à l'appareil et au manuel afférent sans préavis.

ATTENTION! CONSULTER LA DOCUMENTATION EN ANNEXE, À CHAQUE FOIS QU'IL Y A CE SYMBOLE SUR L'APPAREIL LE BUT DU MANUEL

Ce manuel est rédigé afin d'aider l'opérateur à comprendre le fonctionnement de l'appareil et à l'utiliser selon les normes de sécurité. La documentation contient toutes les informations pour l'installation, l'utilisation et l'entretien de l'appareil. Nous vous rappelons que vous devez lire ce manuel afin de pouvoir opérer selon les normes de la sécurité. Le manuel fait partie intégrante de l'appareil, il doit donc être conservé jusqu'à la fin de sa durée de vie; nous vous conseillons d'en faire une copie et de la conserver dans un dossier dans l'éventualité où l'original serait détérioré. Le cas échéant, le fabricant est disponible à fournir les instructions pour en récupérer une copie.
Le document a été rédigé en italien et il constitue la référence d'interprétation pour n'importe quel litige dans les éditions dans d'autres langues. Il doit être conservé près de l'appareil ou dans un endroit permettant de le consulter le plus facilement et le plus rapidement, dans un lieu sec et là où il n'est pas exposé à des agents atmosphériques pour éviter qu'il soit détérioré et difficile à consulter. Si vous avez besoin de plusieurs copies ou pour toutes les mises à jour adressez-vous au ***Service après-vente (Technical Assistance Service)***.
Le manuel fait partie intégrante de l'appareil, même après d'éventuelles mises à jour réglementaires. Le fabricant évaluera la nécessité de compléter le manuel avec une documentation supplémentaire qui fera partie intégrante du manuel.

GARANTIE DU FABRICANT
L'appareil est garanti pour 12 mois à compter de la date de sortie de l'entrepôt d'Ecat. Attention: la validité de la garantie dépend du numéro de série (numéro de série) indiqué sur l'étiquette adhésive apposée sur le produit ou sur son emballage (voir exemple en page 4). La garantie est annulée si l'opérateur ne respecte pas les consignes de sécurité et/ou si des parties du produit sont altérées par du personnel non spécialisé autorisé par le fabricant. En outre, la garantie devient nulle immédiatement en cas de manipulation, de couverture ou de retrait de l'étiquette apposée à des fins d'identification sur les produits.

INFORMATIONS SUR L'INSTALLATION

ALIMENTATION
Cf. par. ***Electrical Rating*** de ce manuel pour l'utilisateur ou le marquage sur le produit (voir l'exemple de marquage sur la dernière page)ou l'étiquette sur le produit (voir l'exemple sur la dernière page).

L'ENVIRONNEMENT D'EXPLOITATION
Cf. par. ***Temperature Rating*** de ce manuel pour l'utilisateur. L'appareil ne doit pas être soumis aux agents atmosphériques, ni aux fumées, vapeurs et poussière. Ne pas installer l'appareil dans des environnements à risque d'incendie ou d'explosion.

ÉLIMINATION DES DÉCHETS
Ce symbole sur le produit ou son emballage indique que ce produit ne doit pas être mis au rebut comme un déchet domestique. Il doit être remis au point de collecte spécial pour le recyclage des équipements électriques et électroniques. L'élimination correcte du produit évite les conséquences négatives potentielles sur l'environnement et la santé.
Le recyclage des matériaux permet de préserver les ressources naturelles. Pour plus d'informations sur le recyclage de ce produit, veuillez contacter votre bureau municipal local ou le service d'élimination des déchets ménagers.

AVERTISSEMENT PENDANT L'INSTALLATION
Quand vous recevez l'appareil, vérifier que l'emballage est intact, sans signes de dommage ou de rupture, signes qui peuvent induire à penser à un contact avec de l'humidité ou de la chaleur, et/ou de signes d'altération. Ouvrir l'emballage et vérifier que l'appareil et les documents annexés ne présentent pas de différences avec les documents de transport. En cas de différences, signaler sans délai le problème au fournisseur et attendre des

instructions avant de poursuivre l'installation. Les matériaux utilisés pour l'emballage sont considérés comme des déchets solides urbains; nous vous conseillons, si possible, de faire le tri sélectif des matériaux suivant les dispositions en vigueur sur le lieu d'installation.

INSTALLATION

Avant l'installation de l'appareil, couper le courant avec le disjoncteur magnétothermique général du circuit électrique et le bloquer en position ouverte, afin d'éviter que le circuit puisse être allumé par erreur pendant l'installation. Avant l'installation des appareils, vérifier et préparer le système électrique de façon à ce qu'il soit conforme aux normes actuellement en vigueur en la matière. L'utilisateur assume la responsabilité de préparer les lignes, les câblages, les tableaux électriques et la mise à la terre si nécessaire; attention à ne pas poser de câbles dans des zones de passage parce qu'ils pourraient entraver la circulation, et créer des dangers.
Pour des informations sur l'alimentation voir par. ***Electrical Rating*** ou l'étiquette sur le produit (cf. exemple de marquage sur la dernière page).
S'assurer qu'un interrupteur automatique externe a été installé sur le circuit pour la protection contre d'éventuelles surtensions. Placer l'interrupteur près de l'appareil dans un endroit facilement accessible sans obstacles qui pourraient en ralentir l'activation de la part de l'utilisateur. C'est l'assembleur du système qui assume la responsabilité de la sécurité de tout système de distribution horaire et/ou de la gestion du clocher, où l'appareil est inséré. Vérifier que le dispositif est fixé correctement et de manière stable comme c'est spécifié dans les instructions et dans les annexes.

ATTENTION! CHAQUE OPÉRATION SUR BORNES, CÂBLAGES ET RACCORDEMENTS MÉCANIQUES NE DOIT ÊTRE EFFECTUÉE QU'APRÈS AVOIR COUPÉ LA TENSION DU RÉSEAU!

Vérifiez que l'interrupteur sectionneur soit en position OFF, verrouillé par un cadenas de sécurité en enlevant la clé. Préparer toutes les connexions supplémentaires des bornes de l'équipement à l'installation (RS485, antenne synchronisation etc.). Pour la connexion des bornes et des câblages se reporter à ces instructions. Préparer la mise à la terre en raccordant la borne de terre spéciale de protection. Vérifier que, lorsque l'on branche l'appareil, il exécute les opérations prévues et spécifiées dans le manuel de l'utilisateur.

ENTRETIEN

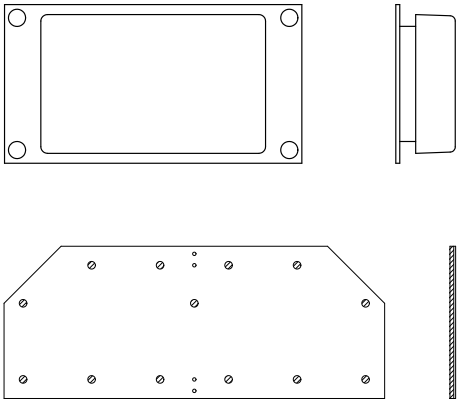
REMPLACEMENT DU FUSIBLE DE PROTECTION (si présent)

Si l'appareil ne s'allume pas quand on le branche au réseau, il est possible qu'un fusible de protection sur la tension de l'alimentation, qui se trouve dans l'appareil, soit intervenu. Pour vérifier le fusible, il faut couper le courant avec l'interrupteur magnétothermique général de l'installation électrique et le bloquer avec le verrou en position ouverte, en retirant la clé pour éviter que l'installation puisse être allumée par erreur. Retirer le fusible endommagé du porte-fusibles et vérifier avec un testeur en modalité **Ω** qu'il est effectivement grillé. Si le fusible n'est pas grillé le remettre à sa place et contacter l'assistance ECAT pour procéder au contrôle de l'appareil chez le constructeur. Si le fusible n'est plus en condition normale de conduction le remplacer par un fusible rapide en 250V 315mA (référence OMEGA CF520131) ou 250V 500 mA si l'appareil est alimenté avec une tension à 115 VAC 60Hz. Refermer soigneusement toutes les parties de l'appareil. Actionner l'interrupteur magnétothermique général de l'installation. Vérifier, qu'une fois rebranché, l'appareil exécute toutes les opérations prévues et spécifiées dans le manuel de l'utilisateur. Si cela ne se produit pas, il faut faire contrôler l'appareil par ECAT. Contacter le service après-vente pour les opérations de réparation.

PRODUCTS LABEL

MOT30

In order to be programmed, the linear motor requires a PROGRAMMING TERMINAL (MOT9004035).



Technical specifications:

Electrical Rating:
380 VAC/220VAC – MOT3004001-002-003-004-005-006-007-008

380 VAC – MOT3004009-10-11-12

Temperature Rating: - 20 + 70 °C / - 4 + 158 °F

KIT CODE	KIT COMPONENTS	BELL
MOT3004002	MOT9004020 MOT9004040 MOT9004031	UP TO 30 KG
MOT3004001	MOT9004020 MOT9004040 MOT9004032	UP TO 60 KG
MOT3004004	MOT9004020 MOT9004040 MOT9004031	UP TO 70 KG
MOT3004003	MOT9004021 MOT9004041 MOT9004032	UP TO 100 KG
MOT3004006	MOT9004022 MOT9004041 MOT9004031	UP TO 100 KG

MOT3004005	MOT9004022 MOT9004042 MOT9004032	UP TO 250 KG
MOT3004007	MOT9004023 MOT9004042 MOT9004032	UP TO 400 KG
MOT3004008	MOT9004023 MOT9004042 MOT9004031	UP TO 400 KG
MOT3004009	MOT9004024 MOT9004043 MOT9004032	UP TO 700 KG
MOT3004010	MOT9004025 MOT9004044 MOT9004033	UP TO 1000 KG
MOT3004011	MOT9004026 MOT9004045 MOT9004033	UP TO 1300 KG
MOT3004012	MOT9004027 MOT9004046 MOT9004034	UP TO 2500 KG

LED SIGNALS		
230V	GREEN	UNBLINKING LED, PRESENCE OF 230V POWER SUPPLY FOR VEGA
ERROR	RED	BLINKING LED (SEE PAR. 7 *ERRORS*)
RUN	ORANGE	UNBLINKING LED SYSTEM ACTIVATED
START	BLUE	FLASHING LED EVERY TIME THE SENSOR IS ACTIVATED
BRAKE	ORANGE	BRAKE ACTIVATED
RS485	RED	ON: RS485 COMMUNICATION ACTIVE

WIRING			
ID	**NAME**	**GROUP**	**DESCRIPTION**
1	+ 12V	DC	12V OUTPUT
2	GND	DC	
3	VA	IB SENSOR	BS2 SENSOR INPUT
4	VB	IB SENSOR	
5	A+	RS485	COMMUNICATION PORT RS485
6	B-	RS485	
7	GND	COMMAND	FOR ACTIVATING BELL
8	IN1	COMMAND	FOR SYSTEM A1
9	IN2	COMMAND	FOR SYSTEM A2 (IF ENABLED)
10	L	AC 230V	INPUT OF 230V LINE TO SUPPLY POWER TO THE CONTROL UNIT
11	N	AC 230V	
12	STB1	THERMAL PROTECTION	CONNECT COMMAND (PIN 10) IF ADDITIONAL PROTECTION PRESENT
13	STB2	THERMAL PROTECTION	THERMAL PROTECTION INPUT
14	TMT	THERMAL PROTECTION	
15	IN3	COMMAND	FOR SYSTEM A3 (IF ENABLED). AC 230V
16	M1	MOTOR	CONNECTION TO LINEAR MOTOR
16*	STR1	STRIKER	OPTIONAL STRIKER COMMAND
17	M2	MOTOR	CONNECTION TO LINEAR MOTOR
17*	STR2	STRIKER	OPTIONAL STRIKER COMMAND
18	L1	MOTOR STANDBY	CONNECT WITH CONTACT IF ADDITIONAL PROTECTION PRESENT
18**	LSTR		OPTIONAL STRIKER COMMAND
19*	L1	AC THREE-PHASE MOTOR 230/400V	CONNECTION OF POWER FOR THE LINEAR MOTOR
20*	L2		
21*	L3		
22*	PE	EARTH	OPTIONAL EARTH CONNECTION
23*	M1	MOTOR	CONNECTION TO LINEAR MOTOR
24*	M2	MOTOR	
25*	M3	MOTOR	

*TERMINALS NOT AVAILABLE FOR MOT9004031 (VEGA-M)
** SPECIAL FUNCTION AVAILABLE ONLY ON ORDER

INSTALLATION

All versions of the VEGA controller (MOT9004031-32-33-34) have been designed to control the function of a swinging bell, including when this starts and stops. The VEGA control unit can only be used in combination with the BS2 sensor. The unit cannot communicate with any other type of sensor.

List of abbreviations used in the manual:

LM: the linear motor (all variants – see table of codes) which induces movement.

KLM: the linear motor coil (see table of codes).

BS2 A/B: the sensor for detecting movement of the bell.

VEGA: the control unit which manages the linear motor and the movement of the bell.

↕: programming console.

1. INSTALLATION OF THE LM

Choose an appropriate location on the bell frame for the LM to be installed. This must be sufficiently stable, with a solid base that prevents resonance effects and vibrations of the bell components.

As a general rule, the LM should be installed at around 2/3 of the full height of the bell.

Close attention must be paid to ensuring that the LM and the KLM are securely and solidly installed on the bell axis - a good installation position enables optimal transfer of the force necessary in order to make the bell swing.

1.1. Measuring the space required for the LM
Having selected a suitable location for the LM to be installed, the midpoint of the bell axis must be measured, in order to prevent any issues caused by asymmetric bell movements and to ensure that the same distance is maintained between the LM and KLM when the bell is swinging.

1.2. Installing the lower part of the LM panel
Install the lower part of the LM panel (which is supplied with screws) in line with the point identified on the bell frame. The lower part of the LM panel must also be perfectly aligned horizontally (see drawing 1).

1.3. Installing the upper LM panel
Adjust the panel to half the length of the threaded screws (i.e. not screwing it in fully, in order to enable the distance between the LM and the KLM to be adjusted subsequently). Decide on the position of the KLM: manually swing the bell to ensure that adequate space has been left (around 5-8 mm between the LM and KLM), and adjust the screws on the lower part of the LM. Carefully check that the distance between the LM and the KLM remains constant while the bell is moving, as this greatly affects the quality of the swing (see drawing 2).

2. INSTALLING THE KLM

Until now, temporary fixation has been used; we can now proceed with the permanent installation of the KLM. If not using a C-profile to prevent the KLM from becoming deformed during use, it is advisable to use iron or steel side brackets for reinforcement. Remember not to use more than half of the LM adjustment screws, in case removal is necessary once installation is complete (see drawing 3).

It is advisable to maintain a distance of 5-8 mm between the LM and the KLM during the bell swing. The greater the distance between the LM and the KLM, the lesser the power exerted by the LM.

3. FIXING THE BS2 A/B IN PLACE

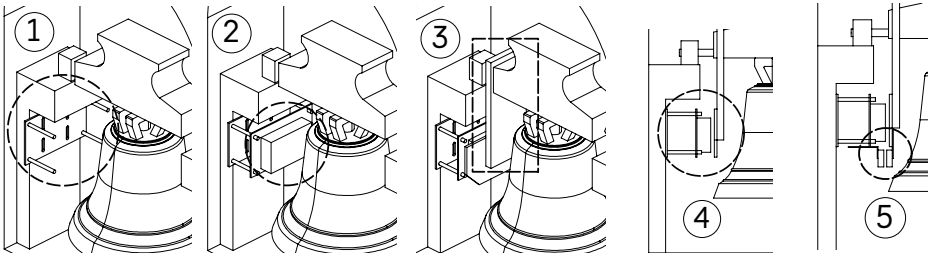
Attach the bell movement sensor using the fixing brackets, as follows (see drawings 4 and 5):

Sensor A (with cable) with the angle bracket

Sensor B (without cable) with the straight bracket

Sensor B must be placed on the moving part of the bell, positioned in the middle of the KLM. It is important to assess whether the sensor should be installed above or below the KLM. The position depends on the weight of the bell and on the degree to which we wish the bell to swing (the size of the arc), in relation to the change in sensor status. In order to function, the status of the sensor must change on the second swing of the bell. Sensor A must be installed on the LM opposite sensor B (both longitudinally and perpendicularly). At this point, the wiring between the LM, the sensor and the VEGA can be completed. A dynamic cable should be used to connect the KLM, in accordance with the power of the motor (typically CYKY 7 x 1.5 or CYKY 7 x 2.5). For the BS2 sensor any dual cable can be used. Connect the LM in accordance with the colours specified (see the wiring diagram in par. 8).

Before use, ensure that the wiring has been completed correctly, particularly with regard to the thermal protection (see wiring table).



OPERATING INSTRUCTIONS

4. QUICK SETUP

This menu enables the basic configuration of the most important parameters to be performed. Before starting, set the desired language. Using the arrow keys to move, go to the *LANGUAGE* menu, press ENT, choose the language with the arrow keys and press ESC to confirm your choice and exit the menu.

1. Connect the IB-Key programming terminal (MOT9004035) via the RS485 connector, located on the electronic control unit next to the green LED. Once connection is complete, the start screen will appear on the display (fig. 1).

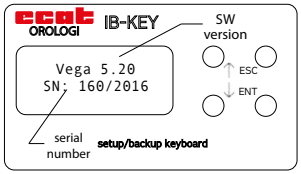


Fig. 1

2. To activate the sensor, move the bell manually. When the bell moves in front of the sensor, the blue LED on the control panel will blink. If the sensor does not blink, the distance between sensors A and B (see drawing 5, just above) may be too great, or the sensor may be connected incorrectly. Stop the bell.

3. If the system is protected, insert the password. Press the down arrow until the word PASSWORD appears, confirm with **ENT** ⇨ **Enter password** ⇨ **ENT** ⇨ confirm the suggested password (**999999**) with the **ENT** key. Once the system has been unlocked, the *QUICK SETUP* menu can be accessed.

If the password set is 999999, the system will not request the password every time the menu is accessed.

4. Go to the *QUICK SETUP* menu and press **ENT** ⇨ **Bell Detection** will appear on the display, confirm by pressing ENT again. If an error message appears on the display (*Sensor inactive* or *Stop bell*), check that all the previous steps have been followed, particularly sensor activation (see point 2). The bell will begin to swing. Wait until both the swing periods are aligned, monitoring the data on the display (fig. 2).

5. Press the arrows repeatedly to adjust the period until this is optimal, visually checking the swing of the bell and listening to the sound. Each time an adjustment is made, wait until the two values are aligned (+/- 2 s). If the adjustment made is sufficient, confirm with ENT. Confirm again with ENT, and press ESC to return to the previous screen.

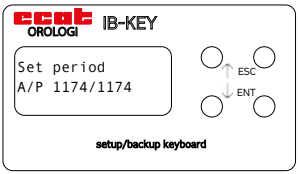


Fig. 2 - ***A***: *actual swing period;*
P: *required swing period*

The bell will stop moving automatically. During the braking phase, the ENT key can be pressed to set the duration of the braking period, so that inertia causes the bell to stop swinging. Use the arrow keys to select a system (or a sound mode; System A1 is the default parameter) and confirm with the ENT key. Press ESC to return to the previous screen. If only one system is displayed, go to the SYSTEM COUNTER menu to enable up to a maximum of 3 systems (see par. 6.4). At this point, disconnect the IB-Key terminal (MOT9004035) and check the bell swing using the manual command. If the adjustments made are not satisfactory, repeat the process (*QUICK SETUP* ⇨ *ENT*).

5. SYSTEM A1

From the *QUICK SETUP* menu, click on the down arrow to view the *SYSTEM A1* menu. Click ENT to access it. The bell sound parameters can be adjusted and memorised within the three sound modes (referred to as systems). This manual only describes the configuration of the A1 System. The steps for adjusting the parameters of Systems A2 and A3 are the same.

5.1. BASIC SETUP

DEFAULT PARAMETERS

Enter the diameter of the bell and press ENT to confirm. The control unit will apply a set of pre-set parameters, calculated in order to make the bell swing. In most cases, these parameters will be sufficient to make the bell swing and to allow the swinging period to be adjusted during this operation.

Restoring factory settings changes all the parameters of the bell, including those regarding the hammers, which will return to their initial state (inactive).

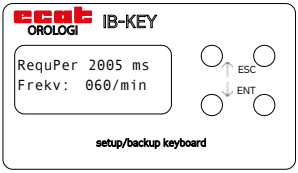


Fig. 3 - ***RequPer***: *time required for complete oscillation;* ***Frekv***: *strokes per minute.*

PERIOD

This menu enables the bell swing period to be adjusted. The term "period" refers to the time taken by the bell to return to its initial position after swinging forwards and backwards once. This means that the clapper hits the bell twice in each period (see fig. 3).

START

Use this menu to adjust the power of the first and second impulses provided by the motor in order to start the movement of the bell. These parameters are instrumental to enabling the bell to begin swinging, and as such must be adjusted carefully. The first impulse must initiate the bell movement, while the second must move the BS2-A sensor outside the field of the BS2-B magnet. The sensor must change status within the first two swings. If this does not occur, the bell will not swing. The length of the second impulse must be the same or greater than the length of the first (the bell must perform at least one swing, identical to the first but in the opposite direction).
The *IMPULSE* option (see fig. 4) can be used in exceptional cases, if the bell does not start swinging. This parameter specifies the number of extra impulses required in order for the BS2 sensor to be read. Accordingly, if two impulses are set, the control unit will perform four (2 default impulses + 2 set by the user). If the sensor is not read in the correct position, an error message will appear on the screen.

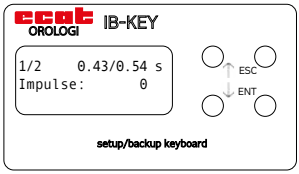


Fig. 4 - ***1***: *first impulse;* ***2***: *second impulse;* ***Impulse***: *extra impulse.*

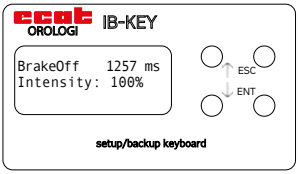


Fig. 5

BRAKE

These parameters regulate the bell braking. The first (*BrakeOff*, see fig. 5) indicates the length of the braking period, while the second corresponds with the braking intensity. If the value 000% is inserted, the bell will stop through inertia, without any intervention from the brake.

DELAYED START

This menu enables several bells to be synchronised, setting a delay for the impulses (in seconds): delayed start of the bell; braking time of the bell.

SPECIAL

This enables the swing of the bell to be adjusted with greater accuracy via a number of specific parameters: Special1 (expressed in a numerical value) affects the speed of ascent and stability; Special2 (expressed in a numerical value) affects the speed and enables the bell to exceed the height set.

These parameters must only be changed WITH THE ASSISTANCE of the ECAT technical department.

5.2. SETUP IN MOTION

Use this menu to customise a default configuration. When you enter this screen, a dialogue box will appear, asking whether you want to start the bell (if it is not in motion) or stop it (if it is in motion). Having accessed this screen and started the swing, use the arrow keys to increase or decrease the swinging period; the device will react to these adjustments, attempting to reach the values set as quickly as possible. The swing period indicator (value A) will change, reflecting the response of the device to the adjustments made. This value must be similar or equal to the value set (value P).
Every time a correction is made (increase or decrease), it will take a short time for this to be reflected in swing of the bell. Confirm with the ENT key. On exiting the menu (ESC) the bell will stop (see fig. 6).

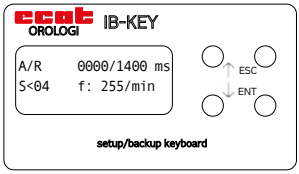


Fig. 6 - ***A***: *actual period;* ***B***: *required period.*
S: *< sensor position; 04, system status (see par. 5.4);*
f: *strokes per minute.*

5.3. ASYMMETRIC CORRECTION

The system enables the length of the right and left swing to be adjusted (in a percentage value), in order to adjust the striking force of the clapper. Use this setup to adjust the sound of the clapper (by listening to it) so that it is identical on both sides. The typical values of this adjustment vary according to the size and mechanical behaviour of the bell. It is always advisable to adjust the mechanical behaviour of the bell FIRST, and then electronically correct the asymmetry. When adjusted to + 100% or - 100%, the motor acts in one direction only. Adjusting the motor to a value of 000% will enable it to work in perfect symmetry.
Use the arrow keys to increase or decrease the percentage of asymmetry. With each adjustment, the system will change the parameters as quickly as possible; naturally, the normal delay in reaction of the bell must be taken into account when making a comparison between the values set and those reached (see fig. 7, next page).

5.4. SYSTEM STATUS

Manually swing the bell to check the status of the sensor (the > / < symbols indicate its position) and the condition of the system (see fig. 8, *System condition* and *List of Attributes*).

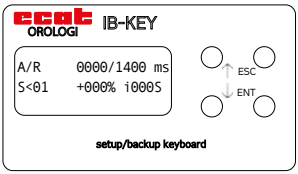


Fig. 7 - **+000%** *asymmetry;* **i***: instantaneous duration of the motor impulse.*

5.5. SYSTEM BACKUP

This menu enables system configurations to be stored or retrieved from the programming terminal (IB-Key, MOT9004035); this can store 999 system configurations, identifiable by the name and version of the corresponding software.

MEMORISATION ON KEYPAD
To memorise the configurations, the slot number where this is to be stored must be selected. After entering the number, the display will indicate the file name (e.g. *Empty001.par*) and the corresponding software version.

RETRIEVING PARAMETERS FROM KEYPAD
To retrieve a memorised configuration, the slot number from which it needs to be retrieved must be selected (1-999). When the number is entered, the display shows the name of the record and the corresponding software version. The version indicated must be compatible with the one installed on the device (backup cannot be completed for versions from 2.08 to 3.03).

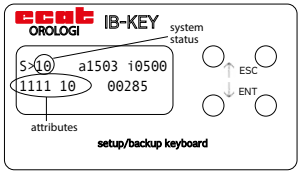


Fig. 8 - ***S****: sensor position and sensor status (see diagram);* ***a****: actual period;* ***i*** *(ms): activation of the linear motor;* ***attributes:*** *string of 8 characters.*

6. GENERAL SETUP

Menu for configuring or activating the various system parameters.

6.1. REVERSING THE DIRECTION

In some cases, it may occur that the sensor is installed incorrectly. Under normal conditions, the magnet only needs to pass in front of the sensor twice. In cases where the first bell swing is not in accordance with the polarity of the magnet, the sensor must be removed and rewired correctly. In this instance, the reversal of the direction can be configured via the software.

LIST OF ATTRIBUTES			
NUMBER	**DESCRIPTION**	**1**	**0**
1	Presence of three-phase voltage	Contactor standby ON	Contactor standby OFF
2	Thermal fuse	OK	INACTIVE
3	Temperature	OK	
4	Voltage 12V	Voltage > 11.5V – OK	Voltage < 11.5V
5			
6	IN3 activation (see wiring table, p. 5)	YES	NO
7	IN2 activation (see wiring table, p. 5)	YES	NO

NUMBER	SYSTEM CONDITION	NUMBER	SYSTEM CONDITION
00	All outputs OFF	**12**	Synchronisation of brake
1	Standby OFF	**13**	Brake
2	Inactive state: Bell power test ON + loading settings + Standby ON	**14**	N/A
3	Execution of first swing (impulse)	**15**	N/A
4	Execution of second swing (impulse)	**16**	N/A
5	Pause at end of second impulse	**17**	N/A
6	N/A	**18**	N/A
7	Start of synchronisation activation	**19**	N/A
8	Synchronisation	**20**	Standby ON
9	Swing activation start	**21**	Pause at end of Standby
10	Swing	**22**	Conditional input copy
11	Start of brake activation	**23**	Forced stop of secondary motor

6.2. THREE-PHASE CONTROL

When using a single-phase 230V motor, the three-phase control setting must be disabled (or set to 0).

6.3. STRIKER SETTINGS

Only available for some versions (contact the Ecat technical office). Menu to configure the hammer activation period.

6.4. SYSTEM COUNTER

This menu enables from 1 to a maximum of 3 systems to be enabled. The control unit can manage up to 3 systems, in order to set different levels of swing. For example, a base swing level can be set on System 1, with a lower level on System 2, with System 3 used to set the funeral tolls with the hammers. The systems are activated in sequence via the IN1, IN2 and IN3 commands, as shown in the table below.

6.5. RS485 ADDRESS

Menu for setting the addresses for each control unit.

6.6. BELL NAME

Menu for inserting the name of the bell.

INPUT	1 SYSTEM	2 SYSTEMS	3 SYSTEMS
IN1	SYSTEM 1	SYSTEM 1	SYSTEM 1
IN2	SYSTEM 1	SYSTEM 2	SYSTEM 2
IN3	SYSTEM 1	SYSTEM 1	SYSTEM 3

6.7. UNILATERAL PULL

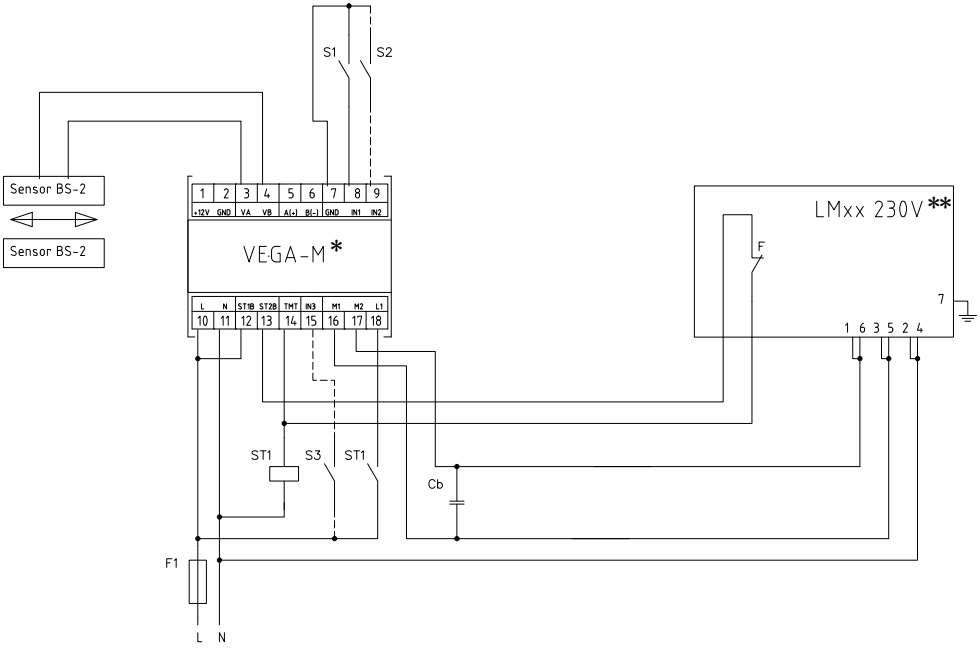
This menu enables the bell to be set to swing on only one side (the motor will only pull the bell from the side from which the swing began).

7. ERROR

This screen displays the chronology of a maximum of 30 errors detected by the system. Use the arrow keys to navigate through the list of errors. These can be deleted by pressing ENT. The last error detected (in chronological order) will be the first on the list. The various different error types are indicated by a code (A34) and by a series of flashes from the red LED.

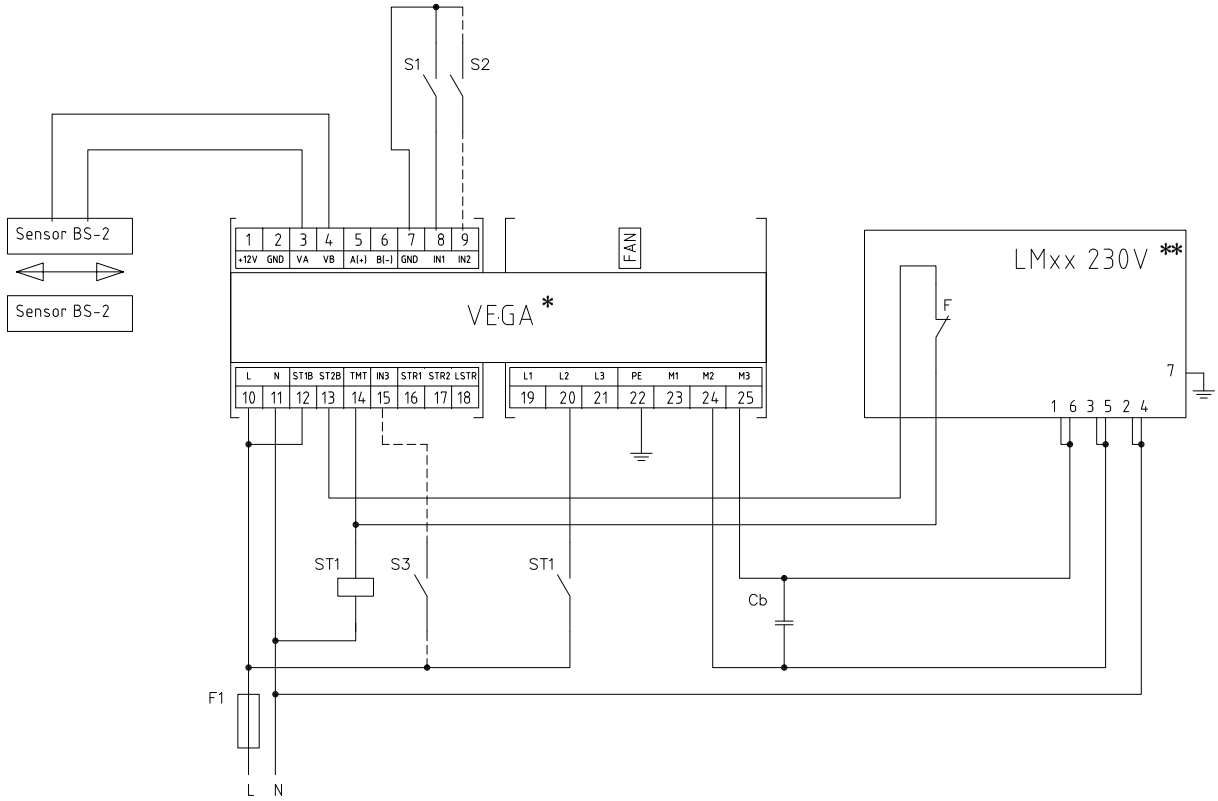
ERROR	NAME	DESCRIPTION
31 (1 blinking)	Configuration error	The system parameters have not been set
32 (2 blinking red)	Swing start error - Sensor missing	Detection error or incorrect parameters
33 (3 blinking red)	Swing error	Swing interrupted
34 (4 blinking red)	Overheated motor	
35 (5 blinking red)	Three-phase error	
36 (6 blinking red)	No 12VDC	Low voltage or short circuit on 12VDC
37 (7 blinking red)	Overheated TRIAC	Install a more recent version
38 (8 blinking red)	Sensor error	The sensor is positioned in the opposite direction to the bell swing
Errors 39 and 40 relate to the use of parallel control units and must be managed with the assistance of the manufacturer.		

8. WIRING

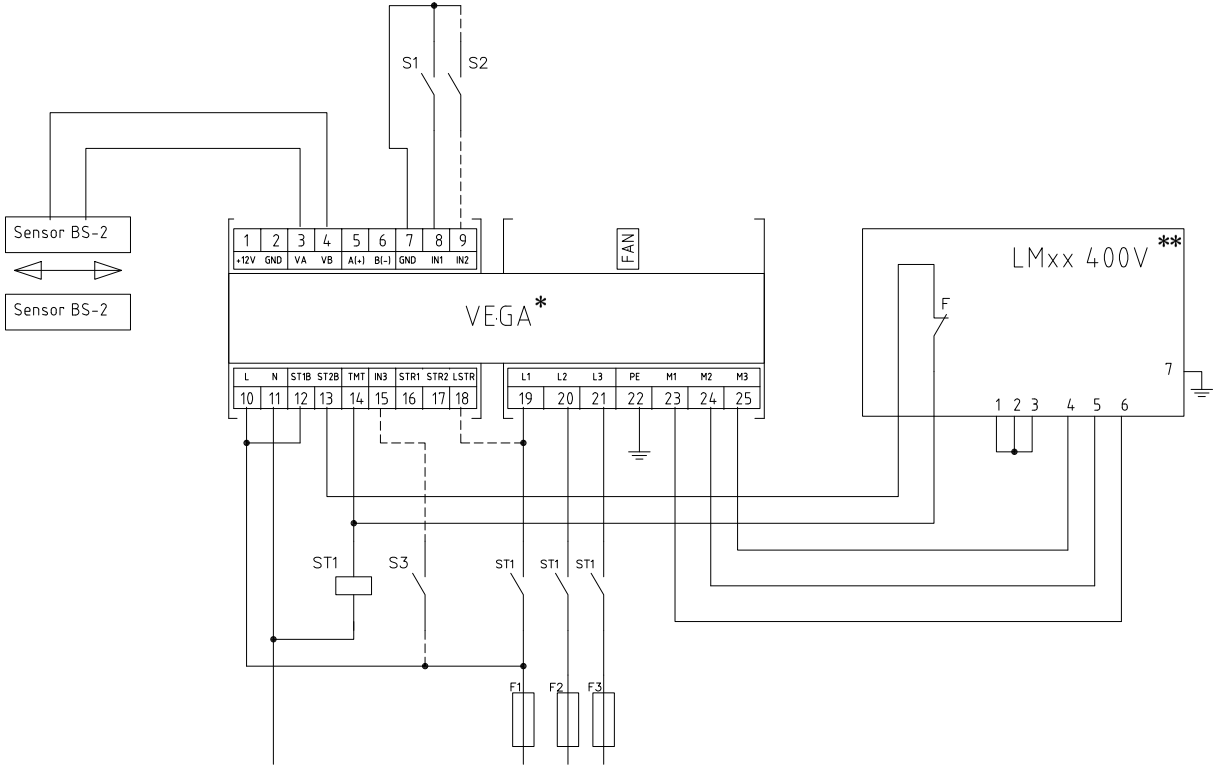


*VEGA-M	**LM
MOT9004031	MOT9004020-21-22

*VEGA	**LM
MOT9004032	MOT9004020-21-22-23



*VEGA	**LM
MOT9004032-33-34	MOT9004020-24-25-26-27



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SCAN ME

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