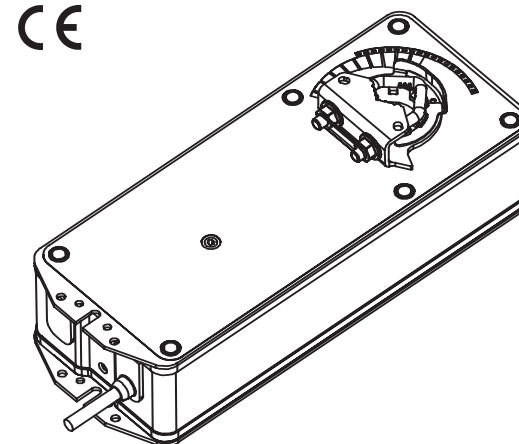
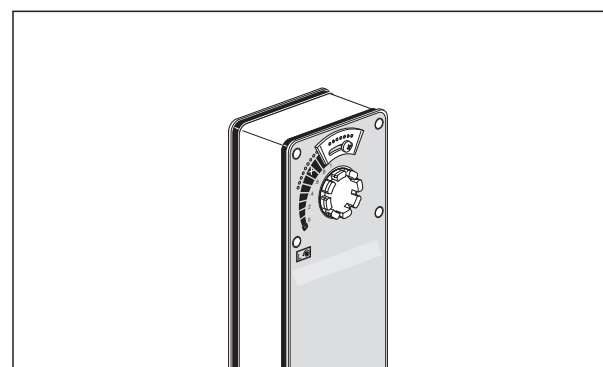
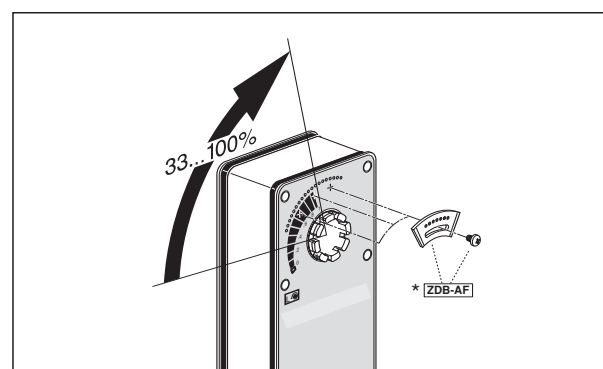
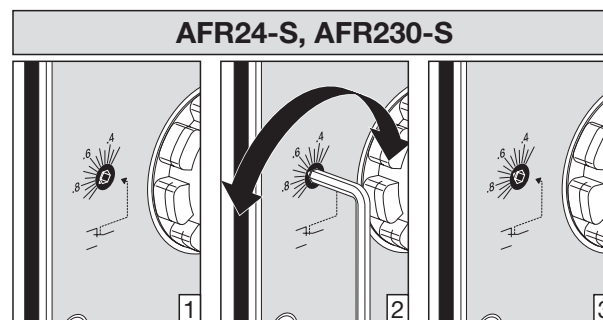
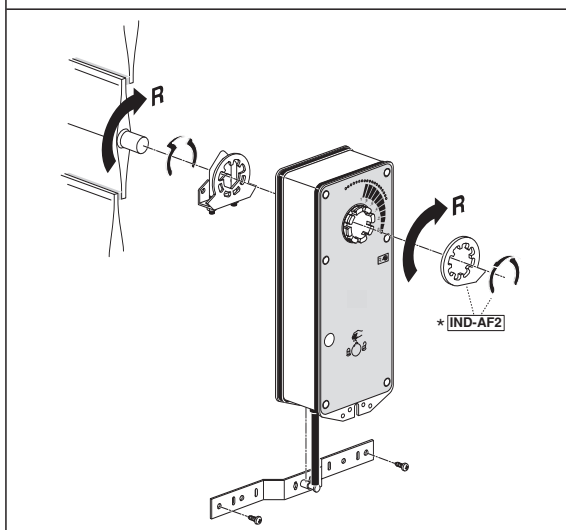
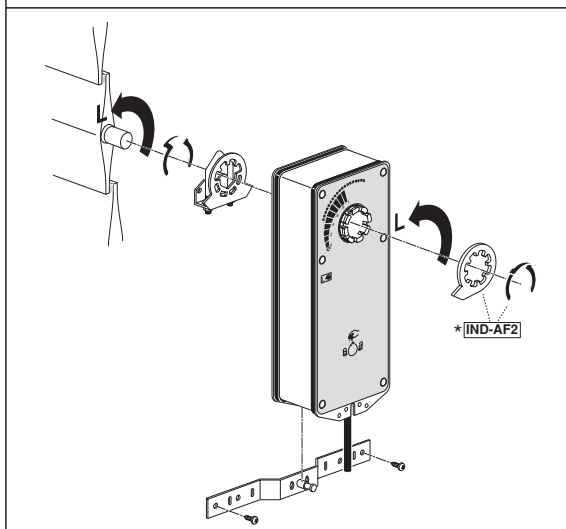
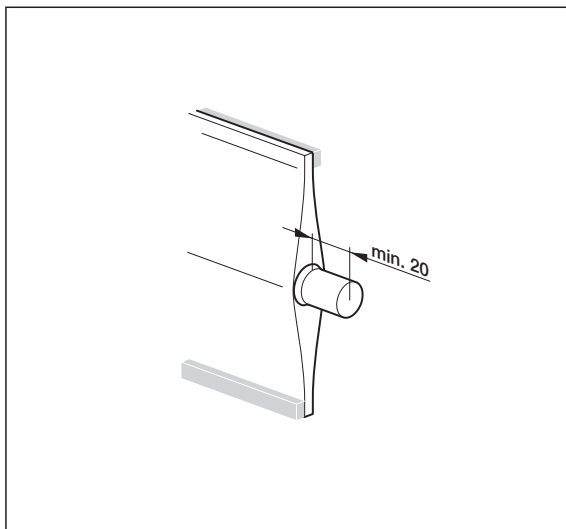
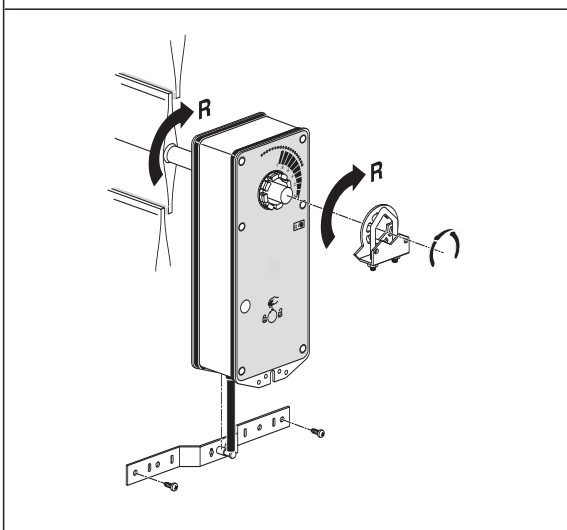
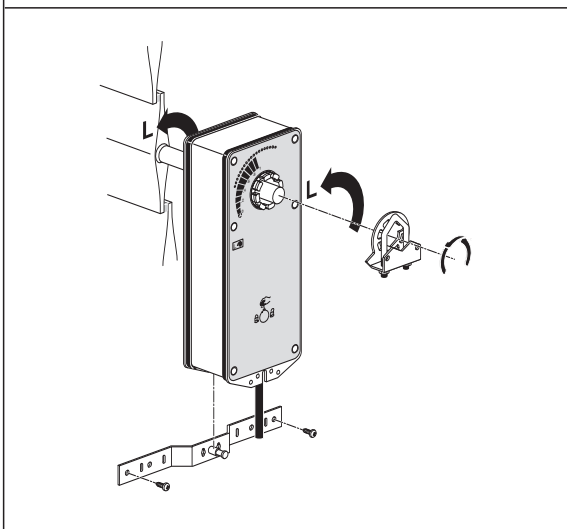
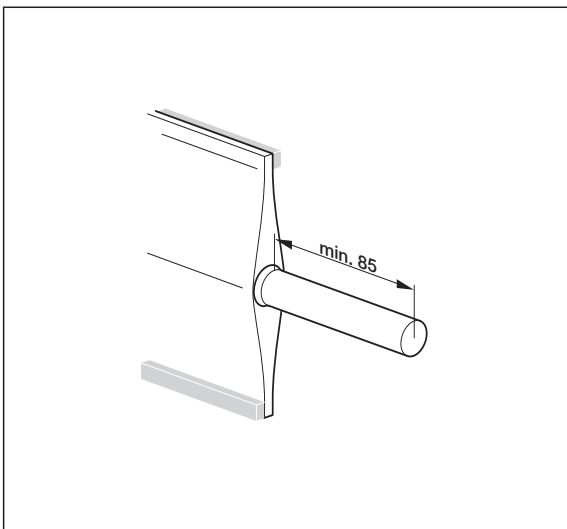


**AFR24, AFR24-S  
AFR230, AFR230-S**

Federrücklaufantrieb 15 Nm  
 Servomoteur à ressort de rappel 15 Nm  
 Servomotore con ritorno a molla 15 Nm  
 Spring return actuator 15 Nm  
 Veerteruggangmotor 15 Nm



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- Français
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Information
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Informatie
➔



- |                           |                                     |
|---------------------------|-------------------------------------|
| * IND-AF2                 | * ZDB-AF                            |
| <b>DE</b> *Zubehör:       | Im Lieferumfang nicht enthalten.    |
| <b>FR</b> *Accessoires:   | Ne fait pas partie de la livraison. |
| <b>IT</b> *Accessori:     | Non inclusa nella fornitura.        |
| <b>GB</b> *Accessories:   | Not included with the actuator.     |
| <b>NL</b> *Hulpmateriaal: | Wordt niet meegeleverd.             |

TAC AB, Jägershillgatan 18, SE-213 75 MALMÖ, SWEDEN, + 46 40 38 68 50 (switchboard), www.tac-global.com

70579-00001.A

## Deutsch Federrücklaufantrieb AFR24(-S), AFR230(-S)

**Anwendung** Der Federrücklaufantrieb AFR... wird für die Verstellung von Luftklappen mit Sicherheitsfunktionen verwendet. Der AFR... ist mit einem Universal-Klemmbock ausgerüstet. Er wird direkt auf die Klappenachse montiert und mit der mitgelieferten Verdrehsicherung fixiert.

**Wirkungsweise** Die Ansteuerung erfolgt über Schalter mit AC/DC 24 V, bzw. AC 230 V Nennspannung. Der Federrücklaufantrieb AFR... bringt die Klappe unter gleichzeitigem Spannen der Rückzugsfeder in die Betriebsstellung und hält sie dort bei minimalem Stromverbrauch so lange, bis die Spannung zum Antrieb durch einen externen Steuerkontakt oder durch einen Stromausfall unterbrochen wird. Die gespeicherte Federenergie bringt die Klappe automatisch in die Sicherheitsstellung. Der Antrieb wird mit einer Federvorspannung von 5,5% (Position 0%) ausgeliefert. Beim ersten Anlegen der Nennspannung wird die Federvorspannung gelöst und der Antrieb fährt (bis max. -5,5%) in die geschlossene Position.

**Signalisierung** Der Antrieb AFR...-S verfügt über einen einstellbaren Hilfs-schalter. Damit können Drehwinkel von 0...89% signalisiert werden. An einer mechanischen Stellungsanzeige kann der Stand des Drehwinkels der Klappe abgelesen werden.

<b>Wichtiger Hinweis</b> Bei Bestimmung des Drehmomentbedarfs von Luftklappen müssen die Angaben der Klappenhersteller betr. Querschnitt, Bauart, Einbauort und die spezifischen lufttechnischen Bedingungen beachtet werden.
---

<b>Anschluss-Schema</b>	<b>Sicherheitshinweise</b>
<div><div><div><span><span>GO</span></span> <span>G</span> <span>AC 24 V</span></div><div><span><span>-</span></span> <span>+</span> <span>DC 24 V</span></div><div><span><span>N</span></span> <span>L1</span> <span>AC 230 V</span></div></div><div><div><div><span>1</span> <span>2</span></div><div><span>S1</span> <span>S2</span> <span>S3</span></div></div><div><div><div><span>&lt;</span><span>s</span></div><div><span>&gt;</span><span>s</span></div></div></div><div><div><span>S = 0 ... 89% &lt;1</span></div></div></div><div><div><div><span><span>AFR24-S</span></span></div><div><span><span>AFR230-S</span></span></div></div></div><div><div><span>M</span></div></div></div> <div><div><div><span>M</span></div></div><div><div><span><b>AFR24, AFR230</b></span></div></div></div>	

Technische Daten	AFR24, AFR24-S	AFR230, AFR230-S
Nennspannung	AC 24 V, 50/60 Hz <p>DC 24 V</p>	AC 230 V, 50/60 Hz <p>—</p>
Funktionsbereich	AC 19,2…28,8 V <p>DC 21,6…28,8 V</p>	AC 198…264 V <p>—</p>
Dimensionierung	10 VA	11 VA
Leistungsverbrauch <p>– während Federaufzug</p> <p>– in Haltestellung</p>	5 W <p>1,5 W</p>	6,5 W <p>2,5 W</p>
Anschluss	– Motor <p>– Hilfsschalter (nur AFR...-S)</p>	Kabel 1 m 2 x 0,75 mm² <p>Kabel 1 m 3 x 0,75 mm²</p>
Hilfsschalter (nur AFR...-S) <p>– Schaltpunkt</p>	1 x EPU 6 (3) A, AC 250 V <span>☐</span> einstellbar 0...89% ) ,	
Drehsinn	wählbar durch Montage L/R	
Drehmoment	– Motor <p>– Federrücklauf</p> <p>min. 15 Nm (bei Nennspannung) <p>min. 15 Nm</p></p>	
Drehwinkel	max. 95° (einstellbar ab 33% in 5,5% Schritten mit Zubehör ZDB-AF)	
Laufzeit	Motor ≈ 150 s, Federrücklauf ≈ 16 s	
Schalleistungspegel	Motor max. 45 dB(A); Feder ≈ 62 dB(A)	
Lebensdauer	> 60 000 Drehbewegungen	
Stellungsanzeige	mechanisch	
Schutzklasse	III Schutzkleinspannung	II schutzisoliert
Schutzart	IP 54	
Umgebungstemperatur	– 30...+50 °C	
Lagertemperatur	– 40...+80 °C	
Feuchteprüfung	nach EN 60730-1	
EMV	CE gemäss 89/336/EWG	
Niederspannungsrichtlinie	CE gemäss 73/23/EWG	
Wartung	wartungsfrei	

**MONTAGEBEISPIEL AUF DER RÜCKSEITE**

## Français Servomoteur à ressort de rappel AFR24(-S), AFR230(-S)

**Application** Le servomoteur à ressort de rappel AFR... est prévu pour la motorisation de clapets d'air avec fonction de sécurité. Le AFR... est équipé d'une noix d'entraînement universelle. Il est monté directement sur l'axe du clapet et fixé avec la barrette antirotation fournie.

**Modé de fonctionnement** La commande se fait par des contacts externes avec une tension nominale AC/DC 24 V ou AC 230 V. Lorsque le moteur est mis sous tension, il fait pivoter le clapet dans la position d'exploitation en tendant le ressort de rappel en même temps. Il maintient le clapet dans cette position avec un minimum de consommation de courant jusqu'à ce que la tension du moteur soit interrompue par un contact de commande externe ou par une rupture d'alimentation. L'énergie du ressort de rappel ramène le clapet automatiquement dans la position de sécurité. Le servomoteur est livré avec une prétension du ressort de 5,5% (position 0%). A la première mise sous tension, l'énergie du ressort est libérée et amène le servomoteur dans la position de fermeture (jusqu'à - 5,5% maxi).

**Signalisation** L'AFR...-S est muni d'un contact auxiliaire réglable. Ainsi, des angles de rotation de 0...89% peuvent être signalés. La position du clapet est également visible sur l'indicateur mécanique du servomoteur.

<b>Indication importante</b> Lors de la détermination du couple de rotation nécessaire, on doit tenir compte des indications du fabricant de clapet concernant la section, la construction, les conditions aérauliques spécifiques à l'utilisation.
---

<b>Schéma de raccordement</b>	<b>Consigne de sécurité</b>
<div><div><div><span><span>GO</span></span> <span>G</span> <span>AC 24 V</span></div><div><span><span>-</span></span> <span>+</span> <span>DC 24 V</span></div><div><span><span>N</span></span> <span>L1</span> <span>AC 230 V</span></div></div><div><div><div><span>1</span> <span>2</span></div><div><span>S1</span> <span>S2</span> <span>S3</span></div></div><div><div><div><span>&lt;</span><span>s</span></div><div><span>&gt;</span><span>s</span></div></div></div><div><div><span>S = 0 ... 89% &lt;1</span></div></div></div><div><div><div><span><span>AFR24-S</span></span></div><div><span><span>AFR230-S</span></span></div></div></div><div><div><span>M</span></div></div></div> <div><div><div><span>M</span></div></div><div><div><span><b>AFR24, AFR230</b></span></div></div></div>	

Caractéristiques	AFR24, AFR24-S	AFR230, AFR230-S
Tension nominale	AC 24 V, 50/60 Hz <p>DC 24 V</p>	AC 230 V, 50/60 Hz <p>—</p>
Plage de fonction	AC 19,2…28,8 V <p>DC 21,6…28,8 V</p>	AC 198…264 V <p>—</p>
Dimensionnement	10 VA	11 VA
Consommation <p>– pour ouvrir</p> <p>– pour maintenir ouvert</p>	5 W <p>1,5 W</p>	6,5 W <p>2,5 W</p>
Raccordement	– moteur <p>– contact auxiliaire (AFR...-S)</p>	câble 1 m 2 x 0,75 mm² <p>câble 1 m 3 x 0,75 mm²</p>
Contact auxiliaire (AFR...-S) <p>– Point de basculement</p>	1 x inverseur 6 (3) A, AC 250 V <span>☐</span> réglable 0...89% ) ,	
Sens de rotation	selon montage côté L/R	
Couple de rotation	– moteur <p>– ressort de rappel</p> <p>min. 15 Nm (avec tension nominale) <p>min. 15 Nm</p></p>	
Angle de rotation	max. 95° (réglable en pas de 5,5% à partir de 33% avec accessoire ZDB-AF)	
Temps de marche	moteur ≈ 150 s, ressort de rappel ≈ 16 s	
Niveau sonore	moteur max. 45 dB(A); ressort ≈ 62 dB(A)	
Durée de vie	> 60 000 manœuvres	
Indication de position	mécanique	
Classe de protection	III très-basse tension de protection	II isolation de securité
Protection	IP 54	
Température ambiante	– 30...+50 °C	
Température de stockage	– 40...+80 °C	
Test d'humidité	selon EN 60730-1	
CEM	CE selon 89/336/CEE	
Directive pour basse tension	CE selon 73/23/CEE	
Entretien	sans	

**EXEMPLE DE MONTAGE AU VERSO**

## Italiano Servomotore con ritorno a molla AFR24(-S), AFR230(-S)

**Applicazione** Il servomotore con ritorno a molla AFR... è previsto per la motorizzazione delle serrande aventi funzioni di sicurezza. Il servomotore AFR... è provvisto di un morsetto a fissaggio universale. Esse viene montato direttamente sul perno della serranda e fissato con l'annesso bloccaggio di sicurezza.

**Funzionamento** Il comando si effettua attraverso contatti con tensione AC/DC 24 V o AC 230 V. Con l'inserimento della tensione di alimentazione il motore porta la serranda in posizione di lavoro e contemporaneamente la molla in tensione. La serranda è mantenuta in questa posizione con un minimo di consumo di corrente fino a quando la tensione di alimentazione non viene interrotta o da un contatto esterno o da una interruzione della corrente di alimentazione. La forza della molla di ritorno porta automaticamente la serranda in posizione di sicurezza. L'attuatore viene fornito con pre-tensionamento della molla del 5.5% (posizione 0%). Dopo la prima messa in tensione la molla pre-tensionata si sblocca e, in mancanza di energia, l'attuatore raggiunge la posizione di chiusura (fino a max -5.5%).

**Segnalazione** L'AFR...-S è corredato da un contatto ausiliario regolabile da 0...89% che segnala la posizione della serranda. La posizione della serranda è ugualmente visibile dall'indicatore meccanico del servomotore.

<b>Avvertenza importante</b> Per determinare il momento torcente per il movimento delle serrande vanno osservate le indicazioni del costruttore relative a sezioni, tipo di costruzione, luogo di installazione e condizioni di climatizzazione.
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<b>Schema di allacciamento</b>	<b>Importante</b>
<div><div><div><span><span>GO</span></span> <span>G</span> <span>AC 24 V</span></div><div><span><span>-</span></span> <span>+</span> <span>DC 24 V</span></div><div><span><span>N</span></span> <span>L1</span> <span>AC 230 V</span></div></div><div><div><div><span>1</span> <span>2</span></div><div><span>S1</span> <span>S2</span> <span>S3</span></div></div><div><div><div><span>&lt;</span><span>s</span></div><div><span>&gt;</span><span>s</span></div></div></div><div><div><span>S = 0 ... 89% &lt;1</span></div></div></div><div><div><div><span><span>AFR24-S</span></span></div><div><span><span>AFR230-S</span></span></div></div></div><div><div><span>M</span></div></div></div> <div><div><div><span>M</span></div></div><div><div><span><b>AFR24, AFR230</b></span></div></div></div>	

Dati tecnici	AFR24, AFR24-S	AFR230, AFR230-S
Tensione nominale	AC 24 V, 50/60 Hz <p>DC 24 V</p>	AC 230 V, 50/60 Hz <p>—</p>
Campo di tolleranza	AC 19,2…28,8 V <p>DC 21,6…28,8 V</p>	AC 198…264 V <p>—</p>
Dimensionamento	10 VA	11 VA
Potenza assorbita <p>– per aprire</p> <p>– per mantenere aperto</p>	5 W <p>1,5 W</p>	6,5 W <p>2,5 W</p>
Allacciamento	– motore <p>– contatto ausilario (AFR...-S)</p>	cavo 1 m 2 x 0,75 mm² <p>cavo 1 m 3 x 0,75 mm²</p>
Contacto ausiliario (AFR...-S) <p>– Punto di scatto</p>	1 x SPDT 6 (3) A, AC 250 V <span>☐</span> regolabile 0...89% ) ,	
Senso di rotazione	secondo montaggio lato L/R	
Momento torcente	– motore <p>– ritorno molla</p> <p>min. 15 Nm (con tensione nominale) <p>min. 15 Nm</p></p>	
Angolo di rotazione	max. 95° (regolabile dal 33% a scatti del 5,5% con accessorio ZDB-AF)	
Tempo di rotazione	motore ≈ 150 s, ritorno molla ≈ 16 s	
Livello sonoro	motore max. 45 dB(A); molla ≈ 62 dB(A)	
Vita dell'apparecchio	> 60 000 rotazioni (motore)	
Indicazione della posizione	meccanica	
Classe di protezione	III bassa tensione di sicurezza	II isolamento di protezione
Tipo di protezione	IP 54	
Temperatura ambiente	– 30...+50 °C	
Temperatura di stoccaggio	– 40...+80 °C	
Test di umidità	secondo EN 60730-1	
CEM	CE secondo 89/336/CEE	
Direttiva bassa tensione	CE secondo 73/23/CEE	
Manutenzione	nessuna	

**ESEMPIO DI MONTAGGIO SUL RETRO**

## English Spring return actuator AFR24(-S), AFR230(-S)

**Application** The Type AFR... spring return actuator is intended for operating air dampers that perform a safety function. The actuator is equipped with a universal V-bolt clamp and mounts directly on the damper spindle. It is supplied with an antirotation locking device.

**Mode of operation** Control is effected through switches with AC/DC 24 V or AC 230 V power. The actuator moves the damper to its normal working position, tensioning the return spring at the same time, and keeps it there, using minimum current, until the power supply to the actuator is interrupted by an external control contact or a power failure. The energy stored in the return spring automatically moves the damper to its safe position when the actuator is de-energized. The actuator is delivered with 5.5% spring pre-tensioning (at the 0% position). At first power-up the spring pre-tensioning is released and the actuator moves to the closed position (to max. -5.5%).

**Signalling** The AFR...-S actuator has one adjustable auxiliary switch which allows angle of rotation between 0...89% to be signalled. Intermediate positions of the damper blade are shown by a mechanical indicator.

<b>Note</b> When calculating the torque required to operate dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, mounting and air flow conditions.
---

<b>Wiring diagram</b>	<b>Danger</b>
<div><div><div><span><span>GO</span></span> <span>G</span> <span>AC 24 V</span></div><div><span><span>-</span></span> <span>+</span> <span>DC 24 V</span></div><div><span><span>N</span></span> <span>L1</span> <span>AC 230 V</span></div></div><div><div><div><span>1</span> <span>2</span></div><div><span>S1</span> <span>S2</span> <span>S3</span></div></div><div><div><div><span>&lt;</span><span>s</span></div><div><span>&gt;</span><span>s</span></div></div></div><div><div><span>S = 0 ... 89% &lt;1</span></div></div></div><div><div><div><span><span>AFR24-S</span></span></div><div><span><span>AFR230-S</span></span></div></div></div><div><div><span>M</span></div></div></div> <div><div><div><span>M</span></div></div><div><div><span><b>AFR24, AFR230</b></span></div></div></div>	

Technical data	AFR24, AFR24-S	AFR230, AFR230-S
Nominal voltage	AC 24 V, 50/60 Hz <p>DC 24 V</p>	AC 230 V, 50/60 Hz <p>—</p>
Nominal voltage range	AC 19.2…28.8 V <p>DC 21.6…28.8 V</p>	AC 198…264 V <p>—</p>
For wire sizing	10 VA	11 VA
Power consumption <p>– opening</p> <p>– open</p>	5 W <p>1.5 W</p>	6.5 W <p>2.5 W</p>
Connecting cable	– motor <p>– auxiliary switch (AFR...-S)</p>	1 m 2 x 0.75 mm² <p>1 m 3 x 0.75 mm²</p>
Auxiliary switch (AFR...-S) <p>– Switching point</p>	1 x SPDT 6 (3) A, AC 250 V <span>☐</span> adjustable 0...89% ) ,	
Direction of rotation	selected by L/R mounting	
Torque	– motor <p>– spring return</p> <p>min. 15 Nm (at rated voltage) <p>min. 15 Nm</p></p>	
Angle of rotation	max. 95° (adjustable from 33% in 5,5% steps with accessory ZDB-AF)	
Running time	motor ≈ 150 s, spring return ≈ 16 s	
Sound power level	motor 45 dB(A) max.; spring ≈ 62 dB(A)	
Service life	> 60 000 operations	
Position indication	mechanical	
Protection class	III safety extra-low voltage	II all insulated
Degree of protection	IP 54	
Ambient temperature range	– 30...+50 °C	
Storage temperature range	– 40...+80 °C	
Humidity test	to EN 60730-1	
EMC	CE according to 89/336/EEC	
Low Voltage Directive	CE according to 73/23/EEC	
Maintenance	maintenance-free	

**FITTING INSTRUCTIONS SEE OVERLEAF**

## Nederlands Veerteruggangmotor AFR24(-S), AFR230(-S)

**Toepassing** De veerteruggangmotor AFR... wordt voor kleppen met een veiligheidsfunctie toegepast. De AFR... is met een universele klembok uitgevoerd. Hij wordt direkt op de klepas gemonteerd en met de meegleverde verdraaiings-beveiliging vastgezet.

**Werking** De aansturing geschiedt via een schakelaar met AC/DC 24 V c.q. AC 230 V voedings­spanning. De veerteruggangmotor AFR... brengt de klep onder het gelijktijdig spannen van de terugloopveer in de bedrijfsstand en houdt deze daar, bij minimaal energieverbruik, totdat de voedings­spanning door een extern contact of een spanningsuitval onderbroken wordt. De gespannen veer brengt de klep vervolgens automatisch in de veiligheidsstand. De aandrijving wordt af fabriek met 5,5% veervoorspanning geleverd (positie 0%). Bij het voor de eerste keer aansluiten van de voedings­spanning wordt deze veervoorspanning definitief opgeheven en loopt de aandrijving in de sluitstand (tot max. -5,5%).

**Signalering** De veerteruggangmotor AFR...-S is voorzien van één instelbare hulpschakelaar. Hiermee kunnen klepstanden van 0...89% worden gesignaleerd. Ook kan op een mechanische standaardwijzer de klepstand worden afgelezen.

<b>Belangrijke opmerking</b> Bij het bepalen van het benodigde draaimoment voor de klep dient op de instructies van de kleppenfabrikant wat betreft diameter, constructie, inbouwplaats en luchttechnische eisen geleet te worden.
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<b>Aansluitschema</b>	<b>Waarschuwing</b>
<div><div><div><span><span>GO</span></span> <span>G</span> <span>AC 24 V</span></div><div><span><span>-</span></span> <span>+</span> <span>DC 24 V</span></div><div><span><span>N</span></span> <span>L1</span> <span>AC 230 V</span></div></div><div><div><div><span>1</span> <span>2</span></div><div><span>S1</span> <span>S2</span> <span>S3</span></div></div><div><div><div><span>&lt;</span><span>s</span></div><div><span>&gt;</span><span>s</span></div></div></div><div><div><span>S = 0 ... 89% &lt;1</span></div></div></div><div><div><div><span><span>AFR24-S</span></span></div><div><span><span>AFR230-S</span></span></div></div></div><div><div><span>M</span></div></div></div> <div><div><div><span>M</span></div></div><div><div><span><b>AFR24, AFR230</b></span></div></div></div>	

Technische gegevens	AFR24, AFR24-S	AFR230, AFR230-S
Nominale spanning	AC 24 V, 50/60 Hz <p>DC 24 V</p>	AC 230 V, 50/60 Hz <p>—</p>
Functiebereik	AC 19,2…28,8 V <p>DC 21,6…28,8 V</p>	AC 198…264 V <p>—</p>
Dimensionering	10 VA	11 VA
Verbruik <p>– openen</p> <p>– in openstand</p>	5 W <p>1,5 W</p>	6,5 W <p>2,5 W</p>
Aansluiting	– motor <p>– hulpschakelaar (AFR...-S)</p>	kabel 1 m 2 x 0,75 mm² <p>kabel 1 m 3 x 0,75 mm²</p>
Hulpschakelaar (AFR...-S) <p>– Schakelpunt</p>	1 x EPU 6 (3) A, AC 250 V <span>☐</span> instelbaar 0...89% ) ,	
Draairichting	naar keuze door montage L/R	
Draaimoment	– motor <p>– veerteruggang</p> <p>min. 15 Nm (bij nom. spanning) <p>min. 15 Nm</p></p>	
Draaihoek	max. 95° (instelbaar vanaf 33% in stappen van 5,5% met hulpmateriaal ZDB-AF)	
Looptijd	motor ≈ 150 s, veerteruggang ≈ 16 s	
Geluidsniveau	motor max. 45 dB(A); veer ≈ 62 dB(A)	
Levensduur	> 60 000 draai <span>­</span> bewegingen	
Standaan <span>­</span> wijzing	mechanisch	
Beschermklasse	III veiligheidslaagspanning	II (dubbel <span>­</span> geïsoleerd)
Beschermingsgraad	IP 54	
Omgevingstemperatuur	– 30...+50 °C	
Opslagtemperatuur	– 40...+80 °C	
Vochtigheidstest	volgens EN 60730-1	
EMC	CE volgens 89/336/EEG	
Laagspanningsrichtlijn	CE volgens 73/23/EEG	
Onderhoud	onderhoudsvrij	

**MONTAGEVOORBEELD OP DE ACHTERZIJDE**