USING THE QUICK GUIDE

- Provides information on handling, assembly and installation.
- Remains for later use at the product.
- Does **not** replace the electronically provided instructions for use.

This manual is intended exclusively for persons who are familiar with the logistics and installation. The person must have the following qualifications:

- Knowledge and understanding of the safety instructions.
- Skills for installation and assembly.
- Knowledge of EMC-conform wiring.
- Detection of hazards and risks of the electrical drive technology.
- Knowledge of DIN IEC 60364-5-54.
- Knowledge of national safety regulations.

SAFETY INSTRUCTIONS

▲ DANGER

Interventions by unauthorized personnel!



▶ Modification or repair is only permitted by KEB authorized personnel.

Getting more documentation



Hazards and risks through ignorance

- ► Open the KEB homepage at www.keb.de. ▶ By entering the material number in the search field, you will get the
- corresponding parts of the instructions for use.
- ► Read the instructions for use carefully!
 - ▶ Observe the safety and warning instructions!
 - ► If you have any questions, please contact service@keb.de!

Danger to life through electric shock and malfunctions!

TRANSPORT

The transport must be carried out by instructed persons, observing the following instructions.

A CAUTION



Maximum design edges and high weight!

Contusions and bruises!



► Never stand under suspended loads.

- ▶ Wear safety shoes.
- ► Secure devices accordingly when using lifting gear.

NOTICE

Behaviour in case of transport damage



- ▶ When receiving goods, check the device for transport damage such as deformations or loose parts.
- ► In case of damage, contact the carrier immediately.
- ▶ Do not operate the device in case of transport damage!

STORAGE

Do not store the devices

- in the environment of aggressive and/or conductive liquids or gases.
- at places with direct sunlight.
- outside the specified environmental conditions.

UNPACKING AND CHECKING

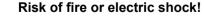
- Make sure that no components are bent and/or isolation distances are changed.
- The device must not be put into operation in case of mechanical defects. There is no compliance with applicable safety standards any more.

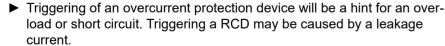
INSTALLATION

- If available, use the lifting eyebolts provided for installation.
- Do not stand under suspended equipment during installation.
- Mount the product according to the required degree of protection.
- Make sure that no small parts fall into the device during assembly and wiring (drilling chips, screws etc.). This also applies to mechanical components, which can lose small parts during operation.
- The devices are intended for the use in a pollution degree 2 environment.
- Maximum ambient temperature 45°C.
- UL/CSA: Ensure UL-compliant connection of all power connections according to the requirements given in the data sheet.

START-UP AND OPERATION

▲ WARNING Triggering of overcurrent protection devices





▶ In order to reduce the risk of fire or electric shock, live parts and other components of the device should be checked and replaced in case of

A CAUTION

High temperatures on the device Burning of the skin!



- ► Cover hot surfaces so that they are safe to touch. ▶ If necessary, attach warning signs to the system.
- Check surface before touching.
- ▶ Let the device cool down before any work is carried out.

INSTALLATION / ELECTRICAL CONNECTION

▲ DANGER

Voltage at the terminals and the device!

Danger to life by electric shock!



Never work under voltage on the device or touch exposed parts.



- ▶ For any work on the unit switch off the supply voltage and secure it against switching on.
- ▶ Wait until the drive has stopped in order that no regenerative energy can
- ▶ Never bridge upstream protective devices (also not for test purposes).

Dimension

Connect the protective earth conductor properly.

For a trouble-free and safe operation, please pay attention to the following note:

- ► Install all required covers and protective devices for operation.
- ▶ Check for reliable fit of the device connections in order to avoid contact resistance and sparking.

MAINTENANCE

The following maintenance work has to be carried out when required, but at least once a year by authorized and trained personnel.

- ► Clean the product from dirt and dust deposits.
- ▶ In case of malfunction, unusual noises or smells inform a person in charge!
- ▶ In case of failure, please contact the machine manufacturer.

DISPOSAL

► For professional disposal, follow the instructions in the instructions for use.

INSTALLATION DISTANCES

Installation distances				
A E D C				

	111 111111	inches
Α	150	6
В	100	4
С	30	1.2
D	0	0
E	0	0
F 1)	50	2

Dimension | Distance in

Distance to front operating elements in the control cabinet door.

WIRING

Mains connection 3-phase (L1, L2, L3) Mains fuse 3: Mains choke 5: Drive controller 4: E6 filter 2: Mains contactor

NOTICE

Interference due to line extension!

▶ The cables between the filter and the drive converter must not be extended.

CONNECTION

Filter	Filter		Cross-sectional area in mm² / AWG			torque in Nm / lb inch			
	L1, L2, L3	PE	Output	L1, L2, L3	PE	Output	PE		
14E6T60-1050				0.26 / 2	2410	6 / 10			
16E6T60-1050		3	2	0.7525	/ 184	10/8	_		
18E6T60-1050	3	3		1 25/	25/11/2	16 / 6	_		
20E6T60-1050				435 / 142		35 / 2			
22E6T60-1050		4	1	1050 /	81/0	50 / 1/0	10 / 88		
22E6T60-5150				50 / 1	1/0 35 / 2				
23E6T60-5150	5	6	5	70 / 2	2/0	3372	13.5 / 120		
24E6T60-5150			95 / 3	2/0	50 / 1/0				
27E6T60-1150	7	8	7	9573	5/0	120 / 4/0			
28E6T60-1150	9 10		10	10 9	10 9	2 x 70 /	70 / 2/0	2 x 70 /	
2020100-1130		9 10 9				2 x 2/0	101210	2 x 2/0	35 / 310
30E6T60-1150		.0			2 x 95 /	95 / 3/0	2 x 95 /		
3323.30 1100				2 x 3/0		2 x 3/0			

No.	Connection type	No.	Connection type
1	Stranded wires (stripped)	6	M8 bolt for cable lug
2	Stranded wires with ferrules	7	M10 Ring cable lug
3	Spring-loaded terminal	8	M10 Screw for cable lug
4	M6 bolt for	9	M12 Ring cable lug
5	M8 Ring cable lug	10	M12 Screw for cable lug

FUSE PROTECTION

Fuse protection for IEC						
		Max. fuse	e size / A 1)			
Filter	Input voltage / V	Class gG				
		SCCR 30 kA	SCCR 100 kA			
14E6T60-1050		25	_			
16E6T60-1050		50	_			
18E6T60-1050	400	80	-			
20E6T60-1050		100	-			
22E6T60-1050		160	_			
22E6T60-5150		160	-			
23E6T60-5150		200	-			
24E6T60-5150		250	_			
27E6T60-1150		355	-			
28E6T60-1150		400	500			
30E6T60-1150		-	630			

Fuse protection for UL							
			Max. fuse size / A 1)				
Innut voltage / V	C	lass "J	"	Class gR / aR		aR	
input voitage / v		SCCR		SC	CR	Туре	
	5kA	10kA	18 kA	30 kA	100 kA	Type	
	25	_	_	25	_		
	50	_	ı	50	_		
	60	_	_	63	_		
	90	_	-	100	_		
	_	125	_	125	_		
480	_	150	_	175	_	2)	
	_	175	-	200	_		
	_	200	-	200	-		
	_	_	350	-	400		
	_	_	400	-	500		
	_	_	-	-	630		
	Input voltage / V	Input voltage / V 5kA 25 50 60 90 - - - - - - - - -	Input voltage / V Class "J SCCR 5kA 10 kA 25 -	Max. fuse Class ,, J" SCCR 5kA 10kA 18kA 25 - -	Max. fuse size / A Class "J" Class "	Max. fuse size / A 1) Class gR / a SCCR SCC	

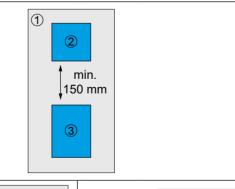
- The specified fuse values are maximum values. In case of a smaller dimensioning, observe the values in the installation manual of the corresponding COMBIVERT F6.
- See installation manual COMBIVERT F6.
- The fuse values of the filters correspond to the fuse values of the corresponding drive controllers.
- Cable cross-sections and fuses must be dimensioned according to the design of the machine manufacturer. Specified minimum / maximum values may not be fallen below /exceeded.

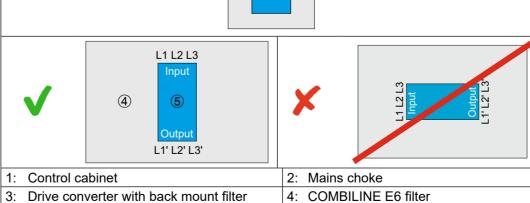
USE ON THE DRIVE CONTROLLER

The mechanical housing sizes of the COMBILNE E6 back mount filters correspond to those of the COMBIVERT F6 drive controllers

COMBILINE E6	COMBIVERT F6		Paguirod mains chake	
COMBILINE E6	Housing	Device size	Required mains choke	
1416E6T60-1050	2	_	-	
1820E6T60-1050	3	_	-	
22E6T60-1050	4	_	22Z1B04-1000 ¹⁾	
2224E6T60-5150	4, 6	_	-	
27E6T60-1150	7	25/26/27	25/26/27Z1B04-1007	
28E6T60-1150	7, 8	27/28	27/28Z1B04-1007	
30E6T60-1150	8	29/30	29/30Z1B04-1007	

From a power of 55 kW. INSTALLATION POSITION OF THE FILTERS / INSTALLATION POSITION OF THE MAINS CHOKES FROM SIZE 25





NOTICE

5: Mounting plate

Damage due to heat accumulation!

Do not operate the filter horizontally!

▶ The filters may only be operated vertically in the installation position

MOUNTING ON THE DRIVE CONTROLLER











- Place the drive converter flush on the back mount filter
- ▶ Attach the drive converter to the filter. To do this, screw the screws supplied into the thread provided. The tightening torques can be found in the following table.

For mounting the drive converters, the following fastening materials were tested with the

- 4: ► Screw the filter wires into the input terminals (L1, L2, L3) of the drive converter.
- 5: Back mount filter with attached drive converter.

corresponding quality by KEB. Use of other fastening material

NOTICE

▶ The alternative fastening material selected must comply with the material characteristics (quality) and tightening torques specified below! The use of other fastening materials is beyond of KEB's control and therefore exclusively the responsibility of the customer.

COMBIVERT F6 housing	COMBILINE E6	Fastening material	Tightening torque Nm / Ib inch
2	1416E6T60-1050	0	
3	1820E6T60-1050	Screw-and-washer as- sembly - M6 x 12 - 8.8	6.5 / 58
4	22E6T60-1050	Sembly - MO X 12 - 0.0	
4		Hexagonal locking tooth screw M6 x 12 - 8.8	9 / 80
6 22	2224E6T60-5150	Hexagonal locking tooth screw M8 x 16 - 8.8	22 / 195
7	27E6T60-1150	Hexagonal screw	
7		M10 x 20 - 8.8 washer <i>ISO 7090</i> - 10 - 200 HV	50 / 440
8	2830E6T60-1150	Hexagonal screw M12 x 25 - 8.8 washer <i>ISO 7090</i> - 12 - 200 HV	80 / 700

Overheating of the back mount filters!

Use of other fastening material

▶ The use of back mount filters on drive converters with material number xxF6xx-xxx9 (fluid cooler water, built-in version, sub-mounted braking resistors) leads to overheating and is not permitted.

▶ The alternative fastening material selected must comply with the mate-

rial characteristics (quality) and tightening torques specified below!

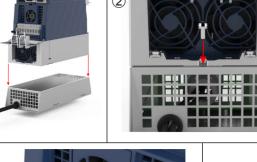
FIXING ON THE MOUNTING PLATE

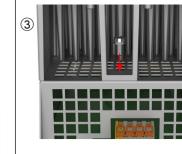
NOTICE

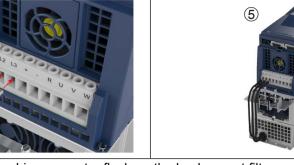
For mounting the drive converters, the following fastening materials were tested with the corresponding quality by KEB.

> The use of other fastening materials is beyond of KEB's control and therefore exclusively the responsibility of the customer.

COMBILINE E6	Fastenii	Nm / Ib inch		
14E6T60-1050	Screw-and-washer	Flat washer		
16E6T60-1050	assembly ISO 4017 - M5 - 8.8	ISO 7092 - 5 - 200 HV	4.5 / 40	
18E6T60-1050	Screw-and-washer	Flatahan		
20E6T60-1050	assembly ISO 4017 - M6 - 8.8	Flat washer <i>ISO 7092</i> - 6 - 200 HV	8 / 70	
22E6T60-1050		700 7002 0 200 110		
22E6T60-5150		\\/		
23E6T60-5150	Hexagonal screw ISO 4017 - M8 - 8.8	Washer <i>ISO 7090</i> - 8 - 200 HV	22 / 195	
24E6T60-5150	130 4017 - 1010 - 0.0	700 7000 0 200111		
27E6T60-1150	Hexagonal screw ISO 4017 - M10 - 8.8	Washer ISO 7090 - 10 - 200 HV	50 / 440	
28E6T60-1150	Hexagonal screw	Washer	80 / 700	
30E6T60-1150	ISO 4017 - M12 - 8.8	ISO 7090 - 12 - 200 HV	60 / 700	







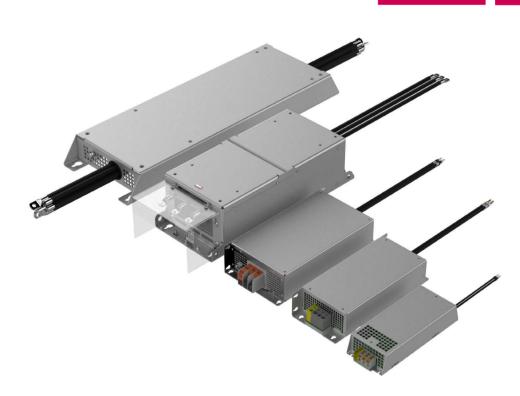


www.keb.de

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KEB





COMBILINE **E6**

QUICK GUIDE | HF BACK MOUNT FILTERS

Translation of the original manual E6 series filters
Document 20237664 EN 03

Mat.No. 0UE6N1M-0001

ACCESSORY COVER FOR 22...24E6T60-5150

The accessory cover for the mains input serves as protection against accidental contact.

Accessory Material number		Tightening torque of the nuts	
Cover kit	60E6V80-0001	5Nm	

NOTICE

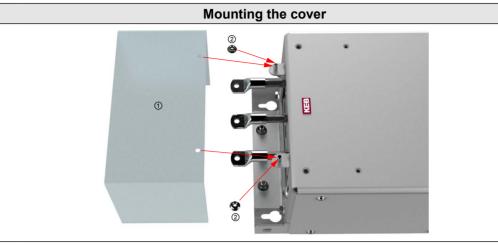
No vibration resistance of the cover available!

Damage of the cover!

► The cover must not be exposed to vibrations.



The cover does not have UL or cUL approval.
The cover was not subjected to a vibration test.



- 1: Cover (Plexiglas transparent)
- 2: Lock nuts M6
- ▶ Place the cover with the holes on the threaded bolts.
- ► Screw the M6 lock nuts onto the threaded bolts and tighten with 5 Nm.



Filter with mounted cover

CERTIFICATION

CE Certification

(E

KEB products meet the requirements of the applicable European and national directives. The conformity has been proven. The corresponding declarations can be downloaded from our website by entering the material number in the search field.

UL certification

NOTICE

UL certification

Only devices with UL logo on the name plate are certified.

For compliance with UL for use on the North American and Canadian Market, the following additional information must be observed (English original text):

- Only for use in WYE 480V/277V supply sources
- Identification for which Inverters (Cat. Nos.) the Filters are intended for, according to Illustration No.1.
- Use 75°C Copper Conductors Only
- Use in a Pollution Degree 2 environment

▲ WARNING

▶ The opening of the branch circuit protective device may be an indication that a fault current has been interrupted. To reduce the risk of fire or electrical shock, current-carrying parts and other components of the controller should be examined and replaced if damaged.

A AVERTISSEMENT

► LE DÉCLENCHEMENT DU DISPOSITIF DE PROTECTION DU CIRCUIT DE DÉRIVATION PEUT ÊTRE DÛ À UNE COUPURE QUI RÉSULTE D'UN COURANT DE DÉFAUT. POUR LIMITER LE RISQUE D'INCENDIE OU DE CHOC ÉLECTRIQUE, EXAMINER LES PIÈCES PORTEUSES DE COURANT ET LES AUTRES ÉLÉMENTS DU CONTRÔ-LEUR ET LES REMPLACER S'ILS SONT ENDOMMAGÉS.

UKCA conformity

UKCA conformity

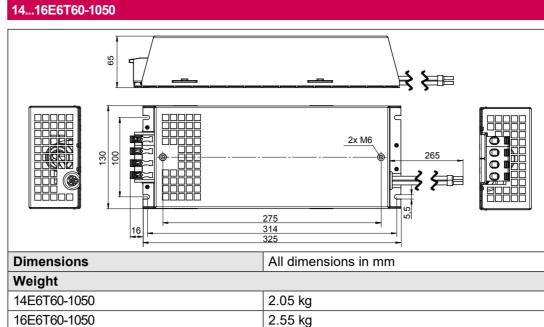
KEB products with the logo comply with UK requirements and guidelines.

The relevant information can be obtained from our website by entering the material number in the search box or from our authorized representative below:

KEB(UK) Ltd.

5 Morris CI, Park Farm Industrial Estate, Wellingborough NN8 6XF, UK

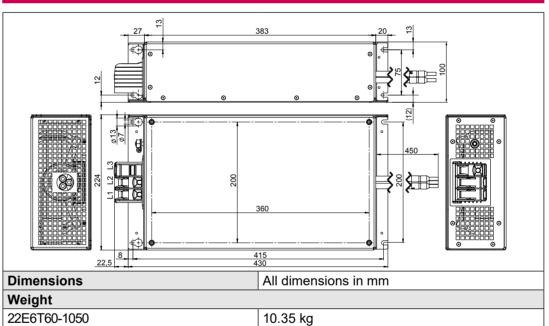
DIMENSIONS HF BACK MOUNT FILTERS



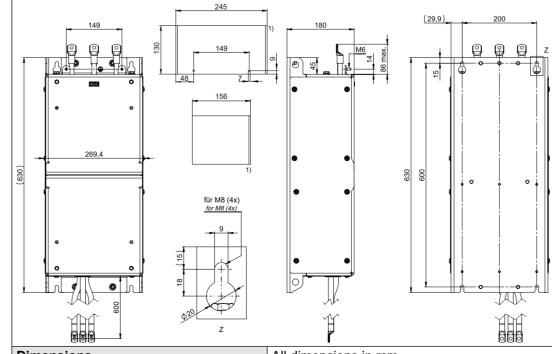
| 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 390

22E6T60-1050

18...20E6T60-1050



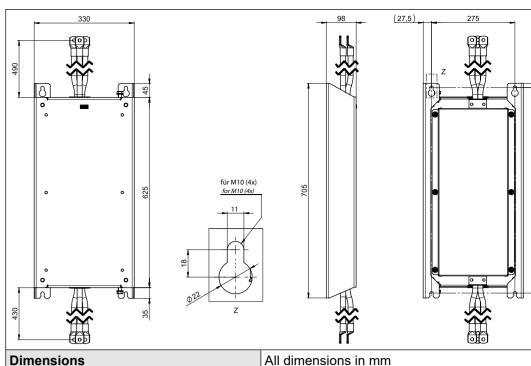
22...24E6T60-5150



Dimensions	All dimensions in mm	
Weight		
22E6T60-5150	36.5 kg	
23E6T60-5150	39 kg	
24E6T60-5150	47 kg	

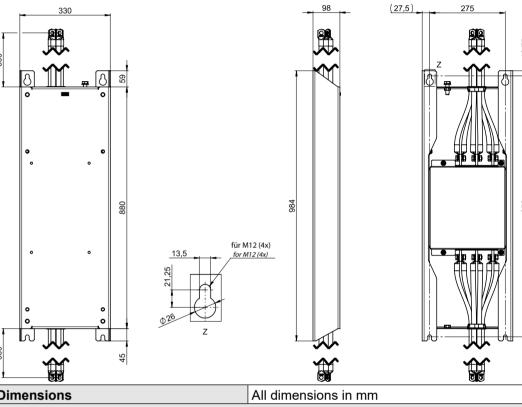
1) Accessory cover kit.

27E6T60-1150



Dimensions All dimensions in mm	
Weight	
27E6T60-1150	28.2 kg

28...30E6T60-1150



Dimensions	All dimensions in mm			
Weight				
28E6T60-1150	38.2kg			
30E6T60-1150	40.5 kg			

MAINS CHOKES

Information of dimensions and mounting points of the mains chokes can be found in the instructions for use.

INSTRUCTIONS FOR USE

					MBILINE E6 EMC filter ls/dr/ma_dr_e6-filter_inst_20165077_en.pdf
	7	KEB Online	www.keb.de	KR	다른 언어도 사용할 수 있습니다.
٦		BG	Други налични езици.	HR	Ostali dostupni jezici.
		CN	其他语言可用。	HU	Más elérhető nyelvek.
- A	<u> </u>	CZ	Jiné jazyky k dispozici.	LV	Citas pieejamās valodas.
4		DK	Andre sprog til rådighed.	LT	Kitos kalbos.
$ \cdot $	H	DE	Weitere Sprachen verfügbar.	MT	Lingwi oħra disponibbli.
		EN	Other languages available.	NL	Andere talen beschikbaar.
il		EE	Muud keeled on saadaval.	PL	Inne dostępne języki.
		ES	Otros idiomas disponibles.	PT	Outros idiomas disponíveis.
	H	FI	Muut kielet saatavilla.	RO	Alte limbi disponibile.
		FR	Autres langues disponibles.	RU	Доступны другие языки.
		GR	Άλλες διαθέσιμες γλώσσες.	SE	Andra språk finns tillgängliga.
il		IE	Teangacha eile ar fáil.	SK	lné jazyky sú k dispozícii.
		IT	Altre lingue disponibili.	SI	Drugi jeziki so na voljo.
		JP	他の言語も利用できます。	TR	Mevcut diğer diller.
-	Ы	·			