

**POTVRDA O TIPNOM ODOBRENJU**
TYPE APPROVAL CERTIFICATE

Br /No 03-001513/031224

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za klasifikaciju brodova, Dio 1. - Opći propisi, Odjeljak 3. - Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenja pod nadzorom Hrvatskog registra brodova.

This is to certify that this product, on the basis of the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.

TIP I OPIS PROIZVODA:

TYPE AND DESCRIPTION OF PRODUCT:

BRODSKI INSTRUMENTACIJSKI I KONTROLNI KABEL BEZHALOGENI I VATROOTPORNI
SHIPBOARD INSTRUMENTATION AND CONTROL CABLE HALOGEN FREE AND FIRE RESISTANT**LKM-FRHF / LKSM-FRHF/ LKAM-FRHF 150/250 V (300 V)**
LKM-FRSHF2 / LKSM-FRSHF2/ LKAM-FRSHF2 150/250 V (300 V)**PROIZVOĐAČ:**

MANUFACTURER:

HELKAMA BICA Oy
Lakimiehenkatu 4
FI-20780 Kaarina
FINLAND**DODATNO MJESTO PROIZVODNJE:**

ADDITIONAL PLACES OF PRODUCTION:

HELKAMA Bica Oy, Lasitehtaankatu 12, FI-10960 Hanko, FINLAND**PROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:**

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

HRB PRAVILA ZA KLASIFIKACIJU BRODOVA: DIO 12 - ELEKTRIČNA OPREMA
CRS RULES FOR THE CLASSIFICATION OF SHIPS: PART 12 - ELECTRICAL EQUIPMENT

Helkama specification: HBKQ 9 spec. 63, 64, 67, 124, 126 and 130

Technical specification:

Design standard: IEC 60092-376 (2nd ed. 2003-05),

Cable for control and instrumentation circuits 150/250 V (300 V)

Other standards:

- testing: IEC 60092-350 Ed.4.0 (2014-08), General constructions and testing requirements
- insulation: IEC 60092-360 (1.0 ed. 2014-04), Insulating materials for shipboard power cables
- sheathing: IEC 60092-360 (1.0 ed. 2014-04),
Sheathing materials for shipboard power and telecommunication cables

DETALJI O PROIZVODU I UVJETIMA CERTIFIKACIJE DANI SU NA POLEĐINI.**FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.****ODOBRENJE VRIJEDI DO: 2020-04-04**

APPROVAL IS VALID UNTIL:

Mjesto i datum: Split, 2016-04-04

Place and date:

M.P.

(Seal)

Marinko Popović, dipl.ing.

NAPOMENA: Ova potvrda nije valjana ako se proizvod ili način njegove proizvodnje promijenio u odnosu na tipno ispitani proizvod. Proizvođač treba obavijestiti Hrvatski registar brodova o bilo kojoj izmjeni na proizvodu kako bi ishodio valjanu potvrdu.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

PODROBNIJI OPIS PROIZVODA:*DETAILED PRODUCT DESCRIPTION:*

Multi core instrument cables with stranded plain annealed Cu conductors (option tinned Cu) with XLPE insulation.
Fire properties: flame retardant, fire resistant, halogen free and low smoke.

LKM-FRHF 250 V Unarmoured
LKM-FRSHF2 250 V
LKSM-FRHF 250 V Cu-or CuSn-wire braid armoured
LKSM-FRSHF2 250 V (Collectively screened)
LKAM-FRHF 250 V Al/pest-tape collectively screened
LKAM-FRSHF2 250 V

Types	Number of conductors	Conductor cross section [mm ²]
LKM-FRHF LKM-FRSHF2 LKSM-FRHF LKSM-FRSHF2 LKAM-FRHF LKAM-FRSHF2	2, 3, 4, 5, 7, 10, 12, 14, 16, 19, 20, 24, 27, 32, 37, 61	0.75

PODRUČJE PRIMJENE / POSEBNI GRANIČNI UVJETI:*APPLICATION / LIMITATIONS:*

Fiksna ugradnja na pomorskim brodovima, odobalnim objektima i industriji.

Fixed installations in marine, offshore and industrial use.

DOKUMENTACIJA ZA TIPNO ODOBRENJE:*TYPE APPROVAL DOCUMENTATION:*

Helkama LKM-FRHF 250 V Cable Data Sheet Specification HBKQ 9. Spec 63 incl. App 2	2014-12-30
Helkama LKSM-FRHF 250 V Cable Data Sheet Specification HBKQ 9. Spec 64 incl. App 2	2016-01-12
Helkama LKAM-FRHF 250 V Cable Data Sheet Specification HBKQ 9. Spec 67 incl. App 2	2014-12-30
Helkama LKM-FRSHF2 250 V Cable Data Sheet Specification HBKQ 9. Spec 124 incl. App 2	2016-03-21
Helkama LKSM-FRSHF2 250 V Cable Data Sheet Specification HBKQ 9. Spec 126 incl. App 2	2016-03-21
Helkama LKAM-FRSHF2 250 V Cable Data Sheet Specification HBKQ 9. Spec 130 incl. App 2	2013-06-03

Izveštaj o ispitivanju/ test report:

LKM-FRHF 250V TT GL; TT_LKSM-FRHF 250V GL; LKAM-HF 24 x 0,75 250V GL TT (App LKAM-FRHF 24 x 0,75 mm²)

Helkama Test report for SHF2 sheathed cables dated 19.03.2012.

OZNAČAVANJE PROIZVODA:*MARKING OF PRODUCT:*

LOT ##### LKM-FRHF/LKM-FRSHF2/ LKSM-FRHF/LKSM-FRSHF2 "number of core" x "size of conductor" mm² 250 V + 90°C IEC 60092-376, 60331-2 (90) or 60331-1 (90), 60332-3-22 HELKAMA "month-year" and "length marking"

LOT ##### LKAM-FRHF <number of conductors > x <size> mm² 250 V + 90°C IEC 60092-376, 60331 (90), 60332-3-22 HELKAMA "month-year" and "length marking"

LOT ##### LKAM-FRSHF2 <number of conductors > x <size> mm² 250 V + 90°C IEC 60092-376, 60331, 60332-3-22 HELKAMA "month-year" and "length marking"

UVJETI ZA CERTIFIKACIJU:*CONDITIONS FOR CERTIFICATION:*

NON

Račlana

12.05.01

Zamjenjuje potvrdu

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