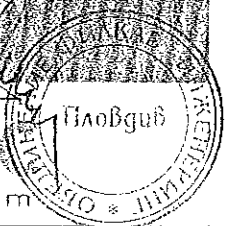


**pronutec**  
gorlan team



Bases portafusibles para fusibles tipo NH  
*NH type Low Voltage Fuse bases*

> > [www.pronutec.com](http://www.pronutec.com) > > > > > >

**gorlan**  
TEAM

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER®**  
*Vertical design fuse switches and disconnectors - TRIVER®*

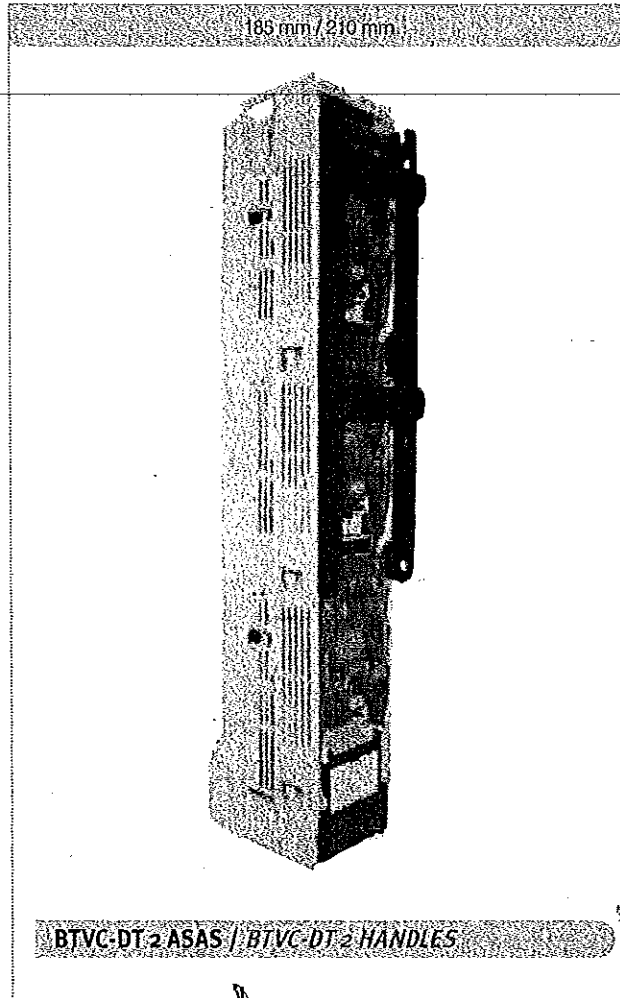
**Gama / Range**

**Tipo 438 BTVC-DT 2 asas, NH-1/2/3, 250/400/630 A**

*Type 438 fuse switches, BTVC - DT 2 handles, NH-1/2/3, 250/400/630 A*

438

Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Switching</i>	Conexiones <i>Connections</i>	Fusible <i>Fuse-link</i>	Distancia de empujado <i>Busbar spacing</i>
438.61.10.XX.YY	BTVC-DT 2 asas <i>BTVC-DT 2 handles</i>	250A	Tripolar <i>Three pole</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-1	185mm
438.62.10.XX.YY		400A			NH-2	
438.63.10.XX.YY		630A			NH-3	
438.61.18.XX.YY	BTVC-DT 2 asas <i>BTVC-DT 2 handles</i>	250A	Tripolar <i>Three pole</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-1	210mm
438.62.18.XX.YY		400A			NH-2	
438.63.18.XX.YY		630A			NH-3	



**ВЯРНО С  
ОРИГИНАЛА**



Terminales código XX / *Terminals XX Code: P. 59*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 152-153*  
 Planos / *Dimension drawings P. 65*

2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

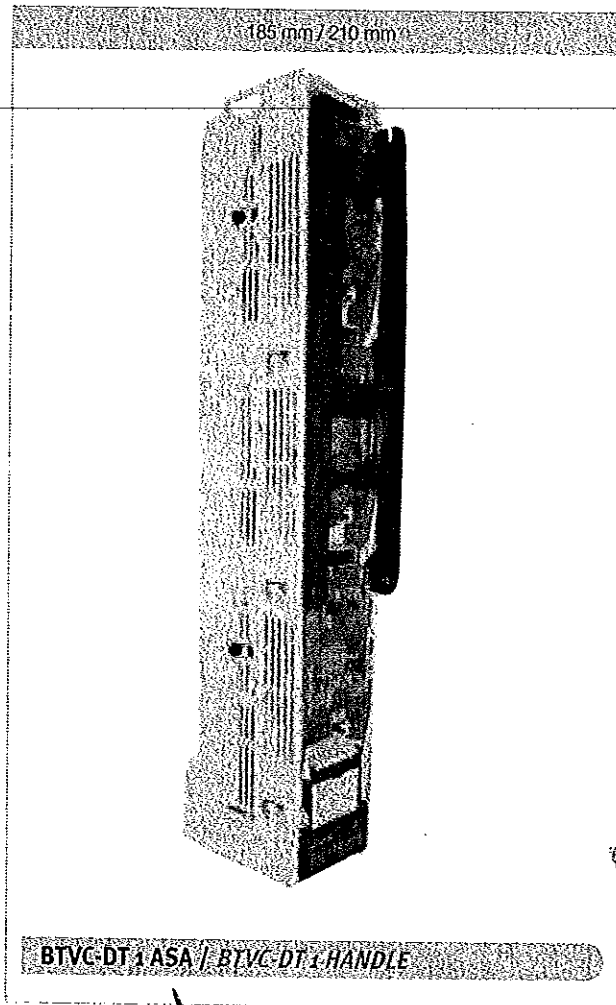
**Gama / Range**

438

**Tipo 438 BTVC-DT 1 asa, NH-1/2/3, 250/400/630 A**

*Type 438 fuse switches, BTVC - DT 1 handle, NH-1/2/3, 250/400/630 A*

Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Switching</i>	Conexiones <i>Connections</i>	Fusible <i>Fuse link</i>	Distancia de embarado <i>Busbar spacing</i>
438.71.10.XX.YY	BTVC-DT 1 asa <i>BTVC-DT 1 handle</i>	250A	Tripolar <i>Three pole</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-1	185mm
438.72.10.XX.YY		400A			NH-2	
438.73.10.XX.YY		630A			NH-3	
438.71.18.XX.YY	BTVC-DT 1 asa <i>BTVC-DT 1 handle</i>	250A	Tripolar <i>Three pole</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-1	210mm
438.72.18.XX.YY		400A			NH-2	
438.73.18.XX.YY		630A			NH-3	



**ВЯРНО С  
ОРИГИНАЛА**

Terminales código XX / *Terminals XX Code: P. 59*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos técnicos / *Technical Data: P. 152-153*  
 Planos / *Dimension drawing: P. 66*

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

**Gama / Range**

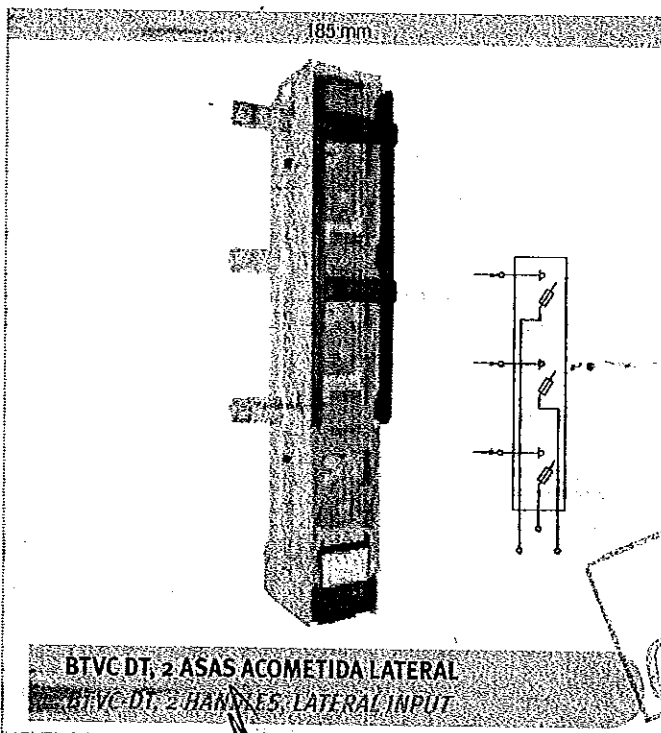
Tipo 438 BTVC / BTVC-DT acometida lateral, NH-1/2/3, 250/400/630 A

Type 438 fuse switches, BTVC/BTVC - DT lateral input, NH-1/2/3, 250/400/630 A

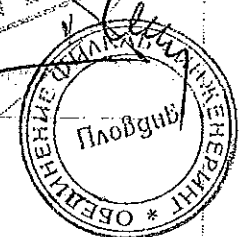
438

Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Switching</i>	Conexiones <i>Connections</i>	Fusible <i>Fuse-link</i>	Distancia de embarado <i>Busbar spacing</i>
438.51.62.XX.YY	BTVC acometida lateral <i>BTVC lateral input</i>	250 A	Unipolar <i>One pole</i>	Lateral derecha <i>Right side</i>	NH-1	N/A
438.52.62.XX.YY		400 A			NH-2	
438.53.62.XX.YY		630 A			NH-3	
438.51.63.XX.YY	BTVC acometida lateral <i>BTVC lateral input</i>	250 A	Unipolar <i>One pole</i>	Lateral izquierda <i>Left side</i>	NH-1	
438.52.63.XX.YY		400 A			NH-2	
438.53.63.XX.YY		630 A			NH-3	
438.61.62.XX.YY	BTVC 2 asas acometida lateral <i>BTVC-DT 2 handles lateral input</i>	250 A	Tripolar <i>Three pole</i>	Lateral derecha <i>Right side</i>	NH-1	
438.62.62.XX.YY		400 A			NH-2	
438.63.62.XX.YY		630 A			NH-3	
438.61.63.XX.YY	BTVC 2 asas acometida lateral <i>BTVC-DT 2 handles lateral input</i>	250 A	Tripolar <i>Three pole</i>	Lateral izquierda <i>Left side</i>	NH-1	
438.62.63.XX.YY		400 A			NH-2	
438.63.63.XX.YY		630 A			NH-3	
438.71.62.XX.YY	BTVC 1 asa acometida lateral <i>BTVC-DT 1 handle lateral input</i>	250 A	Tripolar <i>Three pole</i>	Lateral derecha <i>Right side</i>	NH-1	
438.72.62.XX.YY		400 A			NH-2	
438.73.62.XX.YY		630 A			NH-3	
438.71.63.XX.YY	BTVC 1 asa acometida lateral <i>BTVC-DT 1 handle lateral input</i>	250 A	Tripolar <i>Three pole</i>	Lateral izquierda <i>Left side</i>	NH-1	
438.72.63.XX.YY		400 A			NH-2	
438.73.63.XX.YY		630 A			NH-3	

*[Handwritten signature]*



**ВЯРНО С  
ОРИГИНАЛА**



Terminales código XX / *Terminals XX Code: P. 59*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 152-153*  
 Planos y esquemas eléctricos: P. 66  
*Dimension drawing and wiring diagrams: P. 66*

2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER®**  
*Vertical design fuse switches and disconnectors - TRIVER®*

**Gama / Range**

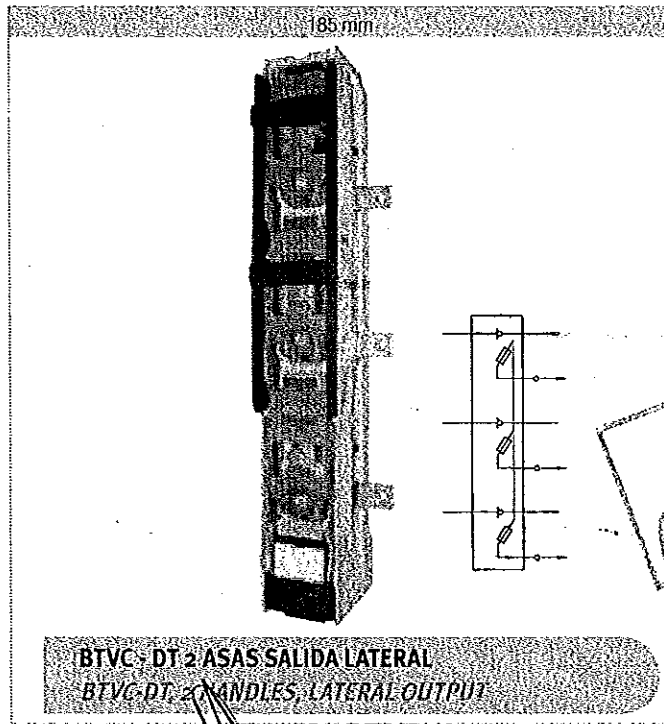
438

Tipo 438 BTVC / BTVC-DT salida lateral, NH-1/2/3, 250/400/630 A

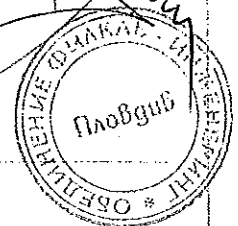
Type 438 fuse switches, BTVC/BTVC - DT lateral output, NH-1/2/3, 250/400/630 A

Referencia Reference	Tipo Type	Intensidad Current	Desconexión Switching	Conexiones Connections	Fusible Fuse-link	Distancia de embarado Busbar spacing
438.51.60.XX.YY	BTVC salida lateral BTVC lateral output	250A	Unipolar One pole	Lateral derecha Right side	NH-1	185mm
438.52.60.XX.YY		400A			NH-2	
438.53.60.XX.YY		630A			NH-3	
438.51.61.XX.YY	BTVC salida lateral BTVC lateral output	250A	Unipolar One pole	Lateral izquierda Left side	NH-1	
438.52.61.XX.YY		400A			NH-2	
438.53.61.XX.YY		630A			NH-3	
438.61.60.XX.YY	BTVC - DT 2 asas salida lateral BTVC-DT 2 handles lateral output	250 A	Tripolar Three pole	Lateral derecha Right side	NH-1	
438.62.60.XX.YY		400 A			NH-2	
438.63.60.XX.YY		630 A			NH-3	
438.61.61.XX.YY	BTVC - DT 2 asas salida lateral BTVC-DT 2 handles lateral output	250 A	Tripolar Three pole	Lateral izquierda Left side	NH-1	
438.62.61.XX.YY		400 A			NH-2	
438.63.61.XX.YY		630 A			NH-3	
438.71.60.XX.YY	BTVC - DT 1 asa salida lateral BTVC-DT 1 handle lateral output	250 A	Tripolar Three pole	Lateral derecha Right side	NH-1	
438.72.60.XX.YY		400 A			NH-2	
438.73.60.XX.YY		630 A			NH-3	
438.71.61.XX.YY	BTVC - DT 1 asa salida lateral BTVC-DT 1 handle lateral output	250 A	Tripolar Three pole	Lateral izquierda Left side	NH-1	
438.72.61.XX.YY		400 A			NH-2	
438.73.61.XX.YY		630 A			NH-3	

*[Handwritten signature]*



**ВЯРНО С  
ОРИГИНАЛА**



Terminales código XX / Terminals XX Code: P. 60  
 Accesorios código YY / Accessories YY Code: P. 61-63

Datos Técnicos / Technical Data: P. 152-153  
 Planos y esquemas eléctricos: P. 67  
 Dimension drawing and wiring diagrams: P. 67

**2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

**Gama / Range**

Tipo 438 BTVC / BTVC-DT, NH-3, 910 A

438

Тип 438 fuse switches, BTVC/BTVC-DT, NH-3, 910 A

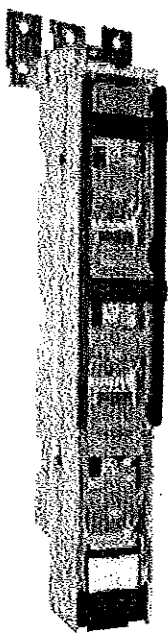
Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Switching</i>	Terminales <i>Terminal type</i>	Conexiones <i>Connections</i>	Fusible <i>Fuse-link</i>
438.58.13.04.02*	BTVC	910 A	Unipolar <i>One pole</i>	Tuerca M12 inox. insertada <i>M12 inserted nut</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-3 g Tr
438.58.13.36.00				ø14 mm	Superior / Top	
438.58.16.08.00				ø14 mm	Trasera / Rear	
438.68.13.04.02*	BTVC-DT 2 asas <i>BTVC-DT 2 handles</i>	910 A	Tripolar <i>Three pole</i>	Tuerca M12 inox. insertada <i>M12 inserted nut</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-3 g Tr
438.68.13.36.00				ø14 mm	Superior / Top	
438.68.16.08.00				ø14 mm	Trasera / Rear	
438.78.13.04.02*	BTVC-DT 1 asa <i>BTVC-DT 1 handle</i>	910 A	Tripolar <i>Three pole</i>	Tuerca M12 inox. insertada <i>M12 inserted nut</i>	Superior / Inferior reversible <i>Top / Bottom reversible</i>	NH-3 g Tr
438.78.13.36.00				ø14 mm ø14 mm	Superior / Top	
438.78.16.08.00					Trasera / Rear	

\* Con tapa de conexiones / *With connection cover*

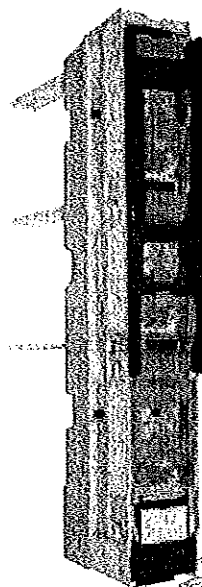
185 mm



BTVC STANDARD



BTVC-DT, 2 ASAS, ACOMETIDA SUPERIOR  
 BTVC-DT, 2 HANDLES, TOP CONNECTION



BTVC-DT, 1 ASA, ACOMETIDA TRASERA  
 BTVC-DT, 1 HANDLE, REAR CONNECTION

ВЪРНО С  
 ИЗПЪЛНЕНИЕ

Terminales código XX / *Terminals XX Code: P. 60*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 154-155*  
 Planos / *Dimension drawing: P. 67-68*



2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors TRIVER\**

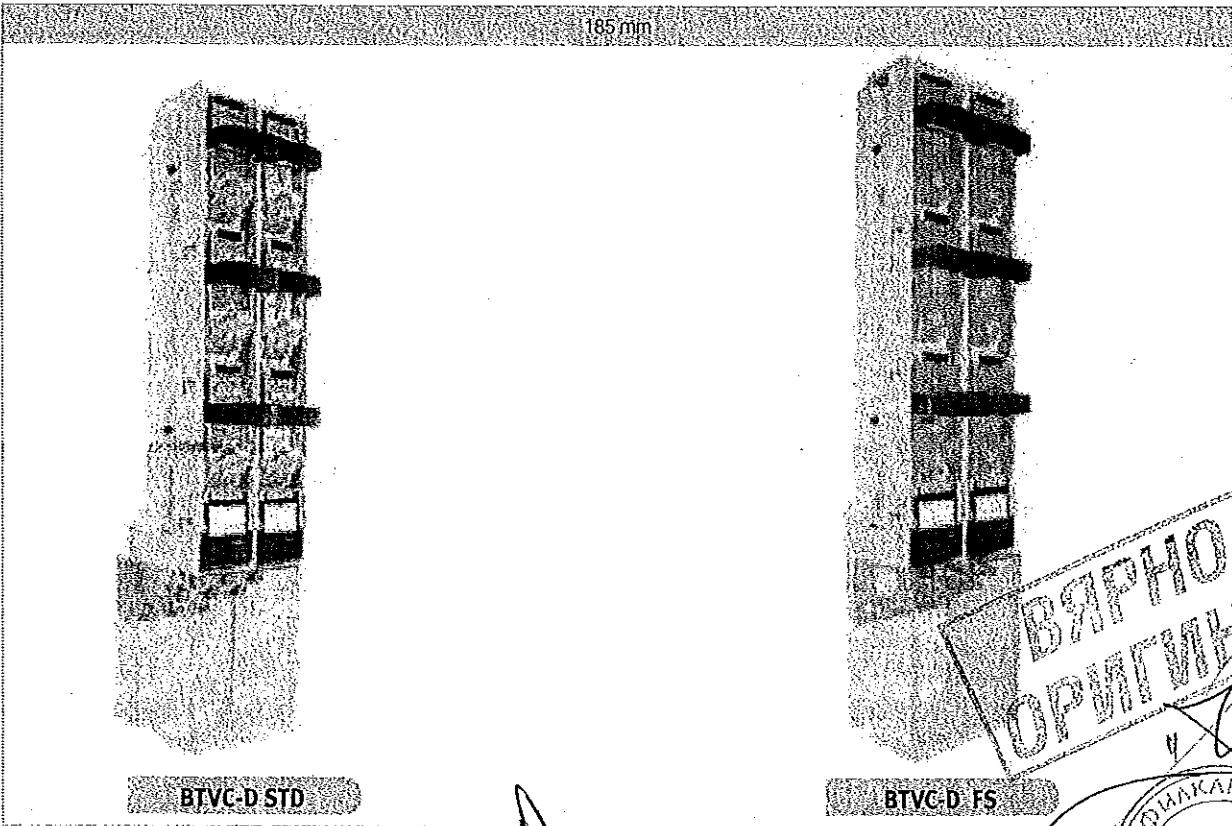
**Gama / Range**

**Tipo 438 bases dobles, BTVC-D, NH-2/3, 800 / 1260 A**

438

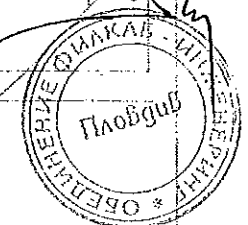
*Type 438 double fuse switches, BTVC-D, NH-2/3, 800/1260 A*

Referencia <i>Reference</i>	Tipo <i>Type</i>	Forma / Ancho <i>Form / Depth</i>	Intensidad <i>Current</i>	Distancia entre BTVC <i>Fuse switch distance (mm)</i>	Terminales <i>Terminal type</i>	Conexiones <i>Connections</i>	Fusible <i>Fuse-link</i>
438.54.70.XX.YY	BTVC-D	STD	800 A	100	Tornillo M12 Tornillo M12 inoxidable Tuercas M12 inoxidable M-12 bolt M-12 bolt stainless steel M-12 nut stainless steel	Superior / Inferior <i>Top / Bottom reversible</i>	NH-2
438.54.71.XX.YY				105			
438.54.72.XX.YY				110			
438.54.84.XX.YY	BTVC-D	FS	800 A	100	Tornillo M12 Tornillo M12 inoxidable Tuercas M12 inoxidable M-12 bolt M-12 bolt stainless steel M-12 nut stainless steel	Superior / Inferior <i>Top / Bottom reversible</i>	NH-2
438.54.82.XX.YY				110			
438.56.70.XX.YY				100			
438.56.71.XX.YY	BTVC-D	STD	1260 A	105	Tornillo M12 Tornillo M12 inoxidable Tuercas M12 inoxidable M-12 bolt M-12 bolt stainless steel M-12 nut stainless steel	Superior / Inferior <i>Top / Bottom reversible</i>	NH-3
438.56.72.XX.YY				110			
438.56.84.XX.YY				100			
438.56.82.XX.YY	BTVC-D	FS	1260 A	110		Superior / Inferior <i>Top / Bottom reversible</i>	NH-3



Terminales código XX / *Terminals XX Code: P. 60*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 154-155*  
 Planos / *Dimension drawing: P. 69*



**2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors TRIVER\**

**Gama / Range**

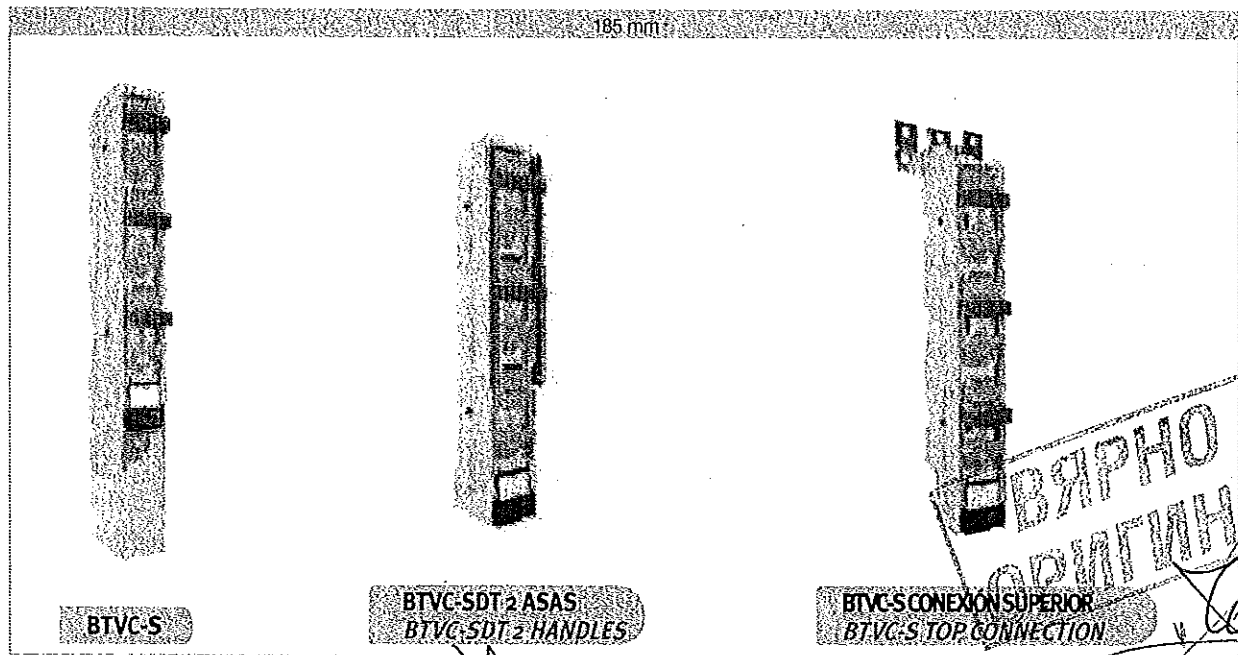
**Tipo 438 Bases de seccionamiento, BTVC-S, BTVC-S, 400 / 630 / 1000 A**

438

*Type 438 Disconnectors, BTVC-S, 400 / 630 / 1000 A*

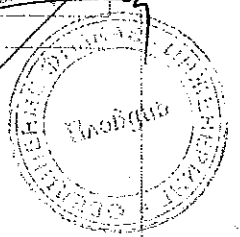
Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Disconnection</i>	Terminales <i>Terminal type</i>	Conexiones <i>Connections</i>	Cuchillas de Seccionamiento <i>Solid Links</i>
438.52.12.XX.02*	BTVC-S	400 A	Unipolar <i>One pole</i>	Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-2
438.53.12.XX.02*		630 A		Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.55.12.04.02*		1000 A		Tuerca inoxidable M12 <i>M12 inserted nut stainless steel</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.55.12.36.00		1000 A		ø14 mm	Superior / Top	NH-3
438.62.12.XX.02*	BTVC-SDT 2 asas <i>BTVC-SDT 2 handles</i>	400 A	Tripolar <i>Three pole</i>	Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-2
438.63.12.XX.02*		630 A		Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.65.12.04.02*		1000 A		Tuerca inoxidable M12 <i>M12 inserted nut stainless steel</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.65.12.36.00		1000 A		ø14 mm	Superior / Top	NH-3
438.72.12.XX.02*	BTVC-SDT 1 asa <i>BTVC-SDT 1 handle</i>	400 A	Tripolar <i>Three pole</i>	Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-2
438.73.12.XX.02*		630 A		Terminales código XX <i>XX Code Terminal</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.75.12.04.02*		1000 A		Tuerca inoxidable M12 <i>M12 inserted nut stainless steel</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.75.12.36.00		1000 A		ø14 mm	Superior / Top	NH-3

\* Con tapa de conexiones / *With connection cover*



Terminales código XX / *Terminals XX Code: P. 60*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 156-157*  
 Planos y esquemas eléctricos: P. 70-71  
*Dimension drawing and wiring diagrams: P. 70-71*





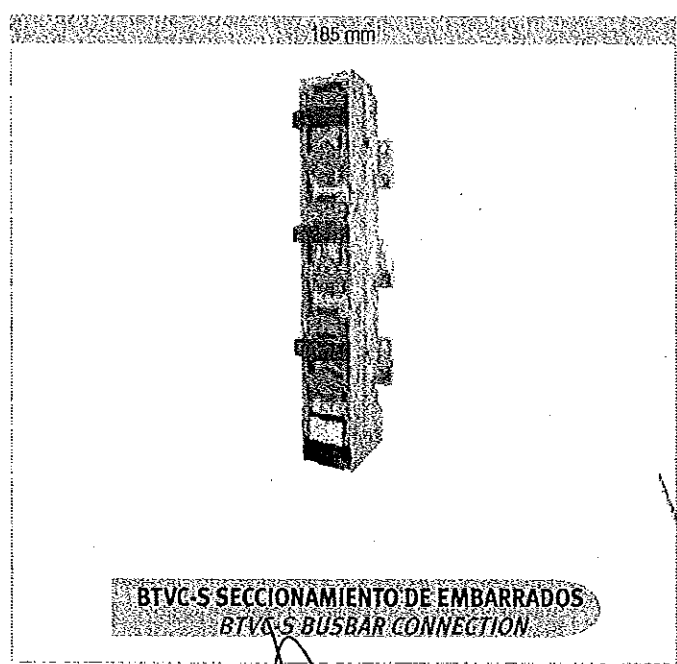
**2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER®**  
*Vertical design fuse switches and disconnectors - TRIVER®*

**Gama / Range**

**438 Tipo 438 Bases de seccionamiento, BTVC-S, 400/630/1000 A seccionamiento de embarrados**  
*Type 438 Disconnectors, BTVC-S, 400 / 630 / 1000 A busbar connection*

Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Desconexión <i>Disconnection</i>	Terminales <i>Terminal type</i>	Conexiones <i>Connections</i>	Cuchillas de seccionamiento <i>Solid Link</i>
438.52.65.08.00	BTVC-S	400 A	Unipolar <i>One pole</i>	ø14 mm	Seccionamiento de embarrado <i>Busbar connection</i>	NH-2
438.53.65.08.00		630 A				NH-3
438.55.65.08.00		1000 A				NH-3
438.62.65.08.00	BTVC-SDT 2 asas <i>BTVC-SDT</i> 2 handles	400 A	Tripolar <i>Three pole</i>	ø14 mm	Seccionamiento de embarrado <i>Busbar connection</i>	NH-2
438.63.65.08.00		630 A				NH-3
438.65.65.08.00		1000 A				NH-3
438.72.65.08.00	BTVC-SDT 1 asa <i>BTVC-SDT</i> 1 handle	400 A	Tripolar <i>Three pole</i>	ø14 mm	Seccionamiento de embarrado <i>Busbar connection</i>	NH-2
438.73.65.08.00		630 A				NH-3
438.75.65.08.00		1000 A				NH-3

*[Handwritten signature]*



**ВЯРНО С  
ОРИГИНАЛА**

*[Handwritten signature]*

Terminales código XX / *Terminals XX Code: P. 60*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 156-157*  
 Planos y esquemas eléctricos: P. 71  
*Dimension drawing and wiring diagrams: P. 71*

**2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER®**  
*Vertical design fuse switches and disconnectors -TRIVER®*

**Gama / Range**

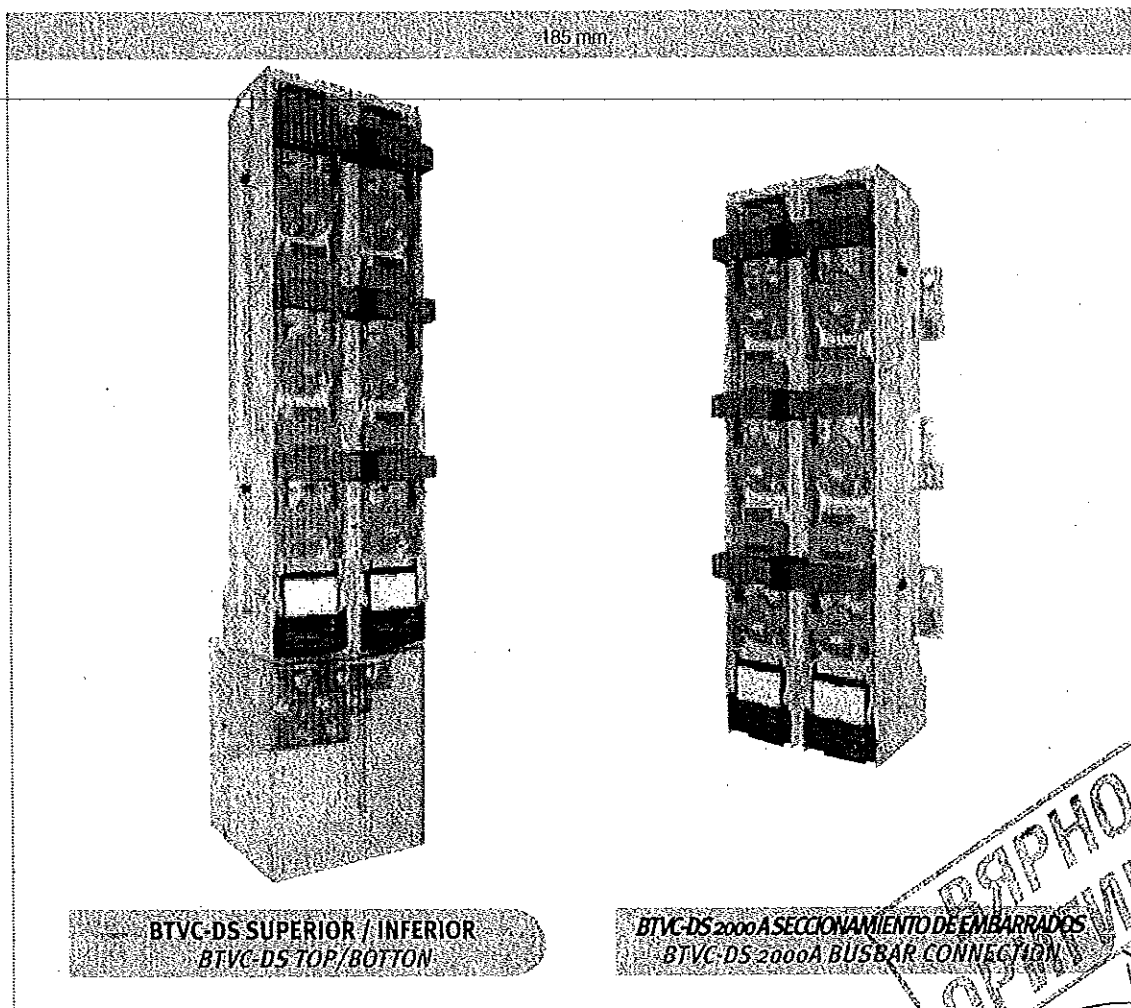
**Tipo 438 Bases de seccionamiento dobles, BTVC-DS, 2000 A**

438

*Type 438 NH-Double Disconnectors, BTVC-DS, 2000 A*

Referencia <i>Reference</i>	Tipo <i>Type</i>	Intensidad <i>Current</i>	Distancia entre BTVC (mm) <i>Fuse switch distance (mm)</i>	Terminales <i>Terminal type</i>	Conexiones <i>Connections</i>	Cuchillas de Seccionamiento <i>Solid Link</i>
438.57.70.04.02*	BTVC-DS	2000 A	100	Tuerca M12 inoxidable <i>M12 inserted nut stainless steel</i>	Superior / Inferior <i>Top / Bottom</i>	NH-3
438.57.71.04.02*			105			
438.57.13.07.02			110	2 x M14 <i>2 x M14</i>		
438.57.80.04.00	BTVC-DS	2000 A	100	Tuerca M12 inoxidable <i>M12 inserted nut stainless steel</i>	Seccionamiento de embarrado <i>Busbar connection</i>	NH-3

\* Con tapa de conexiones / *With connection cover*

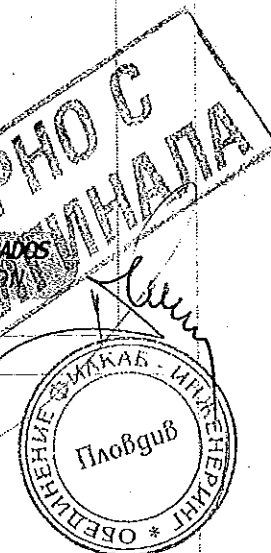


**BTVC-DS SUPERIOR / INFERIOR**  
*BTVC-DS TOP / BOTTOM*

**BTVC-DS 2000A SECCIONAMIENTO DE EMBARRADOS**  
*BTVC-DS 2000A BUSBAR CONNECTION*

Terminales código XX / *Terminals XX Code: P. 60*  
 Accesorios código YY / *Accessories YY Code: P. 61-63*

Datos Técnicos / *Technical Data: P. 156-157*  
 Planos y esquemas eléctricos: P. 72  
 Dimension drawing and wiring diagrams: P. 72



2

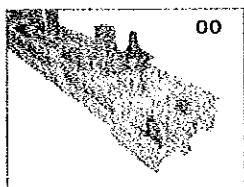
**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER®**

*Vertical design fuse switches and disconnectors - TRIVER®*

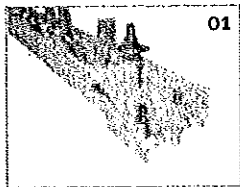
438

Terminales Código XX BTVC / BTVC-DT & BTVC / BTVC-DT acometida lateral, NH-1/2/3

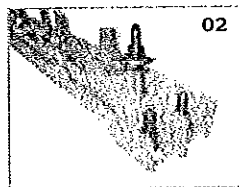
Terminals XX Code NH fuse switches BTVC/BTVC -DT & BTVC/BTVC -DT lateral input, NH -1/2/3



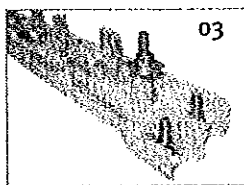
**TORNILLO M10**  
*M10 BOLT*



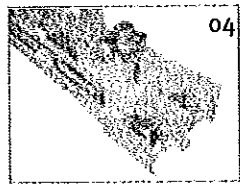
**TORNILLO M10 INOXIDABLE**  
*M10 BOLT STAINLESS STEEL*



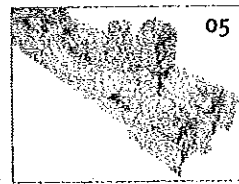
**TORNILLO M12**  
*M12 BOLT*



**TORNILLO M12 INOXIDABLE**  
*M12 BOLT STAINLESS STEEL*

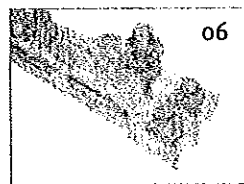


**TUERCA M12 INOXIDABLE**  
*M12 NUT STAINLESS STEEL*



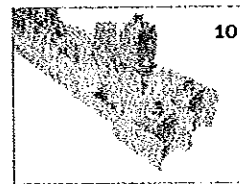
**TERMINAL V REVERSIBLE CON PIEZA DE PRESION**  
*V-TERMINAL WITH REVERSIBLE PRESSURE PAD*

	rm	re	sm	se
mm	50-185	70-240	70-240	95-300
Nm	25			



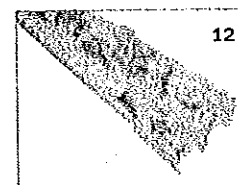
**TERMINAL BIMETÁLICO**  
*BIMETALLIC TERMINAL*

	rm	re	sm	se
mm	35-70	50	35-150	50-185
Nm	32			



**TERMINAL V CON TORNILLO DE ROTURA CONTROLADA**  
*V-TERMINAL WITH SHEAR HEAD SCREW*

	rm	re	sm	se
mm	50-185	70-240	70-240	95-300
Nm	25			



**PLETINA PARA TERMINAL V (SIN TERMINAL)**  
*V SHAPED OUTGOING PLATE WITHOUT V TERMINAL*



**TERMINAL V**  
*V-TERMINAL*

	rm	re	sm	se
mm	35-70	35-50	50-185	50-240
Nm	25			



**TERMINAL V DE ACERO**  
*STEEL V TERMINAL*

	rm	re	sm	se
mm	35-185	35-150	50-240	50-300
Nm	35			



**TERMINAL V DOBLE**  
*DOUBLE V TERMINAL*

	rm	re	sm	se
mm	50-185	70-240	50-185	70-240
Nm	25			

Para otros terminales o secciones de cable consultar código  
*For other options or other cable sections consult code*

ВЯЖО С  
МЕДИКАЛА



2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

438

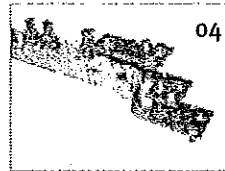
**Terminales Código XX, para bases especiales**  
*Terminals XX Code, for special fuse switches*

**BTVC / BTVC-DT salida lateral**  
*BTVC / BTVC-DT lateral output*

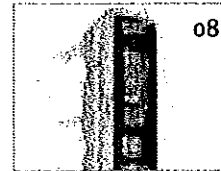


**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*

**BTVC / BTVC-DT 910 A**



**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*

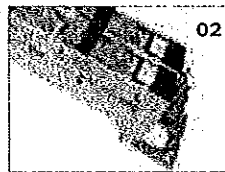


**Ø 14 ACOMETIDA TRASERA**  
*Ø 14 REAR PLATE*

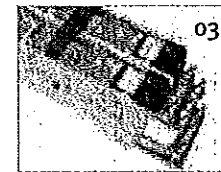


**Ø 14 ACOMETIDA SUPERIOR**  
*Ø 14 TOP CONNECTION*

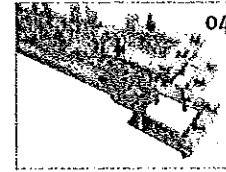
**BTVC-D 800 / 1260 A**



**TORNILLO M 12**  
*M12 BOLT*



**TORNILLO M12 INOXIDABLE**  
*M12 BOLT STAINLESS STEEL*



**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*

438

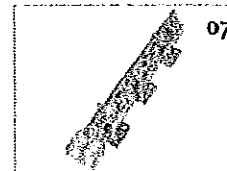
**Terminales Código XX, Bases de seccionamiento BTVC-S / BTVC - DS**  
*Terminal XX Code, BTVC-S / BTVC-DS Disconnectors*

**BTVC-S 1000 A**

**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*



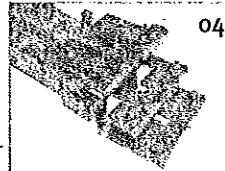
**BTVC-S 1000 A seccionamiento de embarrados**  
*BTVC-S 1000 A busbar connection*



**DIAMETRO 14 MM**  
*14 MM HOLE DIAMETER*

**BTVC-DS 2000 A**

**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*



**BTVC-DS 2000 A seccionamiento de embarrados**  
*BTVC-DS 2000 A busbar connection*

**TUERCA M 12 INOXIDABLE**  
*M12 INSERTED NUT STAINLESS STEEL*

**TORNILLO M 14**  
*M14 BOLT*



*[Handwritten signature]*

*[Handwritten signature]*

OPREDELNIY KONTROL  
 ПРОВЕРКА  
 ОБЪЕДИНЕНАТА СИСТЕМА ЗА ПРОВЕРКА И КОНТРОЛ НА КАЧЕСТВОТО

















2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
**Vertical design fuse switches and disconnectors - TRIVER\***

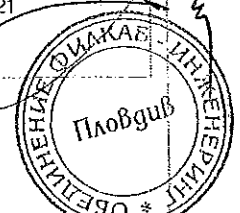
438

Accesorios Código YY NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

Accessories YY code fuse switches NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

Artículo Item	Descripción Description	Referencia Reference	Código YY YY Code
			00= Sin accesorios 00= No Accessories
	Indicador luminoso de fusión (ILF) Blown fuse indicator		01
	Tapa de conexiones para NH-1/2/3 BTVC y BTVC-DT / BTVC-S 400 / 630A Connection cover for NH-1/2/3 BTVC & BTVC-DT / BTVC-S 400 / 630A	4380425	
	Tapa de conexiones para BTVC 910 A y terminales salida superior Connection cover for BTVC 910 A and top outgoing terminals	42804103	
	Tapa de conexiones para BTVC-S 1000A Connection cover for BTVC-S 1000A	42801027	02
	Tapa de conexiones para BTVC doble y BTVC-DS 2000 A (100mm) Connection cover for Double BTVC-D and BTVC-DS 2000 A (100mm)	STD: 42801028 FS: 42804100	
	Tapa de conexiones para BTVC doble y BTVC-DS 2000 A (105mm) Connection cover for Double BTVC-D (100mm) and BTVC-DS 2000 A (105mm)	STD: 42801029 FS: 42804100	
	Tapa de conexiones para BTVC-D (110 mm) Connection cover for Double BTVC-D (110 mm)	STD: 42801030 FS: 4280485	
	Código 01 + código 02 / Code 01 + code 02		04
Artículo Item	Descripción Description	Referencia Reference	
	Tapa de conexiones corta para NH-1/2/3 BTVC y BTVC-DT Short connection cover for NH-1/2/3 BTVC & BTVC-DT	4280410	
	Salida auxiliar protegida Slip on fuse	4280810	
	Maletín medida temporal (con tapas) para NH-1 BTVC y BTVC-DT Temporary metering set suitcase (with fuse holders) for NH-1 BTVC & BTVC-DT	42808119	
	Maletín medida temporal (con tapas) para NH-2 BTVC y BTVC-DT Temporary metering set suitcase (with fuse holders) for NH-2 BTVC & BTVC-DT	42808100	
	Maletín medida temporal (con tapas) para NH-3 BTVC y BTVC-DT Temporary metering set suitcase (with fuse holders) for NH-3 BTVC & BTVC-DT	42808102	
	Protección frontal de embarrados: ancho 100mm con escuadras Front cover for busbars: 100mm width with fixing brackets	4150804	
	Conjunto protección lateral izquierdo / derecho Front cover for busbars: 100mm width	4150807	
	Conjunto protección lateral izquierdo / derecho Protecting polyester strip left/right angle	4150808S	
	Micro-interruptor señalización abierto / cerrado Micro-switch (open / closed indicator)	1013406	
	Base con control electrónico de fusión para BTVC y BTVC-DT F5 fuse switch fuse supervision control for BTVC & BTVC-DT	Referencia estándar: F5 Standard fuse switch reference: F5	
	Tapa de conexiones con amperímetro para conjunto medida permanente para NH-1/2/3 BTVC y BTVC-DT Top cover with maximeter for permanent metering set for NH-1/2/3 BTVC & BTVC-DT	4280821	

ОРИГИНАЛ  
 РЕФЕРЕНЦИЯ  
 1013406  
 Standard fuse switch reference: F5  
 4280821



**2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER<sup>+</sup>**  
**Vertical design fuse switches and disconnectors - TRIVER<sup>+</sup>**

438

Accesorios NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

Accessories fuse switches NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

Artículo Item	Descripción Description	Referencia Reference	
	Escuadra fijación protección frontal para NH-1/2/3 BTVC & BTVC-DT <i>Fixing bracket for front cover for NH-1/2/3 BTVC &amp; BTVC-DT</i>	4150420	
	Separador central para terminales de salida: 80 mm <i>Central barrier for outgoing terminals: 80 mm</i>	4150426	
	Separador central para terminales de salida: 120 mm <i>Central barrier for outgoing terminals: 120 mm</i>		
	Kit 3 pletinas salida para 3 tornillos M12 inoxidable por fase <i>Set of 3 adaptor plates to connect 3 cables lugs M12 stainless steel per phase</i>	4150126	
	Kit 3 pletinas salida para 3 terminales en "V" por fase <i>Set of 3 adaptor plates to connect 3 V-terminals per phase</i>	4150107	
	Caperuza protección terminal "V" <i>Insulating cover for V-terminal</i>	4380454	
	Dispositivo de puesta a tierra NH-1/2/3 <i>Earthing device NH-1/2/3</i>	42808104	
	Conjunto medida temporal (sin tapas) para BTVC y BTVC-DT <i>Temporary metering set (without fuse holders) for BTVC &amp; BTVC-DT</i>	NH-1	42808118
		NH-2	42808111
		NH-3	42808112
	Conjunto medida permanente para BTVC y BTVC-DT <i>3 phase permanent metering set for BTVC &amp; BTVC-DT</i>	250 A	42808105
		400 A	42808108
		630 A	42808109
	Cuchilla de seccionamiento NH-1 <i>Solid link for NH-1</i>		2400302
			2400402
			2400502
	Garra de fijación (3 unidades) <i>Hook-on clamp (set of 3)</i>	4150820	
	Pletinas de adaptación para conectar dos cables de M12 inoxidable por fase <i>Adaptor plates to connect 2 cable lugs M12 stainless steel per phase</i>	4150812	
	Pletinas en "V" para neutro <i>Plate for "V" Neutral link</i>	4280538	
	Pletinas plana en "V" para neutro <i>Flat plate for "V" Neutral link</i>	4280537	
	Kit para doble desconexión unipolar en BTVC-D (2 piezas x 3 polos = 6 piezas) <i>Kit for double one pole switching for BTVC-D (2 pieces x 3 poles = 6 pieces)</i>	100mm	4380801
		105mm	4380802
		110mm	4380803
	Tarjetero para terminal V doble. Referencia del accesorio sin marcado. Para tarjetero con marcado consultar referencia. <i>Card holder for Double V-Terminals. Accessoria reference without marking. For Card holder including marking, consult reference</i>	4280480	

*[Handwritten signature]*

Stamp: ВЪРХНО СЪОБЩЕСТВЕНА КОПИЛОВАНА

Stamp: ООД ПРОНУТЕК

Stamp: 4280480

Stamp: 4380801

Stamp: 4380802

Stamp: 4380803

Stamp: 4280480

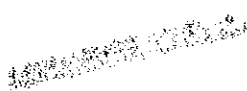

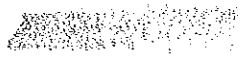
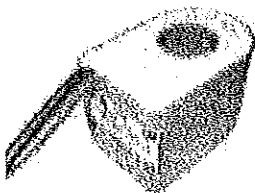

2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

438

Accessories NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

Accessories fuse switches NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000A

Artículo Item	Descripción Description	Referencia Reference	
	Soporte de embarrado 185mm, tripolar para embarrados perforados <i>Busbar support 185mm, 3 pole for drilled flat busbars</i>	4380811	
	Soporte de embarrado universal 185mm, tripolar para embarrado sin perforar 30...120x10mm <i>Universal busbar support 185mm, 3 pole for undrilled flat busbars 30...120 x10 mm</i>	4380812	
	Tapa para la protección del final del embarrado para referencia 4380812 <i>Cover for busbar ends for reference 4380812</i>	4380813	
	Transformador de intensidad para integrar en zócalo. Solo para bases especiales. <i>Current transformer to join in base board. Exclusive for special fuse switches.</i>	200/5, 1...3 VA 0,5 S	Consultar <i>Consult</i>
		300/5, 1...5 VA 0,5 S	Consultar <i>Consult</i>
		400/5, 1...5 VA 0,5 S	Consultar <i>Consult</i>
		600/5, 1...5 VA 0,5 S	Consultar <i>Consult</i>
		1000/5, 1...5 VA 0,5 S	Consultar <i>Consult</i>
	Terminal de conexión para embarrados 30 x 10, y conexión de cables 95-300 mm² <i>Connection terminal for busbars 30 x 10, and cable connection 95-300 mm²</i>	4230812	

*Handwritten signature*

**ВЯРНО С  
ОРИГИНАЛА**

*Handwritten signature*

2

**Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\***  
*Vertical design fuse switches and disconnectors - TRIVER\**

Plano despiece de accesorios, NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

438

Assembly drawing fuse switches NH-1/2/3, 250/400/630 A; BTVC 910 A; BTVC-D 400/630/800/1260 A; BTVC-S 1000-2000 A

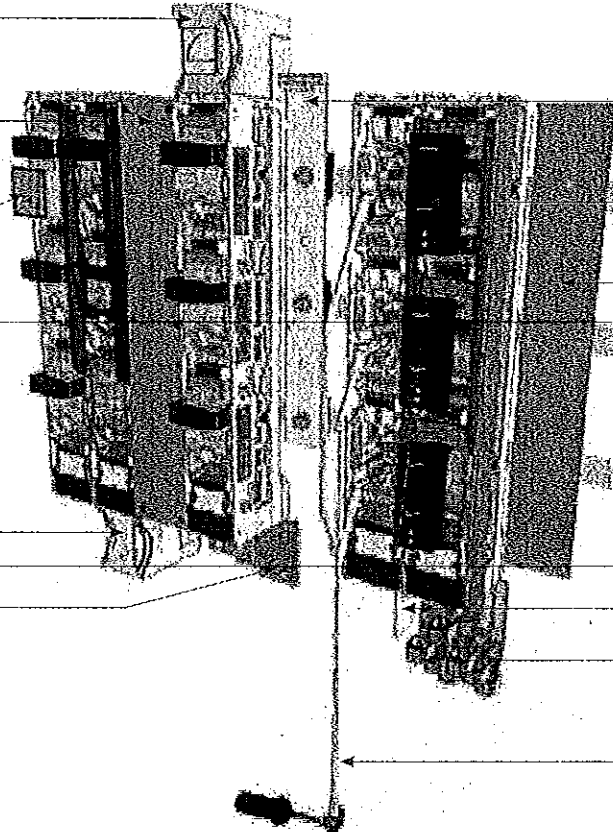
Ref.  
4280821

Ref.  
4150804

Ref.  
42808118  
42808111  
42808112

Ref.  
4380425

Ref.  
4150812



Ref.  
42808105  
42808108  
42808109

Ref.  
4280810

Ref.  
4150807

Ref.  
4150426  
Ref.  
4150107

Ref.  
42808104

Ref. 4280821 Tapa de conexiones con amperímetro para conjunto de medida permanente para NH-1/2/3 BTVC y BTVC-DT  
*Top cover with maximeter for permanent metering set for NH-1/2/3 BTVC & BTVC-DT*

Ref. 4150804 Protección frontal de embarrados: ancho 100mm con escuadras  
*Front cover for busbars: 100 mm width with fixing brackets*

Ref. 42808118 Conjunto medida temporal (sin tapas) para NH-1 BTVC y BTVC-DT  
*Temporary metering set (withouth fuse holders) for NH-1 BTVC & BTVC-DT*

Ref. 42808111 Conjunto medida temporal (sin tapas) para NH-2 BTVC y BTVC-DT  
*Temporary metering set (withouth fuse holders) for NH-2 BTVC & BTVC-DT*

Ref. 42808112 Conjunto medida temporal (sin tapas) para NH-3 BTVC y BTVC-DT  
*Temporary metering set (withouth fuse holders) for NH-3 BTVC & BTVC-DT*

Ref. 4380425 Tapa de conexiones para NH-1/2/3 BTVC y BTVC-DT / BTVC-S 400 / 630 A  
*Connection cover for NH-1/2/3 BTVC & BTVC-DT / BTVC-S 400/630 A*

Ref. 4150812 Pletinas de adaptación para conectar dos cables de M12 inoxidable por fase  
*Adaptor plates to connect 2 cable lugs M12 stainless steel per phase*

Ref. 42808105 Conjunto medida permanente para BTVC y BTVC-DT 250 A  
*3 phase permanent metering set for BTVC & BTVC-DT 250A*

Ref. 42808108 Conjunto medida permanente para BTVC y BTVC-DT 400 A  
*3 phase permanent metering set for BTVC & BTVC-DT 400A*

Ref. 42808109 Conjunto medida permanente para BTVC y BTVC-DT 630 A  
*3 phase permanent metering set for BTVC & BTVC-DT 630A*

Ref. 4280810 Salida auxiliar protegida  
*Slip on fuse*

Ref. 4150807 Protección frontal de embarrados: ancho 100mm fijación al embarrado con tornillos nylon  
*Front cover for busbars: 100 mm width nylon bolts for busbar fixing*

Ref. 4150426 Separador central para terminales de salida  
*Central barrier for outgoing terminals*

Ref. 4150107 Kit 3 pletinas salida para 3 terminales en "V" por fase  
*Set of 3 adaptor plates to connect 3 V terminals per phase*

Ref. 42808104 Dispositivo de puesta a tierra NH-1/2/3  
*Earthing device NH-1/2/3*





## 2 Bases tripolares verticales cerradas y bases de seccionamiento - TRIVER\* Vertical design fuse switches and disconnectors - TRIVER\*

438

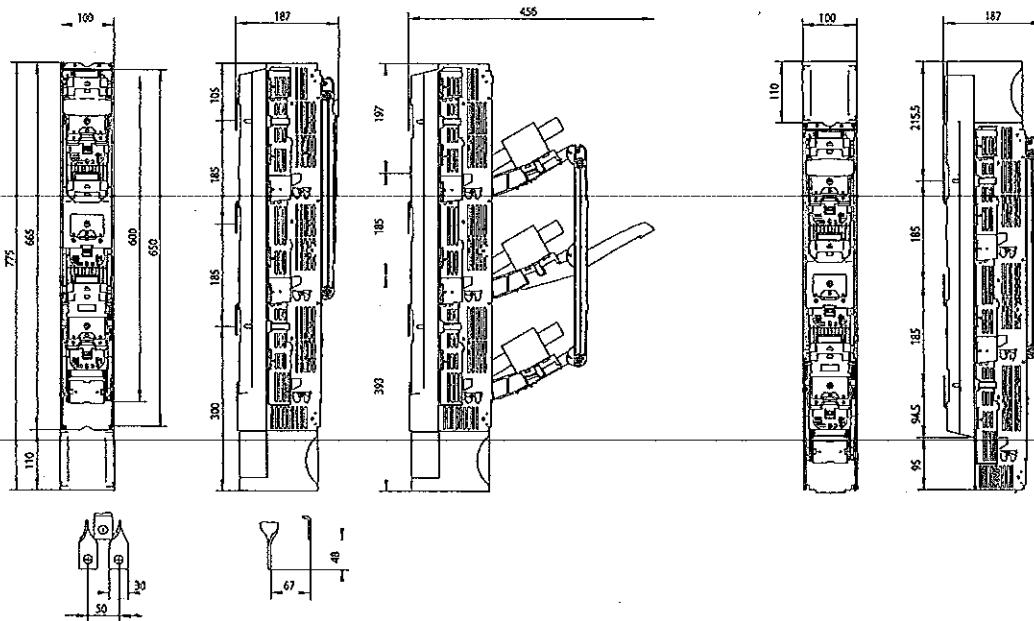
### Planos NH-1/2/3, BTVC

Dimensions fuse switches NH-1/2/3, BTVC

BTVC-DT: asa desconexión tripolar / BTVC-DT: handle 3 pole switching

Conexión inferior / Bottom connection

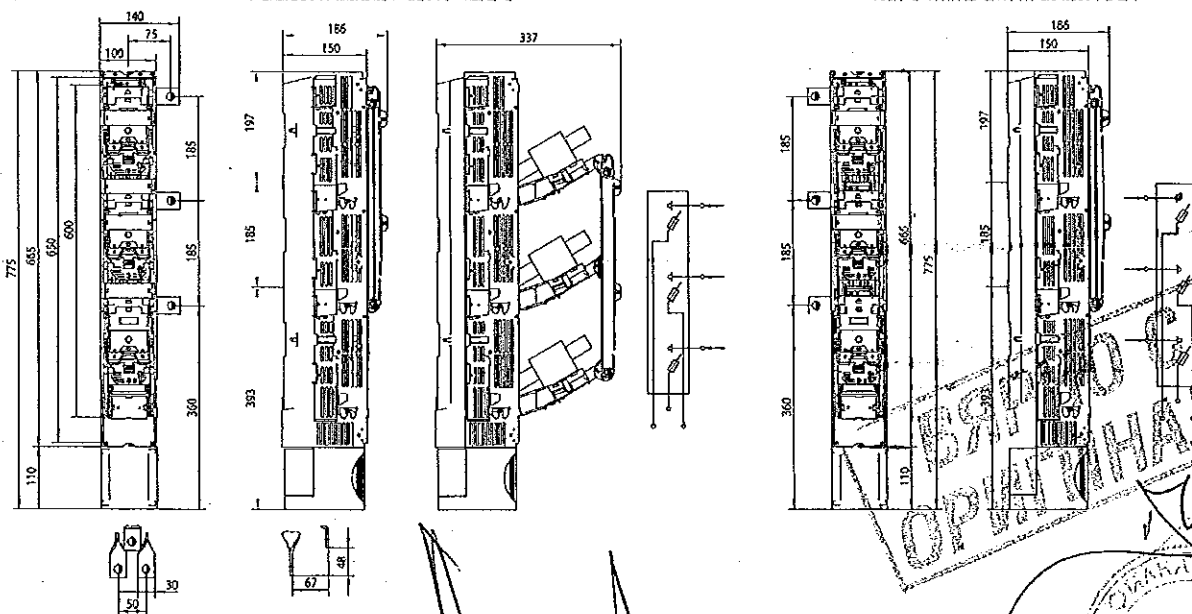
Conexión superior / Top connection



BTVC-DT: acometida lateral / BTVC-DT: lateral input

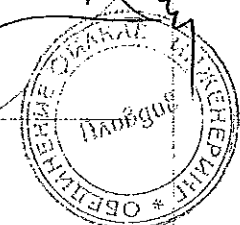
Lateral derecha / Right side

Lateral izquierda / Left side



Gama / Range: P. 51-52

pronufec  
CORLEN TEAM





Accredited by BMWA with GZ: 92714/237-IV/9/00 as test- and inspection body  
and with BGBl. II Nr. 244/2005 as certification body for personnel



AUSTRIAN INSTITUTE  
OF TECHNOLOGY

# Test Report

Project Designation

PERFORMANCE OF  
MAKING AND BREAKING CAPACITY  
AT LOW-VOLTAGE  
FUSE-SWITCH-DISCONNECTORS  
TYPE BTVC 400A  
THREE POLE OPERATED  
(AC-22B at 500V / 400A)

Client

PRONUTEC S.A.  
Parque Empresarial Boroa  
Parcela 2c-1  
E-48340 Amorebieta - VIZCAYA  
SPAIN

Order from / No.

06/2010 / ---

Project Number

2.03.02087.1.0/BTVC400/AC22/500V/400A/3-pole

Test Engineer

Ing. J. Ainetter

Date of issue	22.11.2010
Total number of issues / No.	1 / 1
Number of pages	10
Annex: Number of pages	---

The results relate exclusively to the terms tested.

This report may only be reproduced or published in full, without omissions, alterations or additions.

The reproduction or publishing of extracts from this report require the written approval of the research center.



## Test item

### Identification:

Low-voltage fuse-switch-disconnectors type BTVC 400A, three pole operated

Trademark: pronotec  
Manufacturer: PRONUTEC S.A.  
Size: 2  
Number of poles: 3  
Busbar system: 185mm  
Rated operational voltage: 400V a.c. up to 690V a.c.  
Rated operational current: 400A  
Rated frequency: 50Hz

## Testing location, Period of testing

### Testing location:

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.  
Business Unit Electric Energy Systems  
Power Service Center  
Giefinggasse 2  
1210 Vienna  
AUSTRIA

### Period of testing:

09/2010

## Test(s)

### Test(s) performed:

Performance of making and breaking capacity (AC-22B at 500V / 400A)

### Test standard(s):

IEC 60947-1:2007 (Edition 5.0) and IEC 60947-3:2008 (Edition 3.0)  
EN 60947-1:2007 and EN 60947-3:2009

### Test procedure(s):

CB-Scheme and CCA-Scheme

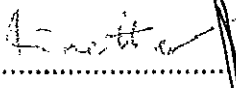
### Possible test case verdicts:

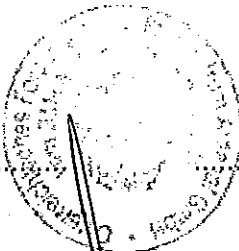
P (Pass): Test object does meet the requirement  
F (Fail): Test object does not meet the requirement  
N (Not applicable): Test case does not apply to the test object

## Result


The low-voltage fuse-switch-disconnectors type BTVC 400A, three pole operated, have passed the performance of making and breaking capacity (AC-22B at 500V / 400A) successfully.

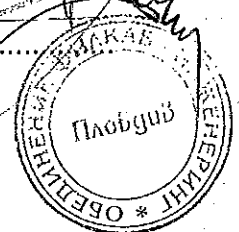
Test Engineer

  
Ing. J. Ainetter

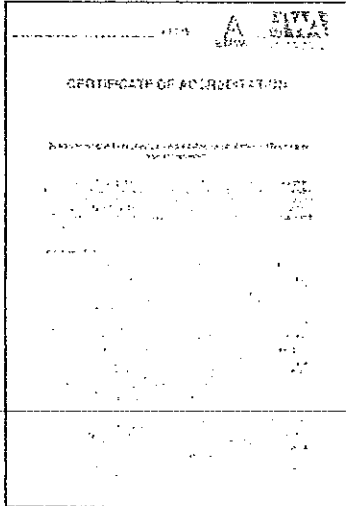


Project Engineer  
technical responsibility

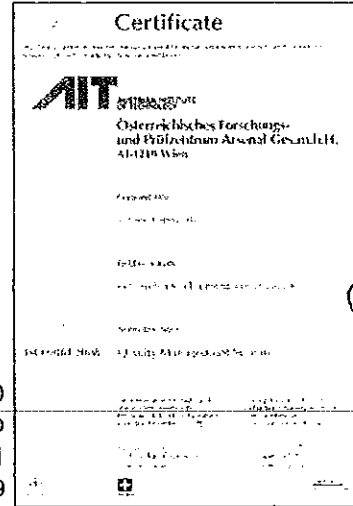
  
Ing. K. Farthofer



**Testing laboratory**



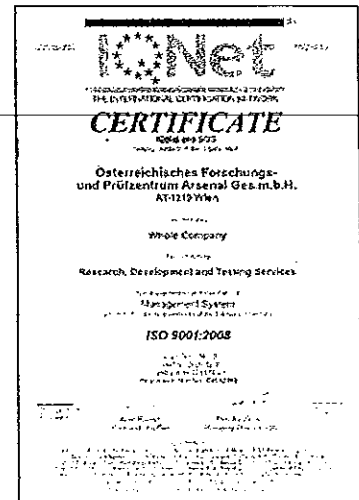
ACCREDITED  
according to  
EN ISO/IEC 17025  
No. BMWA-92.714/0504-1/12/2007



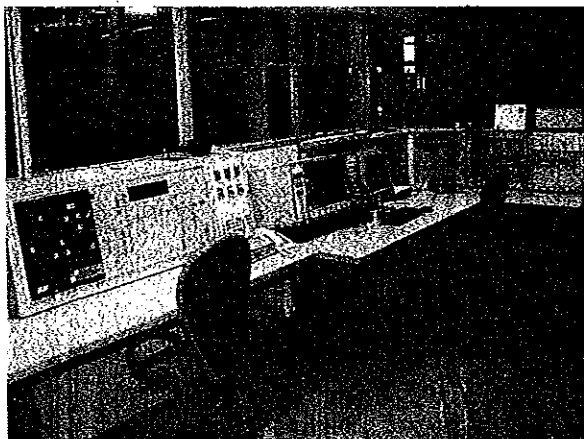
CERTIFICATED  
according to  
ISO 9001  
Reg. No. 12769



RECOGNIZED  
CB TESTING LABORATORY  
under the responsibility of OVE  
as the National Certification Body



**POWER SERVICE CENTER:**



Control station for tests up to 15kA

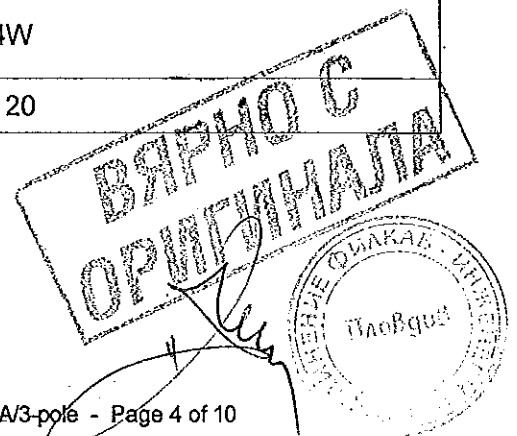


Control station for tests above 15kA

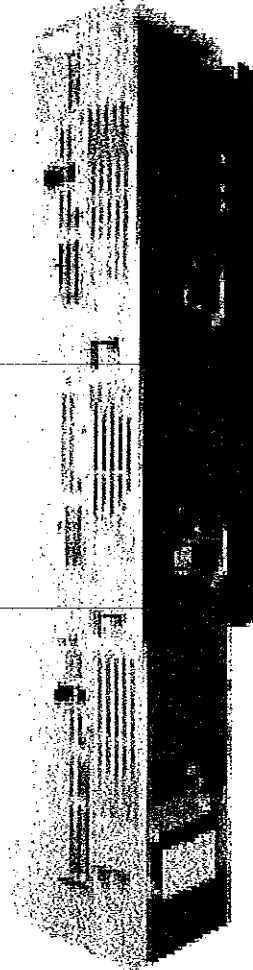


### Technical data and description

Test item	Low-voltage fuse-switch-disconnectors
Trademark	pronutec
Model/Type reference	BTVC 400A
Manufacturer	PRONUTEC S.A.
Place of manufacture	Vizcaya, Spain
Type of operation	Three pole operated
Method of operation	Dependent manual operation
Size	2
Busbar system	185mm
Type of terminals	Bolt terminals M12
Switching positions	ON / OFF
Number of poles	3
Nature of supply	AC
Utilization category	AC-22B
Rated operational voltage	400V a.c. up to 690V a.c.
Rated operational current	400A (up to 500V a.c.) 315A (at 690V a.c.)
Rated frequency	50Hz
Conventional free air thermal current	400A (with 500V fuse-links)
Rated insulation voltage	1000V
Rated impulse withstand voltage	12kV
Rated conditional short-circuit current	80kA (up to 500V a.c.) 50kA (at 690V a.c.)
Kind of protective device	Fuse-links NH2
Maximim power dissipation of the protective device	34W
Degree of protection	IP 20



Picture of test item



ВЯРНО С  
ОРИГИНАЛА



### Test performance / Test values

IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		P
8.3.3.3	Making and breaking capacity		P
	- utilization category.....	AC-22B	-
	- rated operational voltage Ue (V) .....	500	-
	- rated operational current Ie (A) .....	400	-
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue (V).....	L1: - L2: - L3: -	-
	- test current, I = ... x Ie (A) .....	L1: - L2: - L3: -	-
	- power factor.....	L1: - L2: - L3: -	-
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue (V).....	L1: - L2: - L3: -	-
	- test current, I = ... x Ie (A) .....	L1: - L2: - L3: -	-
	- power factor.....	L1: - L2: - L3: -	-
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue (V).....	L1: 526 L2: 528 L3: 526	-
	- test current, I = 3 x Ie (A).....	L1: 1217 L2: 1228 L3: 1212	-
	- power factor / time-constant (ms).....	L1: 0,64 L2: 0,64 L3: 0,64	-
	Number of make/break or make and break operations .....	5	P
	- recovery voltage duration $\geq 50$ ms (ms).....	Permanent	P
	- current duration (ms) .....	240	
	- time interval between operations (s) .....	30	
	Oscillogram.....	1 (5 <sup>th</sup> operation)	

*[Handwritten signature]*

**ВЕРНО С  
КОПИЯМИ**

**ОБЛАСТНОЕ УПРАВЛЕНИЕ  
ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ  
И МЕТРОЛОГИИ**

**Пловдив**





IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz).....:	57,24	-
	- measured oscillatory frequency (kHz).....:	L1: 57,1 L2: 57,1 L3: 57,1	P
	- factor n.....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		-
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V)....:	1400	-
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V).....:	760	-
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole (mA) ..:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA).....:	< 1	P

*[Handwritten signature]*

**ВЯРНО С  
ОРИГИНАЛА**

*[Circular stamp: ОБЕДИНЕНОЕ ФИЛИАЛНО-УПРАВЛЕНИЕ ПЛОВДИВ]*

*[Handwritten signature]*



IEC / EN 60947-3				
Clause	Requirement - Test	Result - Remark		Verdict
8.3.3.6	Temperature-rise verification			P
	- conductor cross-section (mm <sup>2</sup> ).....	240		-
	- test current I <sub>e</sub> (A).....	400		-
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	37	50	P
	Parts which need not be touched during normal operation: non-metallic	45	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.).....	1e		-
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N).....	210		-
	- test force with blocked main contacts (N).....	400		-
	- used method to keep the contact closed.....	Fixed by brazing		-
	During and after the test, open position not indicated.....	No open position indicated		P
	Equipment with locking mean, no locking in the open position while test force is applied.....	No locking in open position		P
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position.....	-		N
	- used method to keep the contact closed.....	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times).....	-		N
	During and after the test, open position not indicated.....	-		N
	Equipment show no damage impairing its normal operation.....	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....	-		N

ВЯРНО С  
ОРИГИНАЛА



IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
8.2.5.2.3	Independent power operation		N
	- main contacts fixed together in the closed position .....	-	N
	- used method to keep the contact closed .....	-	N
	- stored energy of the power operator released (3 times) .....	-	N
	During and after the test, open position not indicated .....	-	N
	Equipment show no damage impairing its normal operation .....	-	N
	Equipment with locking mean, no locking in the open position while test force is applied .....	-	N

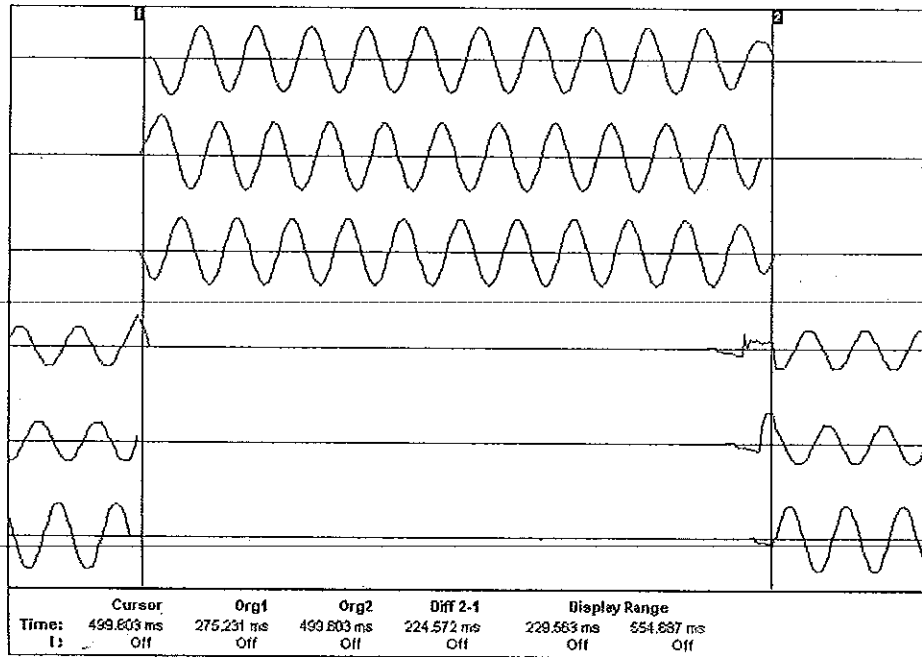
ВАРНО С  
ОРИГИНАЛА

ОБЛАСТНО УПРАВЛЕНИЕ  
ПО ТЕХНИКА  
ПЛОВДИВ

160

### Oscillogram(s)

Oscillogram 1:



*[Handwritten signature]*

**ВЯРНО С  
ОРИГИНАЛА**

ОБРАЗЛОЖЕНИЕ ФИЛКАР - ИНЖЕНЕРИ  
Пловдив

*[Handwritten mark]*

Превод от английски език

**A  
PIZ  
1**

**AIT  
Австрийски технологичен институт**

Акредитиран от Министерството на икономиката и труда, като орган за провеждане на изпитания и проверки, а с Бюлетина на федералните закони II № 244//2005, като орган за сертифициране на персонала.

## ПРОТОКОЛ ОТ ТЕСТ

### Описание на проекта

Експлоатационни характеристики на  
комутационната способност на  
нисковолтовите прекъсвачи с топящ се предпазител  
от типа BTVC 400A  
триполюсен  
(AC-22В при 500 V / 400A)

### Клиент

PRONUTEC S.A.  
Parque Empresarial Boroa  
Parcela 2c-1  
E-48340 Amorebieta - VIZCAYA  
Испания

### Заявка от / №

06/2010 / ---

### Номер на проекта полюсен

2.03.02087.1.0./BTVC400/AC22/500V/400A/3-

Дата на издаване	22.11.2010 г
Общ брой издания / №	1 / 1
Брой страници	10
Приложение: брой страници	--

Резултатите се отнасят изключително за тестваните обекти.

Настоящият протокол може да бъде възпроизвеждан или публикуван като цяло, без пропуски, промени или добавки.

Възпроизвеждането или публикуването на извлечения от настоящия протокол изискват писменото одобрение на изследователския център.



## Изследван образец

### Идентификация:

Нисковолтови прекъсвачи с топящ се предпазител от типа BTVC 400A, триполюсни

Търговска марка:	pronutec
Производител:	PRONUTEC S.A.
Размер:	2
Брой полюси:	3
Система на сглобяемите шини:	185 mm
Номинално напрежение при функциониране:	400V а.с. до 690V а.с.
Номинален ток при функциониране:	400A
Номинална честота:	50 Hz

**Място, на което се провеждат тестовете, Период на провеждане на тестовете**

### Място, на което се провеждат тестовете

Osterreichisches Forschung- und Prüfzentrum Arsenal Ges.m.b.H

Структурно подразделение на компания Електроенергийна система

Енергиен център

Giefinggasse 2

1210 Виена

АВСТРИЯ

### Период на провеждане на тестовете

Септември 2010 г.

## Тест(ове)

### Изпълнен(и) тест(ове):

Експлоатационни характеристики по комутационна способност (АС-22В при 500 V / 400A)

### Стандарт(и), приложим(и) при тестовете

IEC 60947-1:2007 (Издание 5.0) и IEC 60947-3:2008 (Издание 3.0)

EN 60947-1:2007 и EN 60947-3:2009

### Процедури на тестване

СВ- схема и ССА-схема

### Възможни заключения при тестовете:

P (успешен)	Изследваният образец отговаря на изискванията
F (неуспешен)	Изследваният образец не отговаря на изискванията
N (не се използва)	Не се отнася за тествания образец

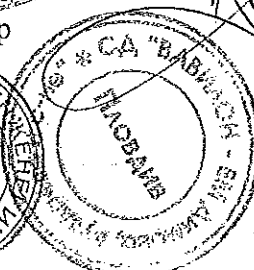
## Резултат

Нисковолтовите триполюсни прекъсвачи с топящ се предпазител от типа BTVC 400A успешно преминаха теста за експлоатационните характеристики на комутационна способност (АС-22В при 500 V / 400A)

Инженер, провел теста  
/подпис не се чете/  
инж. Дж. Йнетер

Проектен инженер, технически отговорник  
/подпис не се чете/  
инж. К. Фархофер

Кръгъл печат



AIT

Австрийски технологичен институт

Лаборатория за провеждане на изпитанията  
АКРЕДИТИРАНА на основание EN ISO/IEC 17025  
№ VMWA-92.714/0504-I/12/2007

СЕРТИФИЦИРАНА на основание ISO 9001  
Регистрационен № 12769

ПРИЗНАТА  
ТРАНС ГРАНИЧНА ЛАБОРАТОРИЯ ЗА ПРОВЕЖДАНЕ НА  
ИЗПИТАНИЯ  
Под контрола на OVE като Националния орган за издаване на сертификати

ЦЕНТЪР ЗА ЕЛЕКТРОСНАБДЯВАНЕ:

Контролна станция за тестове за 15 kA      Контролна станция за тестове над 15 kA

Технически данни и описание

Обект на теста	Нисковолтови прекъсвачи с топящ се предпазител
Търговска марка	Pronutec
Модел / тип	BTVC 400A
Производител	PRONUTEC S.A.
Място на производство	Vizcaya, Испания
Вид режим на работа	Триполюсен
Метод на работа	Подчинена работа в ръчен режим
Размер	2
Система на събирателна шина	185 mm
Вид на терминалите	Клеми, закрепени с болтове M12
Положения на превключване	ON/OFF (Включено/Изключено)
Брой полюси	3
Характер на захранването	АС
Категория потребители	АС-22В
Номинално напрежение при функциониране	400V а.с. до 690V а.с.
Номинален ток при функциониране	400A (до 500V а.с.) 315A (при 690V а.с.)
Номинална честота	50 Hz
Конвенционален поток от нагрял въздух	400A (с 500V топящ се предпазител)
Номинално напрежение на изолацията	1000V
Максимално допустимо импулсно напрежение	12kV
Номинален ток при късо съединение	80kA (до 500V а.с.) 50kA (при 690V а.с.)

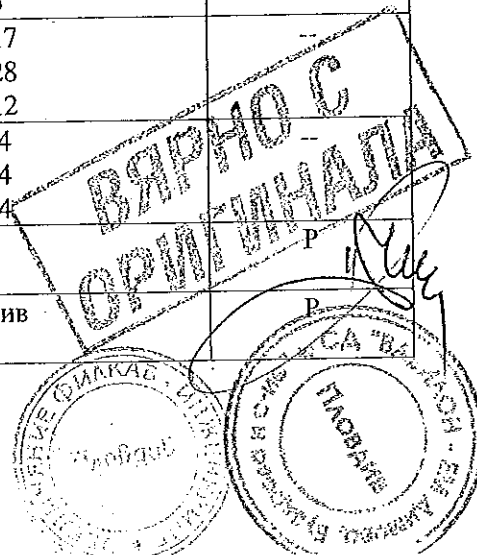


Тип на защитното устройство	Топящ се предпазител NH2
Максимална разсейвана мощност при защитното устройство	34W
Степен на защита	IP 20

### Снимка на тествания обект

### Изпълнение на тестовете / стойности, измерени при тестовете

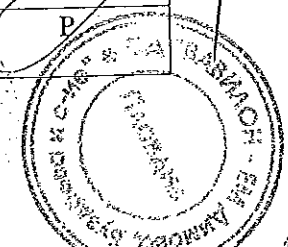
IEC / EN 60947 - 3			
Клауза	Изискване - тест	Резултат-забележка	Заклучение
8.3.3	ПОСЛЕДОВАТЕЛНОСТ ОТ ТЕСТОВЕ I - ХАРАКТЕРИСТИКИ		P
8.3.3.3	Комутиционна способност		P
	- категория на потребителите	AC-22B	--
	- номинално напрежение при функциониране Ue (V)	500	--
	- номинален ток при функциониране Ie (A)	400	--
	Условия при включване на веригата, само за AC-23A и AC-23B		N
	- напрежение при теста, U = 1,05 Ue (V)	L1: - L2: - L3: -	---
	- ток при теста, I = ... x Ie (A)	L1: - L2: - L3: -	--
	- коефициент на мощността	L1: - L2: - L3: -	--
	Условия при изключване на веригата, само AC-23A и AC-23B		N
	- напрежение при теста, U = 1,05 Ue (V)	L1: - L2: - L3: -	--
	- ток при теста, I = ... x Ie (A)	L1: - L2: - L3: -	--
	- коефициент на мощността	L1: - L2: - L3: -	--
	Условия при включване / изключване, различни от AC-23A и AC-23B		P
	- напрежение при теста, U = 1,05 Ue (V)	L1: 526 L2: 528 L3: 526	--
	- ток при теста, I = 3 x Ie (A)	L1: 1217 L2: 1228 L3: 1212	--
	- коефициент на мощността / времева константа (ms)	L1: 0,64 L2: 0,64 L3: 0,64	--
	Брой включвания-изключвания или брой операции на превключване	5	P
	- период на възстановяване на напрежението ≥ 50 ms (ms)	устойчив	P





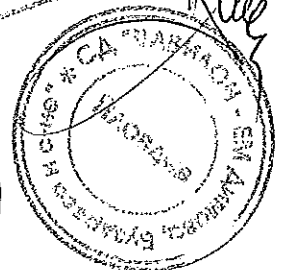
	- продължителност на импулса (ms)	240	--
	- времеви интервал между операциите (s)	30	--
	Осцилограма	1 (5-та операция)	--
	Характеристики при възстановяване на напрежението при преходен процес, само за АС-23А и АС-23В		P
	- честота на колебанията (kHz)	57,24	--
	- измерена честота на колебанията (kHz)	L1: 57,1 L2: 57,1 L3: 57,1	P
	- коефициент n	L1: 1,1 L2: 1,1 L2: 1,1	P
8.3.3.3.5	Поведение на оборудването при тестване по комутационната способност		P
	Тестът е извършен без:		--
	- опасност за оператора		P
	- без да поврежда съседното оборудване		P
	Без постоянно искрене		P
	Без прескачане на искра между полюсите и полюсите и рамката		P
	Без стопяване на предпазителя на регистриращата верига		P
8.3.3.3.6	Състояние на оборудването след тестване по комутационната способност		P
	Непосредствено след теста оборудването трябва да работи задоволително		P
	- предвидената сила за отваряне не следва да надвишава силата при теста, посочена в 8.2.5.2 и таблица 8		P
	- оборудването е в състояние да пренася номиналния ток след нормална операция на затваряне		P
8.3.3.4	Проверка на диелектрика		P
	Напрежение при теста $2U_e$ с минимум от 1000V- (V)	1400	--
	Не се регистрира искрене и пробив		P
8.3.3.5	Токови загуби		P
	Напрежение при теста $1,1 U_e$ (V)	760	--
	Токови загуби (категории потребители АС-20А, АС-20В, DC-20А и DC-20В) $\leq 0,5\text{mA}$ /на полюс (mA)	--	N
	Токови загуби ((други категории потребители) $\leq 2$ mA/на полюс (mA)	< 1	P
8.3.3.6	Проверка на нагряването		P
	- сечение на проводника ( $\text{mm}^2$ )	240	
	- ток при провеждане на теста (A)	400	
	Повишение на температурата $dT$ на част	$dT$ (K) измерена	$dT$ (K) изисквана
	Терминали	$\leq 61$	80
	Ръчно задействани елементи: неметални	5	30
	Части, които могат да бъдат докосвани, но не и държани в ръка: неметални	37	50
	Части, които при нормално функциониране не трябва да бъдат докосвани: неметални	45	60

ОРИГИНАЛ



8.3.3.7	Издръжливост на задействания механизъм		P
8.2.5	Проверка на издръжливостта на задействания механизъм и устройството за определяне на разположението		P
	- тип на задействания механизъм (fig.)	1e	--
8.2.5.2.1	Зависими и независими ръчни операции		P
	- задействаща сила при отваряне (N)	210	--
	- сила при провеждане на тест с блокирани главни контакти (N)	400	--
	-метод, използван, за да се задържат контактите затворени	Фиксирани посредством запояване	--
	По време и след теста, не се посочва отворено положение	Не се посочва отворено положение	P
	При оборудване с блокировка, не се разрешава блокиране в отворено положение, когато се прилага силата	Без блокиране в отворено положение	P
8.2.5.2.2	Зависимо управление		N
	- основните контакти, фиксирани заедно в затворено положение	--	N
	метод, използван да поддържа контактите затворени	--	N
	- 110% от номиналното напрежение на захранването, подавано към оборудването (3 пъти)	--	N
	По време и след теста, не е посочено отворено положение	--	N
	Оборудването не показва повреди, които да пречат на нормалното му функциониране		N
	При оборудване с блокиращ механизъм, не се позволява блокировка при прилагане силата при теста	--	N
8.2.5.2.3	Независимо управление		N
	- основните контакти, фиксирани заедно в затворено положение		N
	- използва се метод, поддържащ контактите затворени	--	N
	- освобождаване на натрупаната енергия при енергийната операция (3 пъти)	--	N
	По време и след теста, не е посочено отворено положение	--	N
	Оборудването не показва повреди, които да пречат на нормалното му функциониране		N
	При оборудване с блокиращ механизъм, не се позволява блокировка при прилагане на силата на теста	--	N

ВЯРНО С  
ОРИГИНАЛА



## Confirmation of Accreditation

The Federal Ministry of Economics, Family and Youth confirms that

### Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H

Giefinggasse 2, A-1210 Wien

Identification number: 1

Initial date of Accreditation: December 01, 1993



is accredited as Testing Laboratory and Inspection Body and fulfills the requirements of ÖVE/ÖNORM EN ISO/IEC 17025:2007 and ÖVE/ÖNORM EN ISO/IEC 17020:2004 Type A.

The detailed scope of accreditation is given in the currently valid decree.

The accredited technical fields are published in the list of accredited bodies at [www.bmwfj.gv.at/akkreditierung](http://www.bmwfj.gv.at/akkreditierung).

Vienna, May 07, 2010

Dipl.-Ing. Günter P. Friers



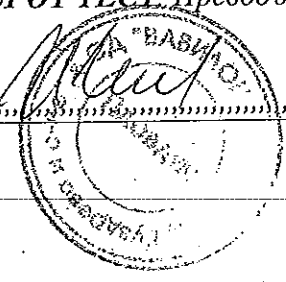
**Осцилограма(и)**

**Осцилограма 1:**

**Проект № 2.03.02087.1.0./BTVC400/AC22/500V/400A/3-полусен; 10 страници**

Аз, долуподписаната Йорданка Иванова Георгиева, удостоверявам точността на извършения от мен превод от английски на български език на приложения документ **ПРОТОКОЛ ОТ ТЕСТ**. Преводът включва (седем) 7 страници.

Преводач ..... /Йорданка Георгиева/



A large, stylized handwritten signature in black ink, located on the right side of the page.

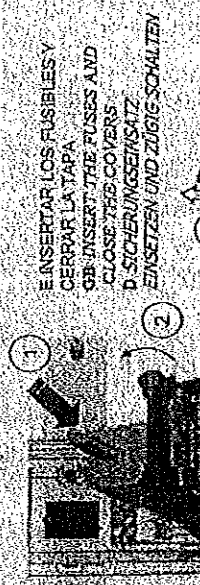
**ВЯРНО С  
ОРИГИНАЛА**



A large, stylized handwritten signature in black ink, located at the bottom center of the page.

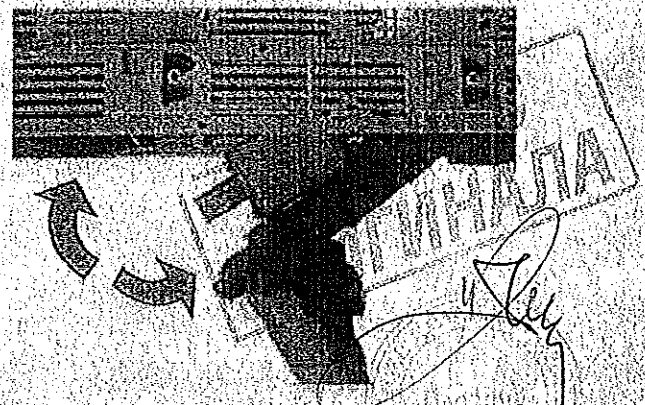
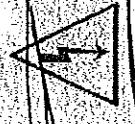
A small, handwritten mark or signature at the bottom left corner of the page.

**INTRODUCCIÓN / EXTRACCIÓN DEL FUSIBLE**  
**INSTALLING / REMOVAL OF FUSE**  
**SICHERUNGSEINSAZ / EINSETZEN / ENTFERNEN**

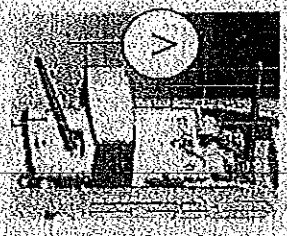


**E EXTRACCIÓN DEL FUSIBLE**  
**OR REMOVAL OF FUSE**  
**D SICHERUNGSEINSAZ ENTFERNEN**

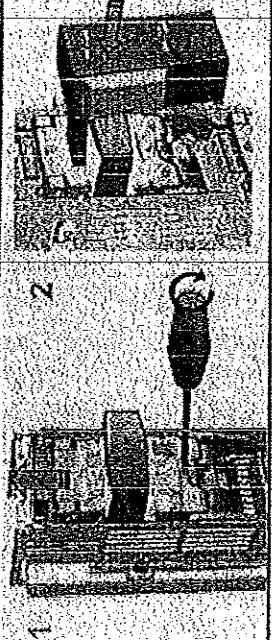
**ON / OFF: MANIOBRAR RÁPIDAMENTE**  
**ON / OFF: MOVE LEVER QUICKLY**  
**EIN- UND AUSSCHALTEN: SCHNELL SCHALTEN**



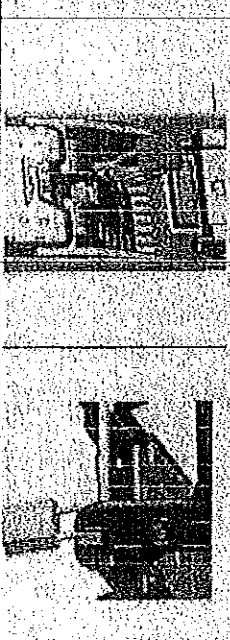
**PRESENCIA DE TENSION**  
**VOLTAGESNACHWEISUNG**  
**SPANNUNGSPRUFUNG**



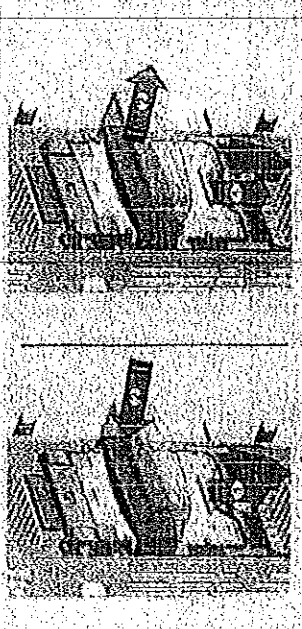
**INSTALACION DE SALIDA AUXILIAR PROTEGIDA POR FUSIBLE**  
**INSTALLING A PROTECTED AUXILIARY OUTLET /**  
**NEUSCHACKSICHERUNG**



**BLOQUEO DE CANDADO, LOCKING DEVICES / ABSCHERRVORRICHTUNG**



**ASA ESCAMOTEABLE BTVC-E**  
**RETRACTABLE HANDLE BTVC-E / VERSENKBARER GRIFF BTVC-E**



**Instrucciones de montaje y desmontaje**

**predlazitel**

1. Издърже се ръкохватката на разединителя.

2. Натиска се жълтия бутон и се

изважда / поставя предлазителя

3. Измерване на напрежение

4. Инсталиране на допълнителен изолатор извън

4. Закljučващо у-во

CLASIFICACION ELECTRICAS/MECANICAS ELECTRICAL/MECHANICAL CHARACTERISTICS ELECTRISCHES UND MECHANISCHE BEZUGSGRÖßEN	BTVC 250 A	BTVC 400 A	BTVC 630 A
INTENSIDAD NOMINAL (A) RATED OPERATIONAL CURRENT (A) / BETRIEBSSTROM (A)	250	400	630
TENSION NOMINAL (kV) RATED OPERATIONAL VOLTAGE (kV) / BETRIEBSSPANNUNG (kV)	160	690	690
TENSION DE AISLAMIENTO (kV) RATED INSULATION VOLTAGE (kV) / ISOLATIONS-SPANNUNG (kV)	1000	1000	1000
FRECUENCIA INDUSTRIAL TEST VOLTAGE 50 Hz/60 Hz / ISOLATIONS-SPANNUNG (Hz)			
Entre polos activos y masa ±1 mm. Between phases and earth ± 1 mm. Entre polos activos: ± 1 mm / Zwischenphasen: ± 1 mm. Between phases: ± 1 mm / Zwischenphasen	10	10	10
TENSION DE FRECUENCIA INDUSTRIAL TEST VOLTAGE 50 Hz/60 Hz / ISOLATIONS-SPANNUNG (Hz)	3,5	3,5	3,5
RESISTENCIA DE FRECUENCIA INDUSTRIAL TEST VOLTAGE 50 Hz/60 Hz / ISOLATIONS-SPANNUNG (Hz)	30	30	30
RESISTENCIA DE FRECUENCIA INDUSTRIAL TEST VOLTAGE 50 Hz/60 Hz / ISOLATIONS-SPANNUNG (Hz)	>50	>50	>50
RESISTENCIA AL CAMBIO DE ESTADO INSULATION RESISTANCE / ISOLATIONSWIDERSTAND	>5	>5	>5
MEDIDA DE DURABILIDAD MECHANICAL OPERATING CYCLES / MECHANISCHE LEBENSDAUER	500	600	800
TIPO DE OPERACION ELECTRICAL OPERATING CYCLES ELECTRISCHES LEBENSZAHL (ISOLATIONSPREISEL)	200	300	300
CATEGORIA DE EMPLEO UTILIZATION CATEGORY / GEBRAUCHSKATEGORIE	AC23B AC23B AC23B	AC23B AC23B AC23B	AC23B AC23B AC23B
GRADO DE PROTECCION PROTECTION CLASS / SCHUTZGRAD	IP-30	IP-30	IP-30

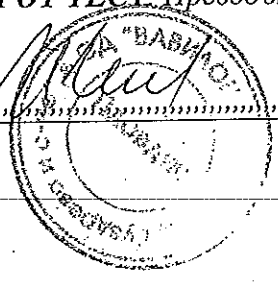
**Осцилограма(и)**

Осцилограма 1:

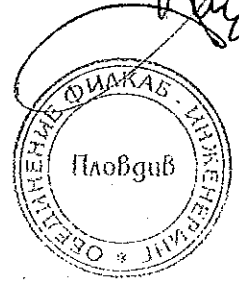
Проект № 2.03.02087.1.0./BTVC400/AC22/500V/400A/3-полусен; 10 страници

Аз, долуподписаната Йорданка Иванова Георгиева, удостоверявам точността на извършения от мен превод от английски на български език на приложения документ **ПРОТОКОЛ ОТ ТЕСТ**. Преводът включва (седем) 7 страници.

Преводач  /Йорданка Георгиева/



**ВЯРНО С  
ОРИГИНАЛА**



## Confirmation of Accreditation

The Federal Ministry of Economics, Family and Youth confirms that

### Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H

Giefinggasse 2, A-1210 Wien

Identification number: 1

Initial date of Accreditation: December 01, 1993



is accredited as Testing Laboratory and Inspection Body and fulfills the requirements of ÖVE/ÖNORM EN ISO/IEC 17025:2007 and ÖVE/ÖNORM EN ISO/IEC 17020:2004 Type A.

The detailed scope of accreditation is given in the currently valid decree.

The accredited technical fields are published in the list of accredited bodies at [www.bmwfj.gv.at/akkreditierung](http://www.bmwfj.gv.at/akkreditierung).

Vienna, May 07, 2010

Dipl.-Ing. Günter P. Friers



**PRONUTEC, S.A.**

Parque Empresarial Boroa Parc. 2c-1  
48340 Amorebieta – VIZCAYA (SPAIN)  
NIF.: ES-A-48/217.962

*Declara bajo su responsabilidad que el producto:  
Declare under our sole responsibility that the product:  
Eigenverantwortliche Erklärung zu unserem Produkt:*

*Bases tripolares verticales cerradas (BTVC) tamaños 1/2/3, desconexión unipolar y tripolar.  
Three poles fuse rails (BTVC) size 1/2/3, one and three pole Switching.  
Dreipolige Sicherungslastschaltleisten (BTVC) Größe 1/2/3, ein und dreipolig schaltbar.*

*Referencias 438xxxxxx fabricados según la Especificación Técnica de Pronutec ET-438.  
References 438xxxxxx manufactured according Pronutec's ET-438 Technical Specification.  
Die Referenznummern 438xxxxxx sind alle gefertigt gemäß den technischen Spezifikationen der Pronutec ET-438.*

*Son conformes con las exigencias de la Directiva de Seguridad del material eléctrico destinado a ser utilizado bajo determinados límites de tensión 2006/95/EC.*

*Are in accordance with the requirements of the Low Voltage Directive 2006/95/EC*

*Diese sind in Übereinstimmung mit den Anforderungen der Niederspannungsanweisung 2006/95/EC.*

*Y de la Directiva de Compatibilidad Electromagnética 2004/108/CE.*

*And with the Electromagnetic Compatibility Directive 2004/108/CE.*

*Und mit der Elektromagnetischen Verträglichkeitsanweisung 2004/108/CE.*

*De acuerdo a la siguiente norma armonizada:  
According to the following harmonised standard:  
Gemäß der folgenden Norm:*

**UNE - EN 60947-3: 2009**

*Cualquier montaje, ya sea inicial o posterior que no respete las instrucciones generales de puesta en servicio y uso dadas por Pronutec, anula este documento.*

*Any initial or subsequent installation that will not observe the general instructions given by Pronutec will cancel this document.*

*Jegliche Änderungen oder Nachinstalltionen, die nicht den generellen Anweisungen der Firma Pronutec entspricht, widerruft diese Erklärung.*

*En Amorebieta / In Amorebieta*

**Fdo. Diego Martín Imbert**  
Director Técnico  
*Technical Director / Technischer Direktor*

**pronutec**  
gorlan team

LABORATORIO

Tel.: +34 94 631 32 34  
Fax: +34 94 631 39 22





**ДЕКЛАРАЦИЯ ЗА  
СЪОТВЕТСТВИЕ**

ДС4381-0  
27-Октомври-2010  
Стр. 1 от 1

**ПРОНУТЕК, С.А.**

Парк Империял Бороа Парк. 2с-1  
48340 Аморбиета – ВИЗКАЯ (ИСПАНИЯ)  
НИФ.: ЕС-А-48/217.962

*Декларираме на наша собствена отговорност, че продукта:*

*Триполюсни разединители (БТВС) размер 1/2/3 едно и три полюсно превключване  
Референции 438xxxxxx произведени според Техническите спецификации ET-438 на Пронутек  
Са в съответствие с изискванията на Директива за Ниско Напрежение 2006/95/ЕС  
И с Директива за Електромагнитно Съвместимост 2004/108/СЕ*

*Според следния хармонизиран стандарт:*

**UNE-EN 60947-3: 2009**

*Всеки първоначален или последващ монтаж, който не съблюдава общите инструкции  
дадени от Пронутек, ще отмени този документ.*

В Аморбиета

Диего Мартин Имберт

Технически Директор

Подпис – не се чете

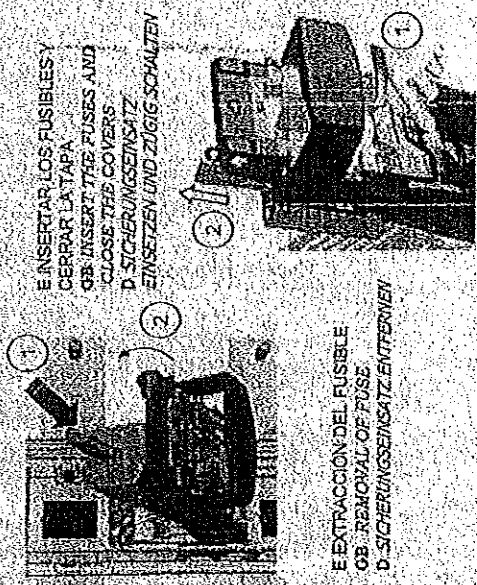
Печат на Пронутек

Превел от английски: Мария Александрова

**ВЯРНО С  
ОРИГИНАЛА**



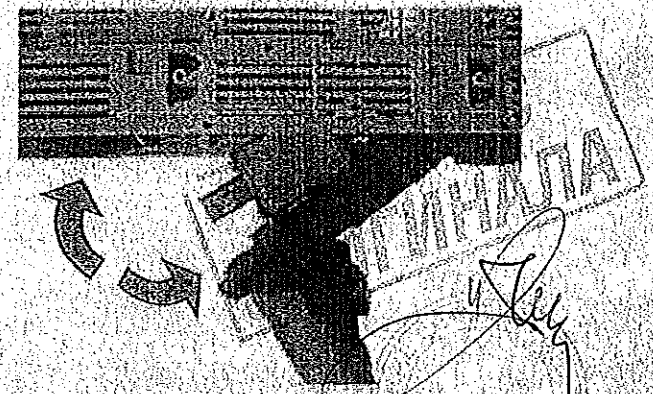
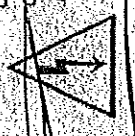
**INTRODUCCIÓN / EXTRACCIÓN DEL FUSIBLE**  
**INSTALLING / REMOVAL OF FUSE**  
**SICHERUNGSEINSAZ / EINSETZEN / ENTFERNEN**



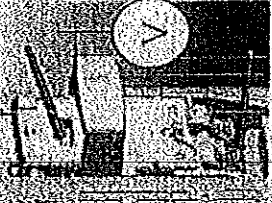
**E. INSERTAR LOS FUSIBLES Y CERRAR LA TAPA**  
**GB. INSERT THE FUSES AND CLOSE THE COVERS**  
**D. SICHERUNGSEINSAZ**  
**EINSETZEN UND ZUGIG SCHALTEN**

**E. EXTRACCIÓN DEL FUSIBLE**  
**GB. REMOVAL OF FUSE**  
**D. SICHERUNGSEINSAZ ENTFERNEN**

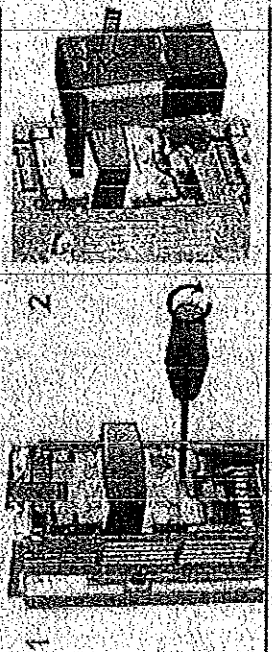
**ON / OFF: MANIOBRAR RÁPIDAMENTE!**  
**ON / OFF: MOVE LEVER QUICKLY!**  
**EIN- UND AUSSCHALTEN: SCHNELL SCHALTEN!**



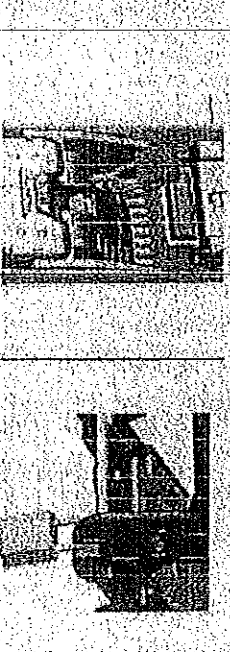
**PRESENCIA DE TENSIÓN**  
**VOLTAGE MEASUREMENT**  
**SPANNUNGSPRÜFUNG**



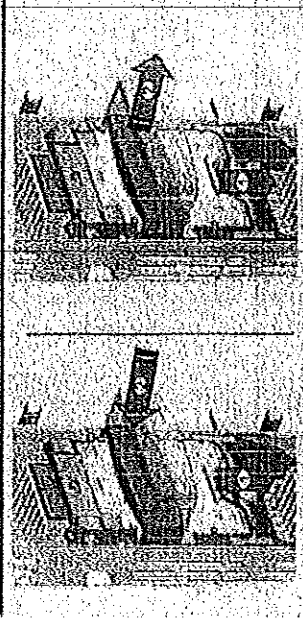
**INSTALACIÓN DE SALIDA AUXILIAR PROTEGIDA POR FUSIBLE**  
**INSTALLING A PROTECTED AUXILIARY OUTPUT**  
**FUSIFACHSICHERUNG**



**BLOQUEO DE CANDADO. LOCKING DEVICES / ABSCHERRICHTUNG**



**ASA ESCAMOTEABLE BTVC-E**  
**RETRACTABLE HANDLE BTVC-E / VERSENKBARE GRIFB BTVC-E**



**INSTRUKCIJA ZA MONTAJ I DEMONTAJ**

**предпазител**

1. Издърпва се ръкохватката на разединителя.

2. Натиска се жълтия бутон и се изважда / поставя предпазителя

3. Измерване на напрежение

4. Инсталиране на допълнителен изолаторан изв

4. Заклучаващо у-во

CHARACTERISTICS ELECTRICAL / MECANICAS	BTVC	BTVC
ELECTRICAL / MECANICAL CHARACTERISTICS	250 A	400 A
ELÉCTRICAS UND MECANISCHE EIGENSCHAFTEN		
INTENSIDAD NOMINAL IN (A)	250	400
RATED OPERATIONAL CURRENT IN (A) / BETRIEBSSTROM IN (A)		
TENSION NOMINAL UN (V)	690	690
RATED OPERATIONAL VOLTAGE UN (V) / BETRIEBSSPANNUNG UN (V)		
TENSION DE ASESAMIENTO UN (V)	1000	1000
RATED INSULATION VOLTAGE UN (V) / SOLATIONS-SPANNUNG UN (V)		
TIPO DE FRECUENCIA INDUSTRIAL		
TEST VOLTAGE 50 Hz (kV) / ISPCATIONS-PROÜPSPANNUNG (kV)		
Entre polos activos y masa > 1 mtr.	70	70
Between phases and earth - 1 mtr.		
Entre polos activos y masa > 0,5 mtr.	3,5	3,5
Between phases and earth - 0,5 mtr.		
TENSION ANSIADA DE CORTOCIRCUITO (kV)		
RATED SHORT-CIRCUIT WITHSTANDING VOLTAGE (kV) /		
IMPULSO (SEMANA) EN CORTOCIRCUITO (kV)		
RESISTENCIA COMO CORTOCIRCUITO (en kA)		
RATED SHORT-CIRCUIT WITHSTANDING CAPACITY (en kA) (with Iose)		
MECANISMO DE CERRAMIENTO Y TIPO DE CERRAMIENTO		
Mechanism of closing and type of closing		
RESISTENCIA AL AISLAMIENTO (MOM)		
INSULATION RESISTANCE / ISOLATIONSWIDERSTAND		
MECANICA / MECANICA		
MECHANICAL OPERATING CYCLES / MECHANISCHE LEBENSDAUER	600	800
IMPULSO EN CORTOCIRCUITO		
ELECTRICAL OPERATING CYCLES	200	200
ELECTRICAL LIFE (SHORT-CIRCUIT)		
CATEGORIA DE EJEMPLO		
UTILIZATION CATEGORY / GEBRAUCHSKATEGORIE	AC23B	AC23B
UN = 400 V		
UN = 500 V		
UN = 690 V		
GRADO DE PROTECCIÓN		
PROTECTION DESIGN / SCHUTZART	IP-30	IP-30

10811a

## ДЕКЛАРАЦИЯ

Долуподписаната Нонка Димитрова Черпокова, с л. к. № 642312624, издадена от МВР Пловдив на 13.05.2011 г., с ЕГН 5501054457, постоянен адрес - гр. Пловдив, бул. "Цар Борис III Обединител" № 33, в качеството си на представляващ обединението "ФИЛКАБ – ИНЖЕНЕРИНГ"

### ДЕКЛАРИРАМ, ЧЕ :

Предлаганите от обединение "Филкаб – Инженеринг" Триполюсни вертикални разединители 400 А, NH2 са изцяло в съответствие с изискванията на техническата спецификация на стандартите за материала, включително на параграфи „Характеристика на материала“ и "Съответствие на предложеното изпълнение с нормативно – техническите документи" по процедура № PPD 15-101.

14.12.2015 г.  
гр.Пловдив

Подпис :.....  
Нонка Черпокова





## NH FUSE LINKS gL-gG 500 V ВИСОКОМОЩНИ ПРЕДПАЗИТЕЛИ

NH FUSE SIZE 000 • ВПНН 000



Rated Voltage Номин. напрех. Un, (V)	Rated Current Номин. ток In, (A)	Breaking Capacity Изкл. способност kA	Resistance when cold Съпротивление mΩ	Watts loss Загуби at In, (W)
500	32	120	2.0-2.4	3.2
	40	120	2.0-2.4	4.0
	50	120	1.2-1.4	5.2
	63	120	1.0-1.2	6.0
	80	120	0.6-0.8	7.0
	100	120	0.5-0.6	7.2

NH FUSE SIZE 00 • ВПНН 00



Rated Voltage Номин. напрех. Un, (V)	Rated Current Номин. ток In, (A)	Breaking Capacity Изкл. способност kA	Resistance when cold Съпротивление mΩ	Watts loss Загуби at In, (W)
500	32	120	2.35-2.9	4
	40	120	2.2-2.6	4.8
	50	120	1.4-1.65	6
	63	120	1.2-1.5	8
	80	120	0.7-0.85	10
	100	120	0.6-0.7	12
	160	120	0.35-0.45	28

NH FUSE SIZE 0 • ВПНН 0



Rated Voltage Номин. напрех. Un, (V)	Rated Current Номин. ток In, (A)	Breaking Capacity Изкл. способност kA	Resistance when cold Съпротивление mΩ	Watts loss Загуби at In, (W)
500	32	120	3.15-3.55	3.5
	40	120	2.8-3.2	5.5
	50	120	2.9-2.05	5.8
	63	120	1.6-1.8	7.2
	80	120	0.9-1.0	8
	100	120	0.85-0.95	10
	125	120	0.85-0.95	18
160	120	0.5-0.85	25	

NH FUSE SIZE 1 • ВПНН 1



Rated Voltage Номин. напрех. Un, (V)	Rated Current Номин. ток In, (A)	Breaking Capacity Изкл. способност kA	Resistance when cold Съпротивление mΩ	Watts loss Загуби at In, (W)
500	100*	120	0.85-0.95	8
	125*	120	0.85-0.95	16
	160	120	0.5-0.85	18
	200	120	0.35-0.45	20
	250	120	0.3-0.4	21

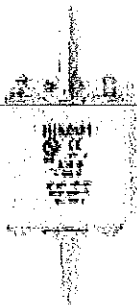
ОБРАЗЦОВА ОРГАНИЗАЦИЯ  
ПЛОВДИВ

NH FUSE SIZE 2 • ВПНН 2



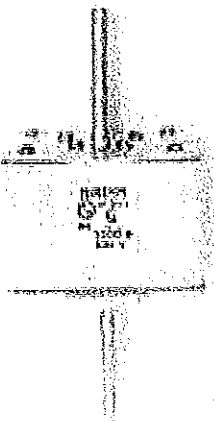
Rated Voltage	Rated Current	Breaking Capacity	Resistance when cold	Watts loss
Номин. напреж. Un, (V)	Номин. ток In, (A)	Изкл. способност kA	Съпротивление mΩ	Загуби at In, (W)
500	200*	120	0.37	22
	250*	120	0.3-0.4	26
	315	120	0.25-0.35	28
	355*	120	0.25-0.3	29
	400	120	0.2-0.3	30

NH FUSE SIZE 3 • ВПНН 3

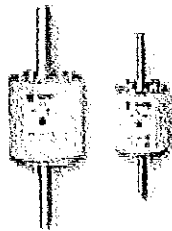


Rated Voltage	Rated Current	Breaking Capacity	Resistance when cold	Watts loss
Номин. напреж. Un, (V)	Номин. ток In, (A)	Изкл. способност kA	Съпротивление mΩ	Загуби at In, (W)
500	315*	120	0.22	32
	400*	120	0.21	38
	500	120	0.15-0.25	48
	630	120	0.1-0.2	68

NH FUSE SIZE 4 • ВПНН 4

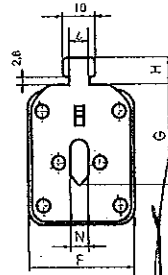
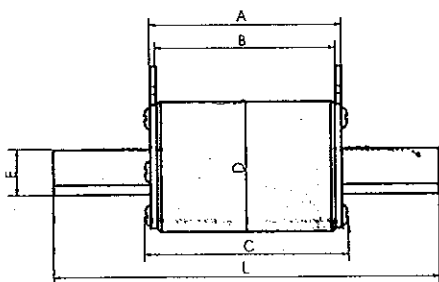


Rated Voltage	Rated Current	Breaking Capacity	Resistance when cold	Watts loss
Номин. напреж. Un, (V)	Номин. ток In, (A)	Изкл. способност kA	Съпротивление mΩ	Загуби at In, (W)
500	800	120	0.064	64
	1000	120	0.048	75
	1250	120	0.042	90



NIKDIM Ltd. also produces special kinds of fuses for the customers  
НИКДИМ ЕООД изпълнява и специални поръчки на клиенти

- \* the underlined values are produced only on customer's request
- \* Маркираните амперажи се изпълняват само по поръчка

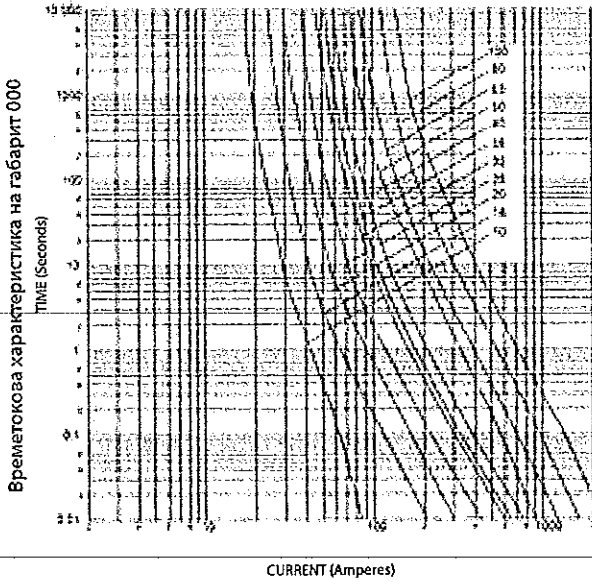


Size	Dimensions, Размери (mm)										Package
Габарит	A	B	C	D	E	F	G	H	I	J	Опаковка
NH 000	49	45	52	36	15	21	35	10	78.5	6	3/153
NH 00	49	45	52	38	15	29	35	10	78.5	6	3/108
NH 0	68	62	68	38	15	29	35	10	78.5	6	3/72
NH 1	68	62	71	48	20	40	40	10	135	6	3/54
NH 2	68	62	71	58	25	50	48	10	150	6	3/36
NH 3	68	62	73	70	32	70	68	10	150	6	3/36
NH 4	68	62	73	100	50	100	87	10	200	6	1/1

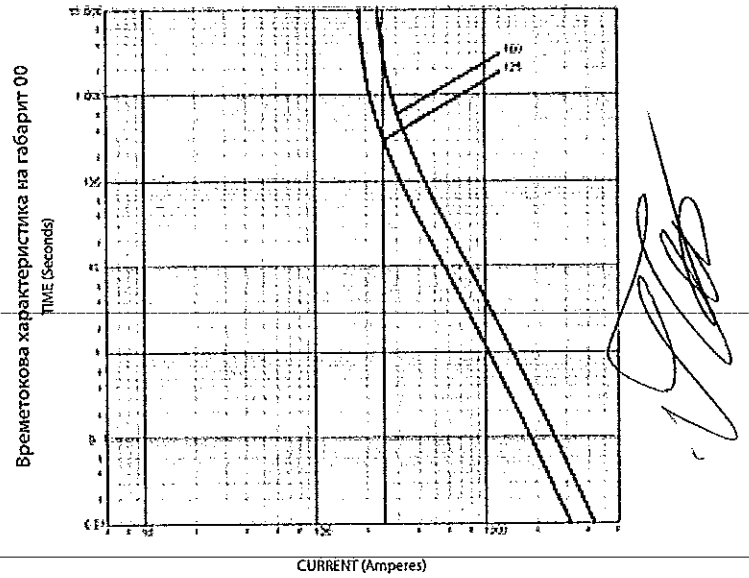
The NH fuse links are gL-gG class and are according to standard BDS EN 60269-1:2002  
Високомощните предпазители са от клас gL-gG и отговарят на стандарт БДС EN 60269-1:2002



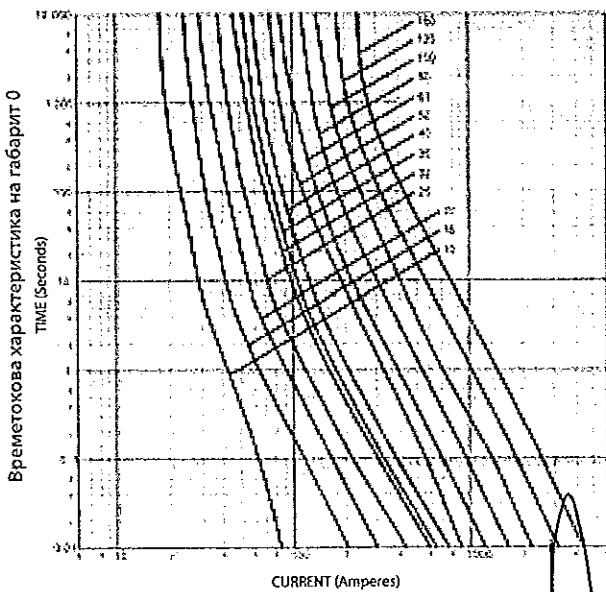
### Time current characteristics for size 000



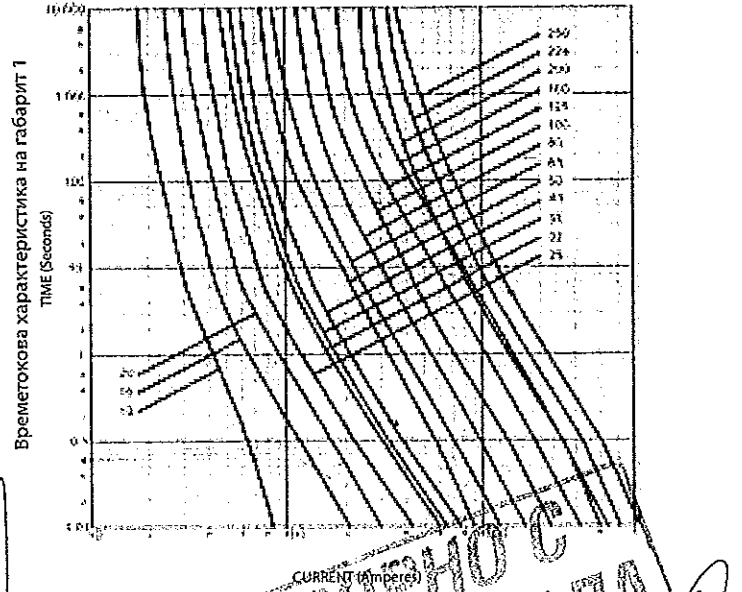
### Time current characteristics for size 00



### Time current characteristics for size 0



### Time current characteristics for size 1

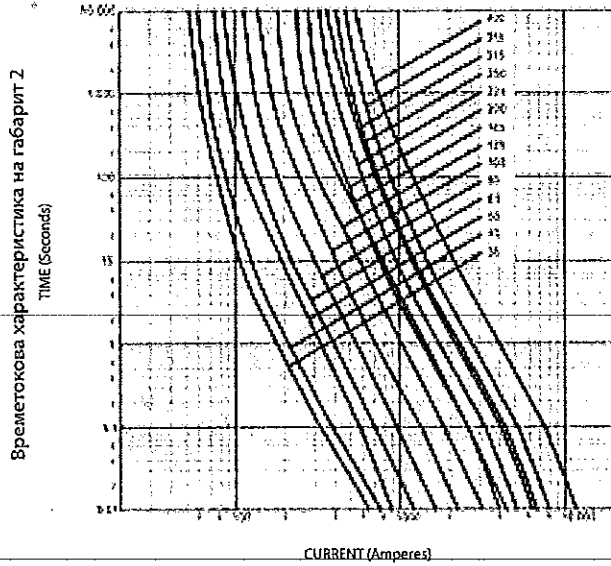


ВЯРНО С  
ОРИГИНАЛА

ТЕ ФИЗИКАС... УИИ

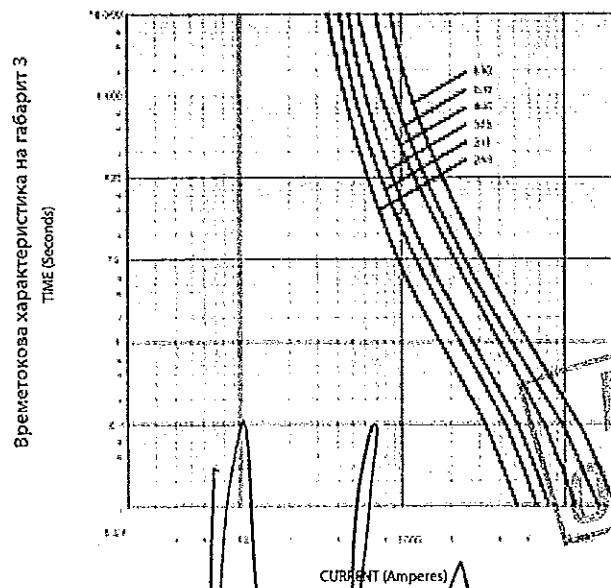
170

Time current characteristics for size 2



*[Handwritten signature]*

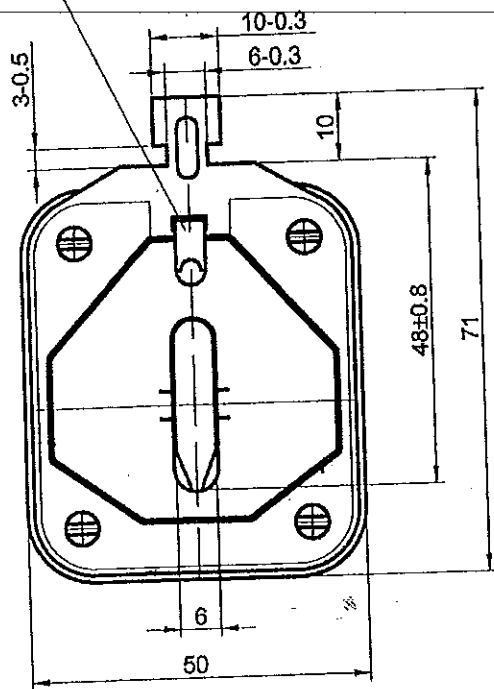
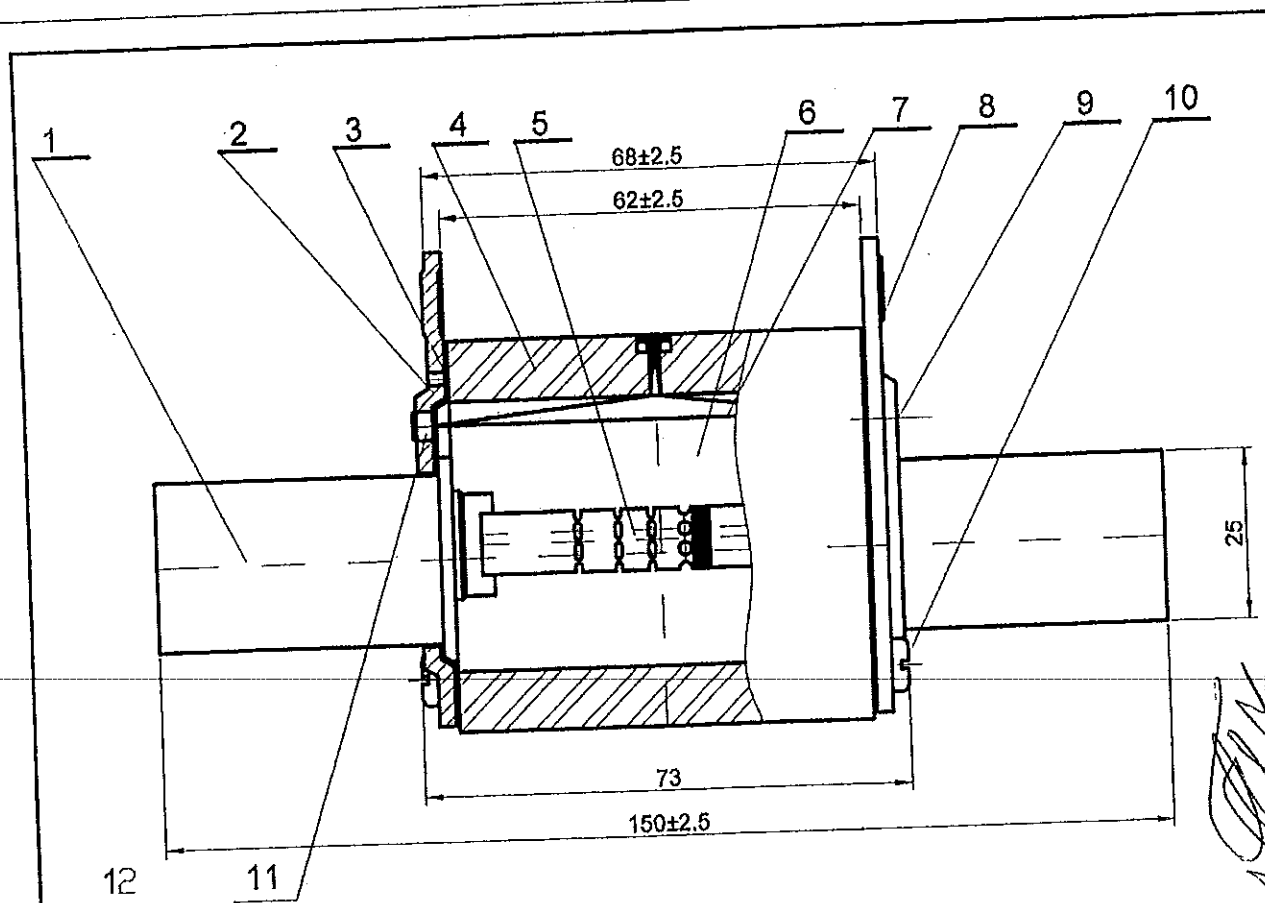
Time current characteristics for size 3



**ВЯРНО С  
ОРИГИНАЛА**

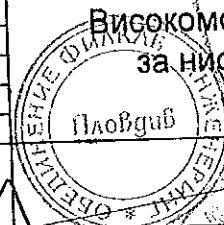
ОБЕДИНЕНИЕ ФИЛКАБ - ИНЖЕНЕРИ  
Пловдив

*[Handwritten signature]*



**Технически изисквания:**

1. Технически изисквания и основни размери - съгласно БДС EN 60269.
2. Маркировка:
  - тип - NH-2
  - номинално напрежение - 500 V
  - номинален ток - 40A; 50A; 63A; 80A; 100A; 125A; 160A; 200A; 224A; 250A; 315A; 350A; 400A
  - вид на тока - AC
  - клас - gG
  - изключваща възможност - 120kA
  - номинална честота - 50Hz
  - производител - "НИКДИМ"

NIKDIM Ltd.		Scale 1:1		Weight	
		НД 40.11.00.00			
		<b>Високомощен предпазител</b> <b>за ниско напрежение</b> <b>NH 2</b>			
				Sheet 1	
		All sheet 1			
Alter	No of clocum.	Date	Name		
		Devel: 10.2010	Иванов		
		Contr: 10.2010	Дончев		
		Contr: 10.2010	Иванов		
		NH-2			







**ЦЕНТЪР ЗА ИЗПИТВАНЕ И ЕВРОПЕЙСКА СЕРТИФИКАЦИЯ**  
гр. Стара Загора бул. "Св. Патр. Евтимий" № 23; тел 042/ 620 368; fax 042/602 377  
ctec@ctec-sz.com, www.ctec-sz.com

# СЕРТИФИКАТ

№ LVD-08-000 - (2-08-564)-050

"ЦИЕС" ЕООД удостоверява, че продукт

**Високомощни предпазители за ниско напрежение тип NH, габарит 2**  
**номинален ток 315A - 400A**  
*представители на NH, габарит 2, номинален ток 63A, 80A, 100A, 125A, 160A, 200A, 250A*

Произведен във фирма:

**"НИКДИМ" ЕООД**  
гр. Казанлък, бул. "23 Шипченски полк" № 80

Отговаря на изискванията на:

**БДС EN 60269-1:2002** Стояеми предпазители за ниско напрежение  
Част 1: Общи изисквания – т.т. 6; 7.1; 7.3; 7.4; 7.10; 7.12; 7.13; 8.4.3.2; 8.4.3.4; 8.4.3.5; 8.10  
**БДС HD 630.2.1 S6:2006** Стояеми предпазители за ниско напрежение.  
Част 2-1: Допълнителни изисквания за стояеми предпазители, предназначени да се използват от квалифицирани лица – проверка на размерите фиг.1 и разсейвана мощност фиг.1

Сертификатът се издава въз основа на:

Протоколи от изпитване;  
№ 2-08-564/06.03.2008 г.

Дата на издаване: 10.03.2008 г.  
Стара Загора



Управител: "ЦИЕС" ЕООД;  
/инж. Благвеста Шинева/



BUREAU VERITAS  
Certification



# НИКДИМ ООД

ПРОИЗВОДСТВО НА ЕЛЕКТРОАПАРАТУРА

# Казанлък

бул. "23 Шипченски полк" 80

Управител: 0431/63011 тел./факс: 0431/65028  
Централа: 0431/65016, Мобилен: 0888 233244  
Търговия тел./факс: 0431/62584, 0887 800533, 0887 254943  
e-mail: [info@nikdim.bg](mailto:info@nikdim.bg) Web site: [www.nikdim.bg](http://www.nikdim.bg)

## ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

Долуподписаната, инж. Мария Николова Георгиева Управител на

(наименование на дружеството / фирмата производител )

НИКДИМ ООД – гр. Казанлък, бул. 23 Пехотен Шипченски полк № 80

(адрес на фирмата)

Декларирам на собствена отговорност, че продуктите:

**Високомощен предпазител за ниско напрежение NH 2 400 А**

(наименование и търговска марка, тип или модел, № на партидата, извадката (пробата) или серията, евентуално произход и брой на екземплярите)

за които се отнася тази декларация, са в съответствие със следния(те) стандарт(и), техническо одобрение (ТО) или друг(и) нормативен(и) акт(ове):

БДС EN 60269-1:2007

БДС HD 60269-2:2007

(наименование и/или номер и дата на издаване на стандарта(тите), ТО или друг(ите) нормативен(и) акт(ове))

и в съответствие с Наредбата за съществените изисквания и оценяване съответствието на електрически соръжения, предназначени за използване в определени граници на напрежението и Наредбата за съществените изисквания и оценяване на съответствието за електромагнитна съвместимост.

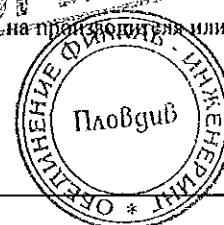


инж. Георгиева – Управител на НИКДИМ ООД

гр. Казанлък

(място и дата на издаване)

(фамилия, длъжност и подпис на производителя или негов представител)



ИД №016