Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 06 ATEX 2054 X

(4) Equipment: Solenoid, type 48xx

(5) Manufacturer: Norgren GmbH

(6) Address: Stuttgarter Str. 120, 70736 Fellbach, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 06-25314.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2004	**EN 60079-1:2004**	**EN 60079-7:2004**
EN 60079-18:2004	**prEN 61241-0:2004**	**EN 61241-1:2004**
EN 61241-18:2004		

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

Ex II 2 G Ex mb d IIC T6 or T4

or **Ex II 2 G Ex mb e II T6 or T4**

and **Ex II 2 D Ex mbD 21 tD A21 IP 66 T100 °C**

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, February 6, 2007

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

(15) Description of equipment

The solenoids of type series 48xx consist of an encapsulated magnet coil designed to type of protection "Encapsulation m", and a terminal compartment. The type of protection of the terminal compartment is either "Increased Safety " or "Flameproof Enclosure" depending on the cable entries used. The magnet is electrically connected to the Ex e terminal clamps located in the terminal compartment.

The solenoids are approved exclusively for single mounting. The lowest permissible ambient temperature is $T_{amb,min}$= -40 °C.

Electrical data

Type		**4800**		
Nominal voltage		$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current		I_B	= 60 mA ... 9 mA	
Limit power		P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		1/2 – 14 NPT		

Typ		**4801**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		1/2 – 14 NPT		

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Type		**4802**		
Nominal voltage		$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current		I_B	= 60 mA ... 9 mA	
Limit power		P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Typ		**4803**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Type	**4804**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current	I_B	= 60 mA ... 6 mA	
Limit power	P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +80 °C	
for temperature class T6	$T_{amb,max}$	= +70 °C	
for dusts with T100°C	$T_{amb,max}$	= +80 °C	
Fuse installed	no		
Sleeve diameter	13 mm		
Threaded end	1/2 – 14 NPT		

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Typ		**4805**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 250 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		no		
Sleeve diameter		13 mm		
Threaded end		1/2 – 14 NPT		

Type		**4806**		
Nominal voltage		$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current		I_B	= 60 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		no		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Typ		**4807**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 250 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		no		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

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Type	**4810**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	371 mA ... 33 mA	
Limit power	P_{Limit}	=	4.4 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100°C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	13 mm			
Threaded end	1/2 – 14 NPT			

Typ	**4811**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 238 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	203 mA ... 15 mA	
Limit power	P_{Limit}	=	4.4 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100°C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	13 mm			
Threaded end	1/2 – 14 NPT			

Type	**4812**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	371 mA ... 33 mA	
Limit power	P_{Limit}	=	4.4 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100°C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	13 mm			
Threaded end	M20 x 1.5			

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Typ		**4813**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 203 mA ... 15 mA	
Limit power		P_{Limit}	= 4.4 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100°C		$T_{amb,max}$	= +75 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Type	**4814**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current	I_B	= 371 mA ... 18 mA	
Limit power	P_{Limit}	= 4.4 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +75 °C	
for temperature class T6	$T_{amb,max}$	= +55 °C	
for dusts with T100°C	$T_{amb,max}$	= +75 °C	
Fuse installed	no		
Sleeve diameter	13 mm		
Threaded end	1/2 – 14 NPT		

Typ		**4815**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 400 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 203 mA ... 10 mA	
Limit power		P_{Limit}	= 4.4 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100°C		$T_{amb,max}$	= +75 °C	
Fuse installed		no		
Sleeve diameter		13 mm		
Threaded end		1/2 – 14 NPT		

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Type	**4816**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	371 mA ... 18 mA	
Limit power	P_{Limit}	=	4.4 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100°C	$T_{amb,max}$	=	+75 °C	
Fuse installed	no			
Sleeve diameter	13 mm			
Threaded end	M20 x 1.5			

Typ	**4817**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 400 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	203 mA ... 10 mA	
Limit power	P_{Limit}	=	4.4 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100°C	$T_{amb,max}$	=	+75 °C	
Fuse installed	no			
Sleeve diameter	13 mm			
Threaded end	M20 x 1.5			

Type	**4820**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	609 mA ... 63 mA	
Limit power	P_{Limit}	=	8.0 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100°C	$T_{amb,max}$	=	+50 °C	
Fuse installed	yes			
Sleeve diameter	13 mm			
Threaded end	1/2 – 14 NPT			

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Typ		**4821**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 338 mA ... 36 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100°C		$T_{amb,max}$	= +50 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		1/2 – 14 NPT		

Type		**4822**		
Nominal voltage		$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current		I_B	= 609 mA ... 63 mA	
Limit power		P_{Limit}	= 8.0 W	
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100°C		$T_{amb,max}$	= +50 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Typ		**4823**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 338 mA ... 36 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100°C		$T_{amb,max}$	= +50 °C	
Fuse installed		yes		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

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Type	**4824**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	609 mA ... 28 mA	
Limit power	P_{Limit}	=	8.0 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100°C	$T_{amb,max}$	=	+50 °C	
Fuse installed	no			
Sleeve diameter	13 mm			
Threaded end	1/2 – 14 NPT			

Typ	**4825**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 400 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	323 mA ... 25 mA	
Limit power	P_{Limit}	=	8.0 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100°C	$T_{amb,max}$	=	+50 °C	
Fuse installed	yes			
Sleeve diameter	13 mm			
Threaded end	1/2 – 14 NPT			

Type	**4826**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	609 mA ... 28 mA	
Limit power	P_{Limit}	=	8.0 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100°C	$T_{amb,max}$	=	+50 °C	
Fuse installed	no			
Sleeve diameter	13 mm			
Threaded end	M20 x 1.5			

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Typ		**4827**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 400 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 323 mA ... 25 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100°C		$T_{amb,max}$	= +50 °C	
Fuse installed		no		
Sleeve diameter		13 mm		
Threaded end		M20 x 1.5		

Type	**4850**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current	I_B	= 60 mA ... 9 mA	
Limit power	P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +80 °C	
for temperature class T6	$T_{amb,max}$	= +70 °C	
for dusts with T100°C	$T_{amb,max}$	= +80 °C	
Fuse installed	yes		
Sleeve diameter	16 mm		
Threaded end	1/2 – 14 NPT		

Typ		**4851**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		yes		
Sleeve diameter		16 mm		
Threaded end		1/2 – 14 NPT		

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Type	**4852**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	60 mA ... 9 mA	
Limit power	P_{Limit}	=	1.5 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+80 °C	
for temperature class T6	$T_{amb,max}$	=	+70 °C	
for dusts with T100°C	$T_{amb,max}$	=	+80 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	M20 x 1.5			

Typ	**4853**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 238 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	40 mA ... 6 mA	
Limit power	P_{Limit}	=	1.5 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+80 °C	
for temperature class T6	$T_{amb,max}$	=	+70 °C	
for dusts with T100°C	$T_{amb,max}$	=	+80 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	M20 x 1.5			

Type	**4854**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	60 mA ... 6 mA	
Limit power	P_{Limit}	=	1.5 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+80 °C	
for temperature class T6	$T_{amb,max}$	=	+70 °C	
for dusts with T100°C	$T_{amb,max}$	=	+80 °C	
Fuse installed	no			
Sleeve diameter	16 mm			
Threaded end	1/2 – 14 NPT			

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Typ		**4855**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 250 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		1/2 – 14 NPT		

Type	**4856**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current	I_B	= 60 mA ... 6 mA	
Limit power	P_{Limit}	= 1.5 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +80 °C	
for temperature class T6	$T_{amb,max}$	= +70 °C	
for dusts with T100°C	$T_{amb,max}$	= +80 °C	
Fuse installed	no		
Sleeve diameter	16 mm		
Threaded end	M20 x 1.5		

Typ		**4857**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 250 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 40 mA ... 6 mA	
Limit power		P_{Limit}	= 1.5 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +80 °C	
for temperature class T6		$T_{amb,max}$	= +70 °C	
for dusts with T100°C		$T_{amb,max}$	= +80 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		M20 x 1.5		

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Type	**4860**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	371 mA ... 33 mA	
Limit power	P_{Limit}	=	4.4 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	1/2 – 14 NPT			

Typ	**4861**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 238 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	203 mA ... 15 mA	
Limit power	P_{Limit}	=	4.4 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	1/2 – 14 NPT			

Type	**4862**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 125 V	DC
Rated current	I_B	=	371 mA ... 33 mA	
Limit power	P_{Limit}	=	4.4 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+75 °C	
for temperature class T6	$T_{amb,max}$	=	+55 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+75 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	M20 x 1.5			

Typ		**4863**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 203 mA ... 15 mA	
Limit power		P_{Limit}	= 4.4 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100 °C		$T_{amb,max}$	= +75 °C	
Fuse installed		yes		
Sleeve diameter		16 mm		
Threaded end		M20 x 1.5		

Type	**4864**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current	I_B	= 371 mA ... 18 mA	
Limit power	P_{Limit}	= 4.4 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +75 °C	
for temperature class T6	$T_{amb,max}$	= +55 °C	
for dusts with T100 °C	$T_{amb,max}$	= +75 °C	
Fuse installed	no		
Sleeve diameter	16 mm		
Threaded end	1/2 – 14 NPT		

Typ		**4865**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 400 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 203 mA ... 10 mA	
Limit power		P_{Limit}	= 4.4 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100 °C		$T_{amb,max}$	= +75 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		1/2 – 14 NPT		

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Type		**4866**		
Nominal voltage		$U_{Nominal}$	= 12 V ... 250 V	DC
Rated current		I_B	= 371 mA ... 18 mA	
Limit power		P_{Limit}	= 4.4 W	
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100 °C		$T_{amb,max}$	= +75 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		M20 x 1.5		

Typ		**4867**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 400 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 203 mA ... 10 mA	
Limit power		P_{Limit}	= 4.4 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +75 °C	
for temperature class T6		$T_{amb,max}$	= +55 °C	
for dusts with T100 °C		$T_{amb,max}$	= +75 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		M20 x 1.5		

Type	**4870**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current	I_B	= 609 mA ... 63 mA	
Limit power	P_{Limit}	= 8.0 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +50 °C	
for temperature class T6	$T_{amb,max}$	= +40 °C	
for dusts with T100 °C	$T_{amb,max}$	= +50 °C	
Fuse installed	yes		
Sleeve diameter	16 mm		
Threaded end	1/2 – 14 NPT		

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Typ		**4871**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 338 mA ... 36 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100 °C		$T_{amb,max}$	= +50 °C	
Fuse installed		yes		
Sleeve diameter		16 mm		
Threaded end		1/2 – 14 NPT		

Type	**4872**		
Nominal voltage	$U_{Nominal}$	= 12 V ... 125 V	DC
Rated current	I_B	= 609 mA ... 63 mA	
Limit power	P_{Limit}	= 8.0 W	
Maximum permissible ambient temperature			
for temperature class T4	$T_{amb,max}$	= +50 °C	
for temperature class T6	$T_{amb,max}$	= +40 °C	
for dusts with T100 °C	$T_{amb,max}$	= +50 °C	
Fuse installed	yes		
Sleeve diameter	16 mm		
Threaded end	M20 x 1.5		

Typ		**4873**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 238 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 338 mA ... 36 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100 °C		$T_{amb,max}$	= +50 °C	
Fuse installed		yes		
Sleeve diameter		16 mm		
Threaded end		M20 x 1.5		

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2054 X

Type	**4874**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	609 mA ... 28 mA	
Limit power	P_{Limit}	=	8.0 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+50 °C	
Fuse installed	no			
Sleeve diameter	16 mm			
Threaded end	1/2 – 14 NPT			

Typ	**4875**			
Nominal voltage	$U_{Nominal}$	=	25 V ... 400 V	AC
or	$U_{Nominal}$	=	24 V	UC
Rated current	I_B	=	323 mA ... 25 mA	
Limit power	P_{Limit}	=	8.0 W	
Frequency	f	=	40 Hz ... 60 Hz	AC
or	f	=	0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+50 °C	
Fuse installed	yes			
Sleeve diameter	16 mm			
Threaded end	1/2 – 14 NPT			

Type	**4876**			
Nominal voltage	$U_{Nominal}$	=	12 V ... 250 V	DC
Rated current	I_B	=	609 mA ... 28 mA	
Limit power	P_{Limit}	=	8.0 W	
Maximum permissible ambient temperature				
for temperature class T4	$T_{amb,max}$	=	+50 °C	
for temperature class T6	$T_{amb,max}$	=	+40 °C	
for dusts with T100 °C	$T_{amb,max}$	=	+50 °C	
Fuse installed	no			
Sleeve diameter	16 mm			
Threaded end	M20 x .5			

Typ		**4877**		
Nominal voltage		$U_{Nominal}$	= 25 V ... 400 V	AC
	or	$U_{Nominal}$	= 24 V	UC
Rated current		I_B	= 323 mA ... 25 mA	
Limit power		P_{Limit}	= 8.0 W	
Frequency		f	= 40 Hz ... 60 Hz	AC
	or	f	= 0 Hz ... 60 Hz	UC
Maximum permissible ambient temperature				
for temperature class T4		$T_{amb,max}$	= +50 °C	
for temperature class T6		$T_{amb,max}$	= +40 °C	
for dusts with T100 °C		$T_{amb,max}$	= +50 °C	
Fuse installed		no		
Sleeve diameter		16 mm		
Threaded end		M20 x .5		

(16) Test report PTB Ex 06-25314

(17) Special conditions for safe use

a) The routine test shall include the test of the gap width and the surface quality. The pressure test may be omitted since a static overpressure test with the fourfold reference pressure was met.

b) A cable entry shall be used for which an EC-type examination certificate is available and which fulfills a degree of protection of IP 66 or higher.

c) The solenoids of type 48xx may only be operated with an appropriate valve body. The valve body shall be of type P 9510202 (stainless steel) as a minimum or it shall be a larger valve body which provides better thermal conductivity.

d) A fuse corresponding to its rated current (max. $3*I_{rat}$ according IEC 60127-2-1) or a motor protecting switch with short-circuit and thermal instantaneous tripping (adjusted to rated current) shall be connected in series to each solenoid as short circuit protection. For very low rated currents of the solenoid the fuse of lowest current value according to the indicated IEC standard will be sufficient. The fuse may be accommodated in the associated supply unit or shall be arranged separately. The fuse used shall definitely disconnect at 1.1-fold the nominal voltage indicated for the solenoid. The breaking capacity of the fuse-link shall be as high as or higher than the maximum expected short circuit current at the location of the installation (usually 1500 A).

e) When solenoids are provided with an encapsulated TR5-fuse, this fuse shall be of type series 372 manufactured by the company Wickmann. A comparable type may be used only if the fulfilment of clause d) of the "Special Condiotions" is proven.

f) Apparatus operated at higher temperatures than 70 °C at the cable entry or 80 °C at the strand branch shall be marked additionally with the higher temperature. In this case a heat-resistant connecting cable shall be used. For respective power values reference is made to table 2 of the operating instructions.

g) Connecting lines made of silicone or containing silicone, or lines which are not scratch-proof shall be protected against mechanical damage.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, February 6, 2007

Dr.-Ing. U. Johannsmeyer
Direktor und Professor