GT HYDRAULIC

OIL COOLER SYSTEMS

MS SERiSi / **MS** SERIES

Isıtma ve soğutma sistemlerindeki deneyimlerimizden sonra,
sıcak ve soğuk akışkanların daha geniş yüzeyle temas etmesi için yağ soğutucularını inovatif bir anlayışla geliştirerek ülke ve dünya pazarına sunduk

After our experience in heating and cooling systems, we have developed oil coolers with an innovative approach to ensure that hot and cold fluids come into contact with a larger surface area, and we offer them to both national and global markets

Çevre-insan ilişkisini dikkate alarak, Ar-Ge'ye önem vererek
ürün kalitemizi ve dolayısıyla müşteri memnuniyetini artırıyoruz.
Firmamızın kurumsallığını ve ürünlerimizin kalitesini
uluslararası standartlara göre belgelendirerek sektörümüzde fark yaratıyoruz.

We prioritize R&D, taking into account the relationship between the environment and humans. We are improving our product quality and consequently customer satisfaction. We are creating a difference in our industry by certifying the corporate identity of our company and the quality of our products according to international standards.

EAC International Organization for Standardization ISO 9001 CE

GENEL ÜRÜN BİLGİLERİ

Ana Malzeme	: Aluminyum
Fan / Fan Koruma Malzemesi	: Metal veya Sert Plastik
Max. Çalışma Sıcaklığı	: 120°C
Deneme Basıncı	: 30 Bar
Çalışma Basıncı	: 20 Bar
Kullanım Yerleri	: Mobil ve Sabit Endüstriyel Uygulamalar

"GT HİDROLİK" Hava-Yağ ısı değiştiricileri, ortamdaki havayı fan / elektromotor veya hidromotor aracılığıyla peteklerden geçirerek hidrolik sistemdeki yağın soğutulması amacı ile kullanılır. Soğutma finlerinin özellikleri sayesinde akışkanın türbülansını ve dolayısıyla ısı değişim kapasitesini arttırır. Ayrıca, soğutucu kanatçıkta bulunan özel yapılar, toplam iletim katsayısını artırır. Kompak, hafif, sağlam ve teknolojik bir üründür.

MONTAJ

Doğal hava akışını korumak amacıyla radyatörler yatay bir şekilde, montajı yapılabilir. **(Şekil-1)** Soğutucular, genellikle sistemdeki yağ deposu dönüş hatlarına yerleştirilir. Soğutucuların bileşenlerinde hasara neden olabilecek ani akış basıncı değişikliklerine ve darbelere maruz bırakmaktan koruyunuz. Sistem çalıştırıldığında oluşabilecek öngörülmeyen yüksek basınçtan radyatörü korumak için bir by-pass valfi takmanızı tavsiye ederiz.
(Şekil-2)

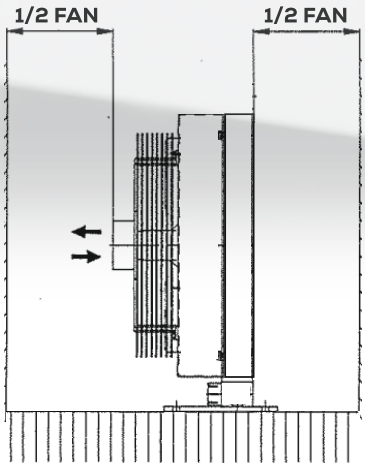
GENERAL PRODUCT INFORMATION

Main Material	: Aluminium
Fan / Fan Protection Material	: Metal or Rigid Plastic
Maximum Operating Temperature	: 120°C
Test Pressure	: 30 Bar
Operating Pressure	: 20 Bar
Application Areas	: Mobile and Stationary Industrial Applications

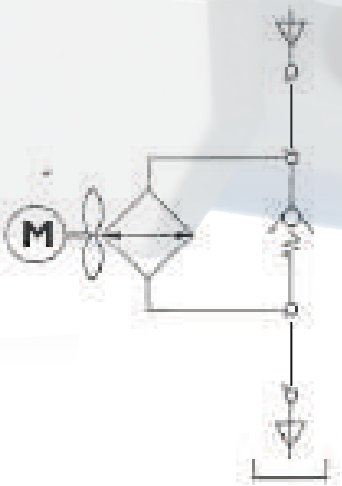
"GT HYDRAULIC" air-oil heat exchangers are used to cool the oil in the hydraulic system by passing the surrounding air through the cores via fans/electric motors. Thanks to the features of the cooling fins, it increases the fluid's turbulence and, therefore, the heat exchange capacity. Additionally, the special structures in the cooling fins increase the overall heat transfer coefficient. It is a compact, lightweight, durable, and technological product.

INSTALLATION

In order to maintain natural air flow, radiators can be installed horizontally, paying attention to the minimum distance between and the wall. **(Schema-1)** Heat exchangers are typically installed in the return tubes of the oil reservoir in the system. It should be protected from impacts and mechanical vibrations with supports and connected to the system with flexible tubes. We recommend installing a bypass valve to protect the radiator from unforeseen high pressure that may occur when the system is operating.
(Schema-2)



ŞEKİL-1
SCHEMA-1



ŞEKİL-2
SCHEMA-2

BAKIM

Soğutucu ısı kaybı verimliliği için soğutucunun parçalarını temizlerken dikkatli olunuz.

TEMİZLEME

Fan motoru devre dışı bırakıldıktan sonra Alüminyum için üretilmiş yağdan arındırma maddesi ile kirler arındırılarak temizlenmelidir.

MAINTENANCE

Care should be taken when cleaning the parts of the cooler to ensure thermal efficiency and heat exchange with natural air.

CLEANING

Dirt can be washed away with a counter-current degreasing agent compatible with aluminum.

Cleaning the air side can be done using pressurized air or water. During cleaning, the electrical connection of the fan motor must be disconnected.

ISI DEĞİŞTİRİCİ SEÇİMİ

Aşağıdaki örnekte gösterilen temel verileri bilerek, soğutucu tercihinde bulunabilirsiniz.

VERİLER:

Dağıtma Gücü	: 12 KW
Yağ Debisi (ISO VG 32)	: 90 lpm
Yağ Giriş Sıcaklığı	: 80°C
Ortam Sıcaklığı	: 40°C

Elektrik motoru ile çalışan fan 230/400V-50Hz

Bu verilere göre, dağıtma gücünü ΔT'yi (yağ giriş sıcaklığı ile ortam sıcaklığı arasındaki fark) biliyorsanız, spesifik ısı değişim gücünü KW/°C olarak hesaplayabilirsiniz.

$$P = \frac{12\ KW}{80°C - 40°C} = 0.30\ KW / °C$$

Yağ akış debisi **(90 lpm)** ve spesifik ısı değişim gücü **(0.30 KW/°C)** referans alınarak ve katalogdaki her ürün modelinin grafiğine atıfta bulunularak ürün tercihi yapılır.

HEAT EXCHANGER SELECTION

By knowing the basic data shown in the example below, you can make a selection for the heat exchanger.

THE DATA:

Dissipate Power	: 12 KW
Oil Flow Rate (ISO VG 32)	: 90 lpm
Oil Inlet Temperature	: 80°C
Ambient Temperature	: 40°C

The fan powered by an electric motor is 230/400V-50Hz.

Based on this data, if you know the distribution power ΔT (the difference between the oil inlet temperature and the ambient temperature), you can calculate the specific heat exchange power in kW/°C.

$$P = \frac{12\ KW}{80°C - 40°C} = 0.30\ KW / °C$$

The product selection is made based on the oil flow rate **(90 lpm)** and specific heat exchange power **(0.30 kW/°C),** referring to the graph of each product model in the catalog.

MODEL

MS0001
MS0005
MS0010
MS0020
MS0030
MS0040
MS0050
MS0060

FAN MOTOR

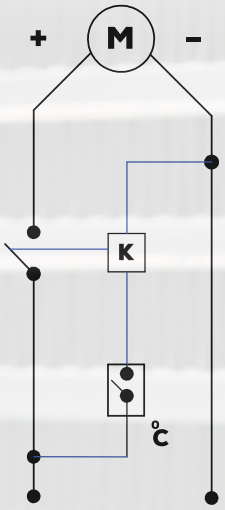
01 230V AC 50 Hz mono phase
03 380V AC 50 Hz three phase
05 230-400V AC B14 Hz three phase
12 12V AC DC
24 24V AC DC
G2 Hidrolik Motor / Hydraulic Motor

TERMOSTAT

40 / 45-40 °C
50 / 55-50 °C
55 / 60-55 °C
AT Ayarlı Termostat / Adjustable Thermostat
00 Thermostatsız / Without Thermostat

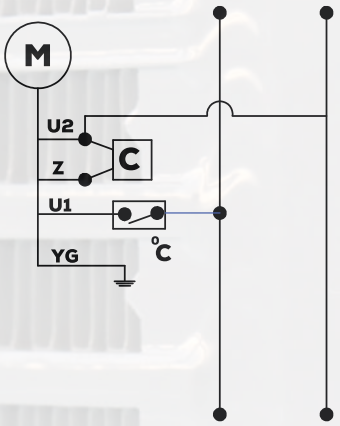
ELEKTRİK BAĞLANTI ŞEMASI / ELECTRIC WIRING

12 - 24V DC ELEKTRİK BAĞLANTISI
12 - 24V DC ELECTRIC WIRING



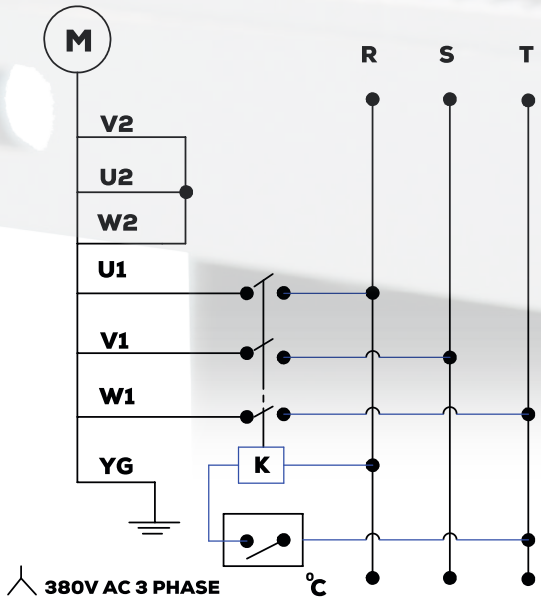
K : RÖLE / RELAY
°C : TERMOSTAT / THERMOSTAT

230V AC MON. ELECTRİK BAĞLANTISI
230V AC MON. ELECTRIC WIRING



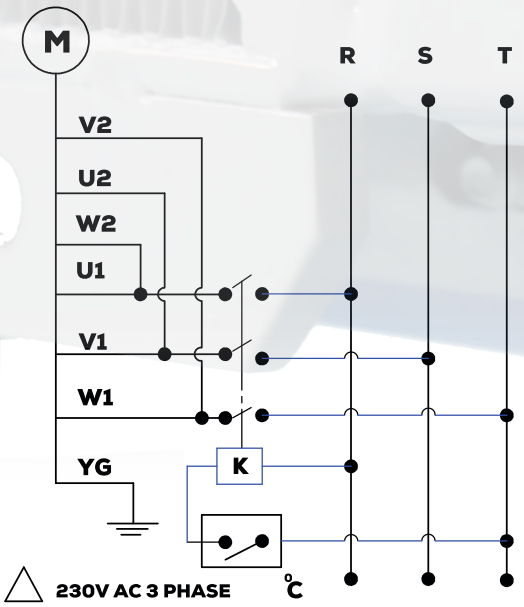
YG : TOPRAKLAMA / GROUND
U1 : MAVİ / BLUE
U2 : SİYAH / BLACK
Z : KAHVERENGİ / BROWN
C : KAPASİTOR / CAPACITOR
°C : TERMOSTAT / THERMOSTAT

380V AC TRİFAZ ELECTRİK BAĞLANTISI
380V AC THREEPHASE ELECTRIC WIRING



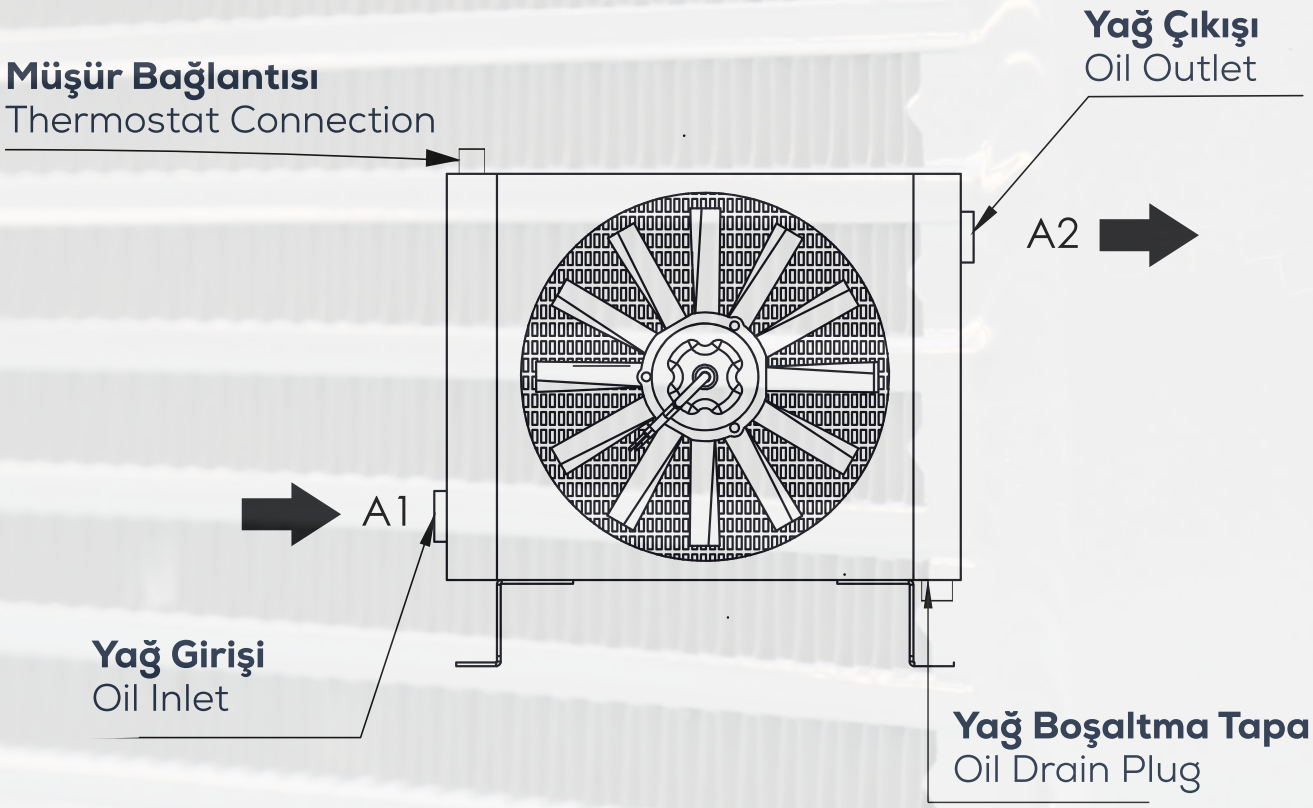
U1 : SİYAH / BLACK
V1 : MAVİ / BLUE
W1 : KAHVERENGİ / BROWN
YG : TOPRAKLAMA / GROUND
C : TERMOSTAT / THERMOSTAT
U2 : YEŞİL / GREEN
V2 : BEYAZ / WHITE
W2 : SARI / YELLOW
K : RÖLE / RELAY

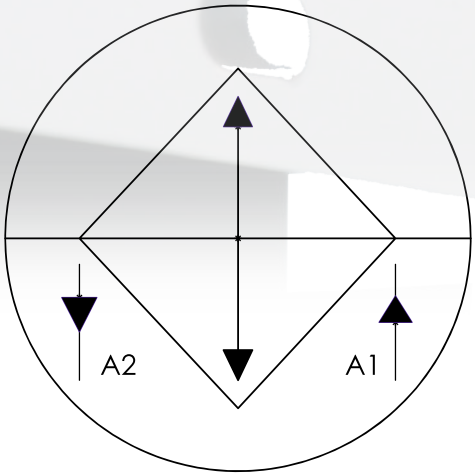
230V AC TRİFAZ ELECTRİK BAĞLANTISI
230 V AC THREEPHASE ELECTRIC WIRING

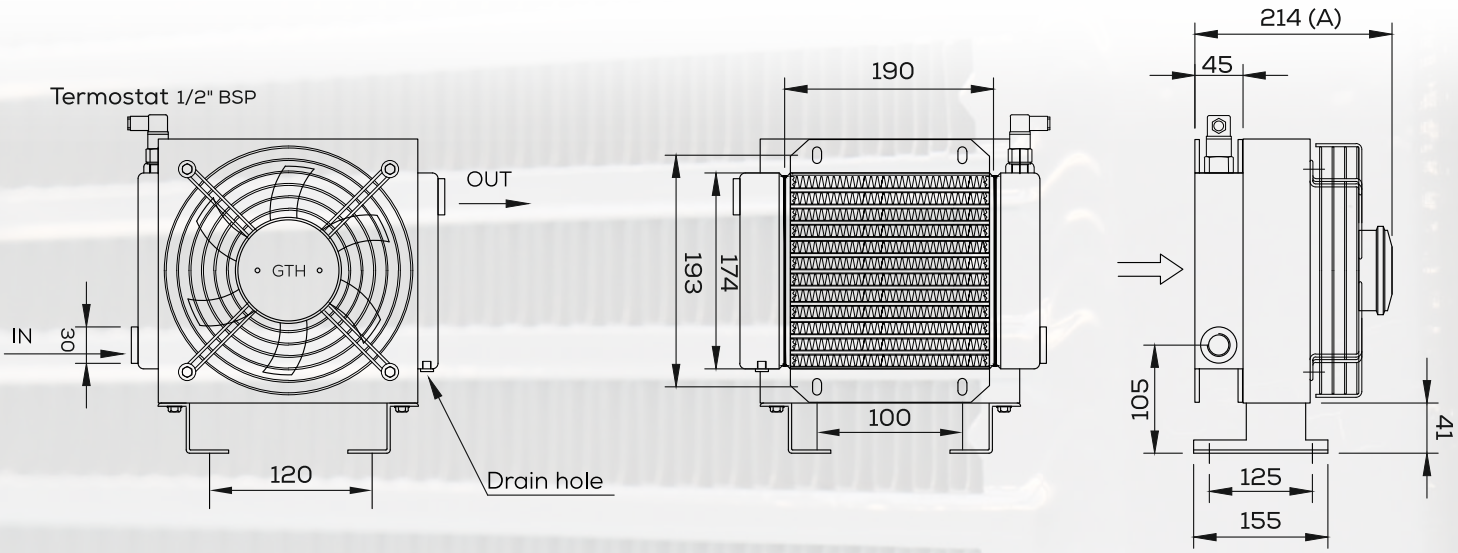


U1 : SİYAH / BLACK
V1 : MAVİ / BLUE
W1 : KAHVERENGİ / BROWN
YG : TOPRAKLAMA / GROUND
°C : TERMOSTAT / THERMOSTA
U2 : YEŞİL / GREEN
V2 : BEYAZ / WHITE
W2 : SAR / YELLOWI
K : RÖLE / RELAY

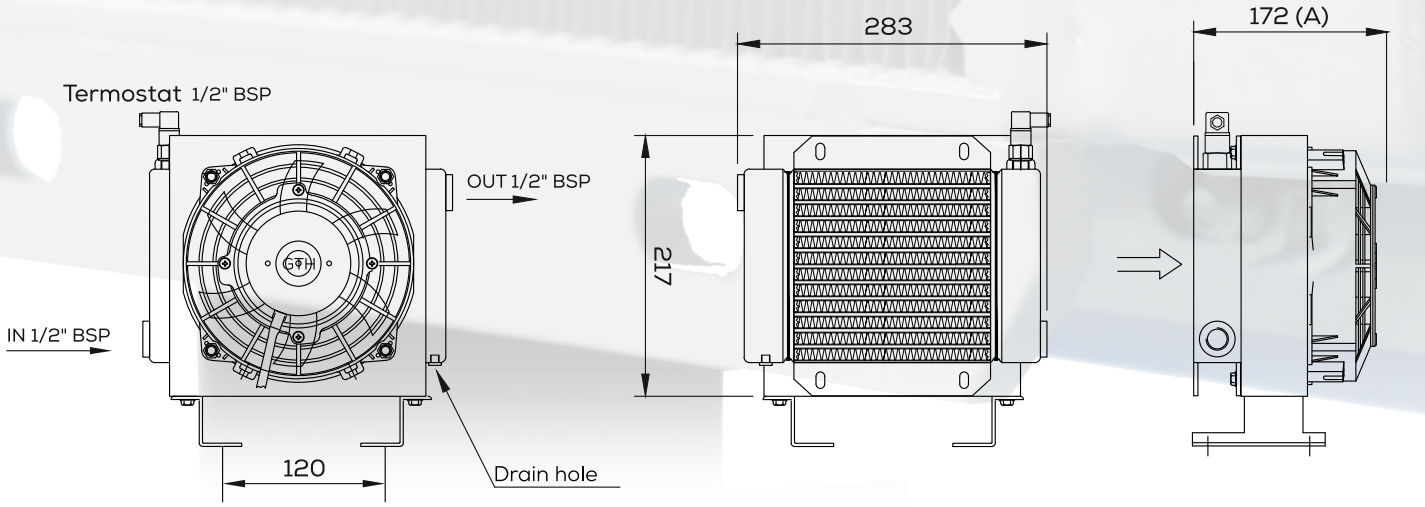
BAĞLANTI ŞEMASI / ASSEMBLY







MS000101XXX
MS000103XXX

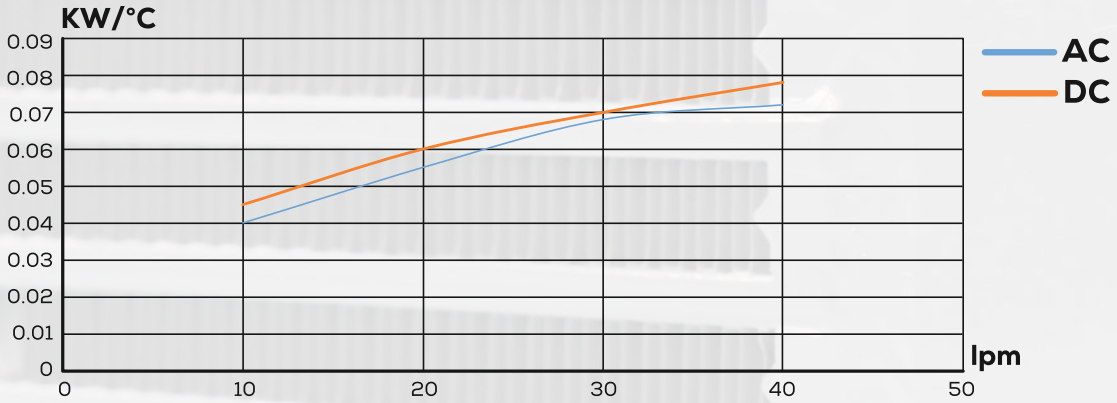


MS000112XXX
MS000124XXX

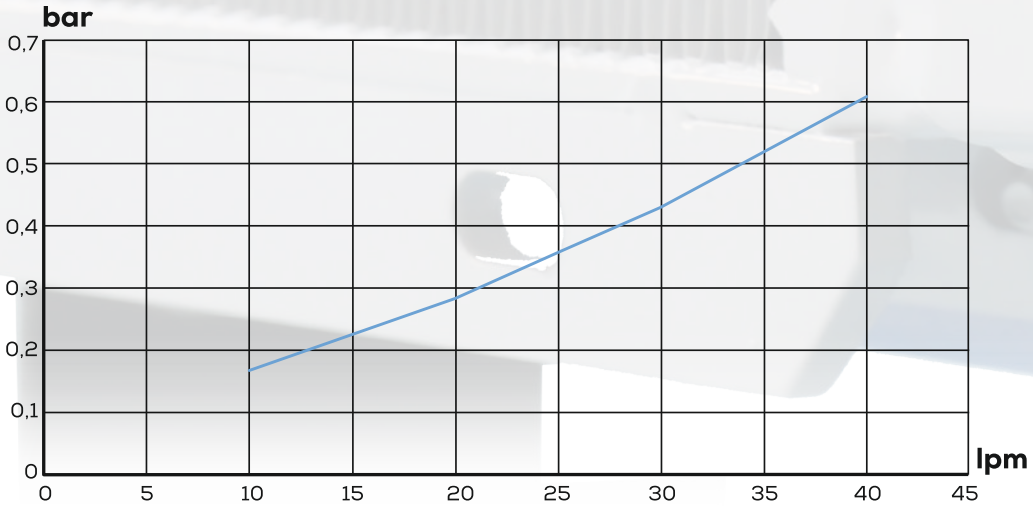
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0001	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	190	24V	/	3.0A	0.08	3500	400	60-70	68
12	190	12V	/	6.0A	0.08	3600	400	60-70	68
01	172	230	50	0.22A	0.38	2500	560	48	54
03	172	380	50	0.18A	0.38	2500	530	45	54
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



Basınç Düşümü / Pressure Drop



Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

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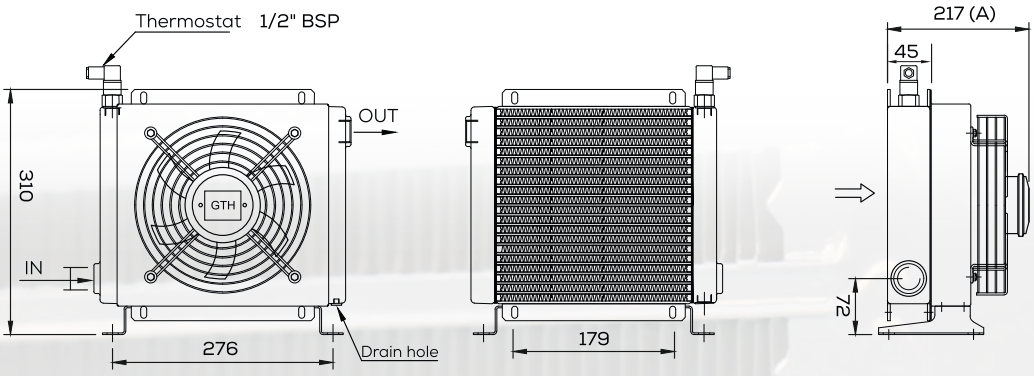

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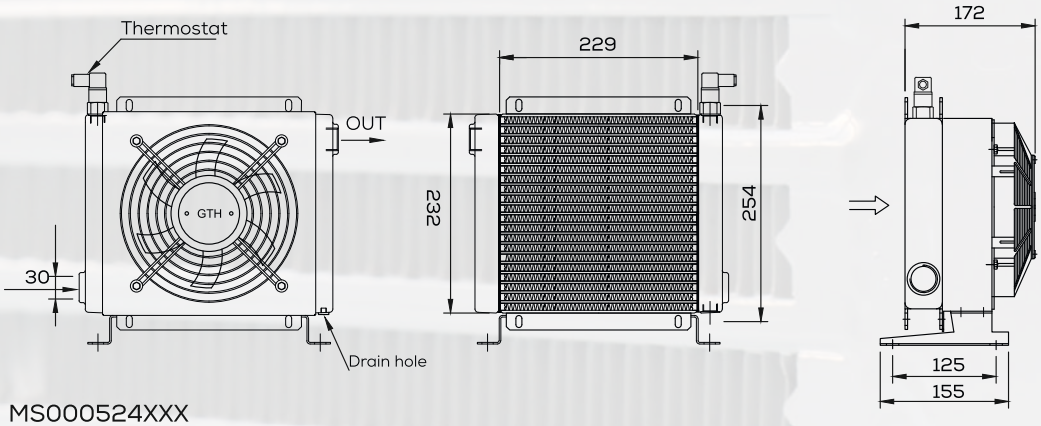

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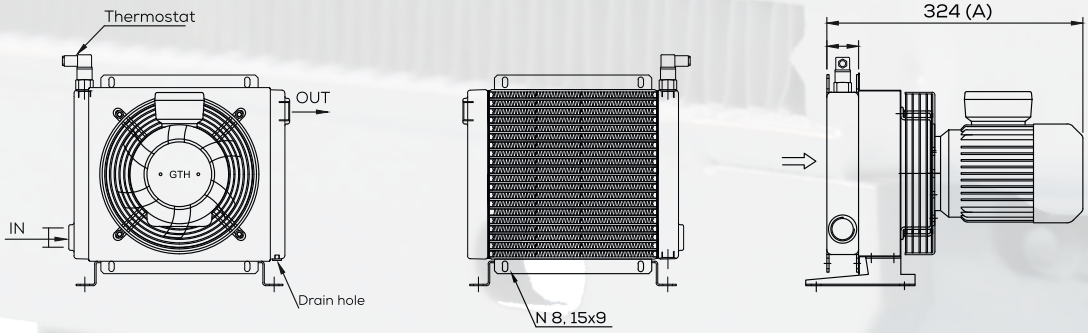

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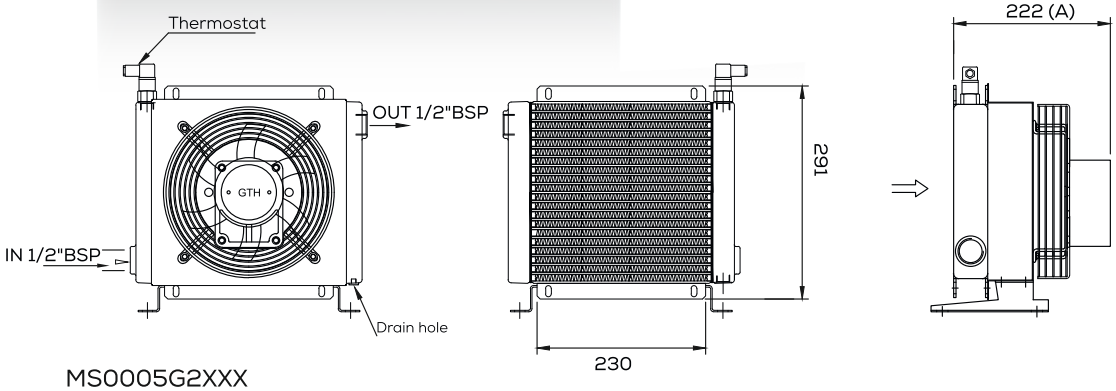
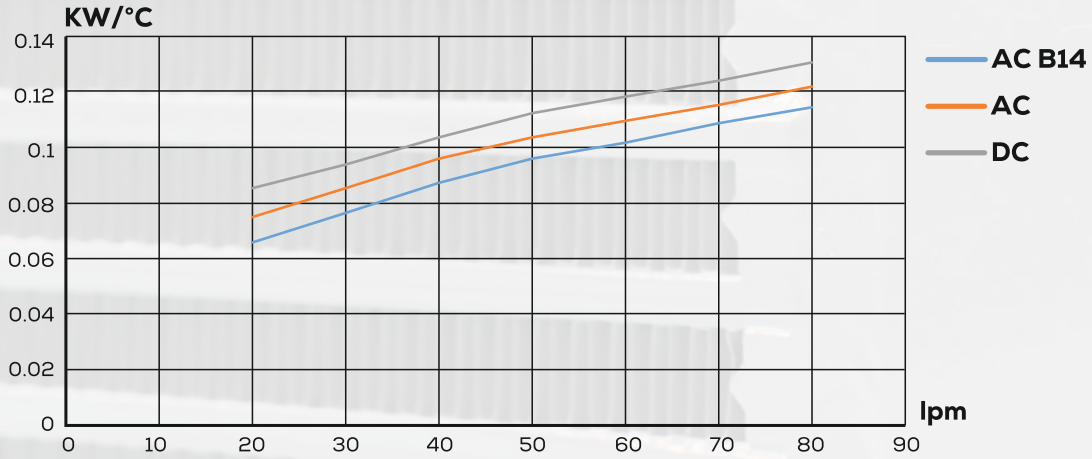


MS0005G2XXX

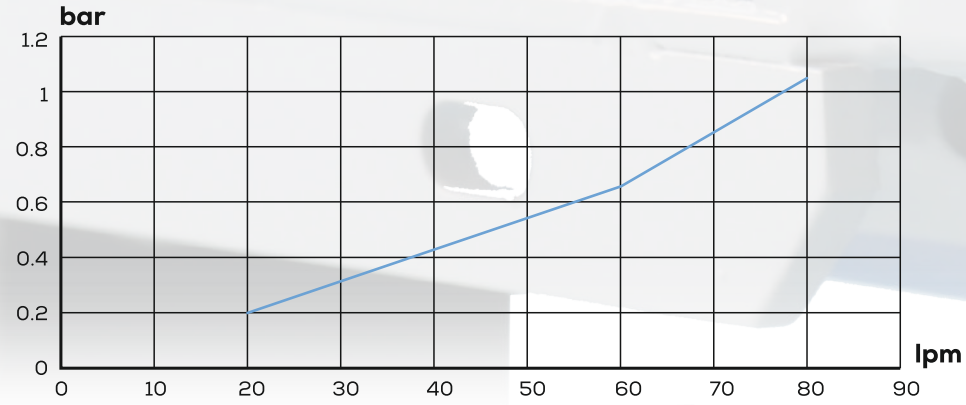
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0005	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	190	24V	/	3.0A	0.08	3500	400	60-70	68
12	190	12V	/	6.0A	0.08	3600	400	60-70	68
01	200	230	50	0.42A	0.08	2500	795	52	54
03	200	380	50	0.37A	0.08	2500	760	50	54
05	200	230-400 AC B14	50	0.75A	0.25	1380	340	54	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



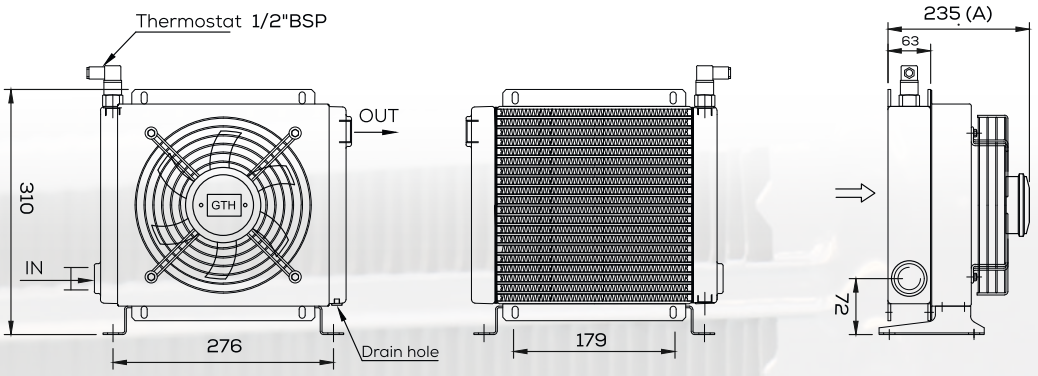
Basınç Düşümü / Pressure Drop



Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)



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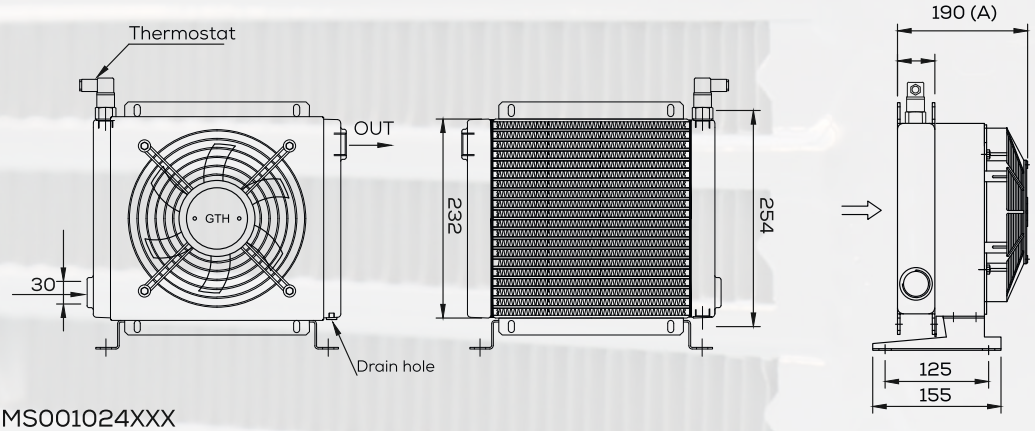
MS001003XXX



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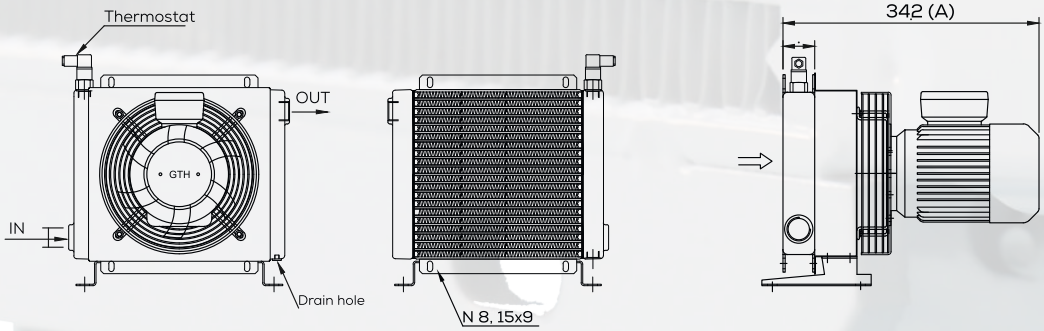

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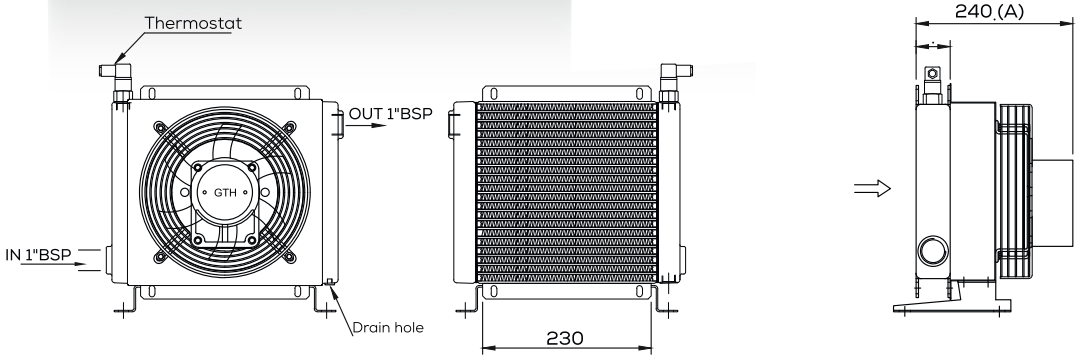
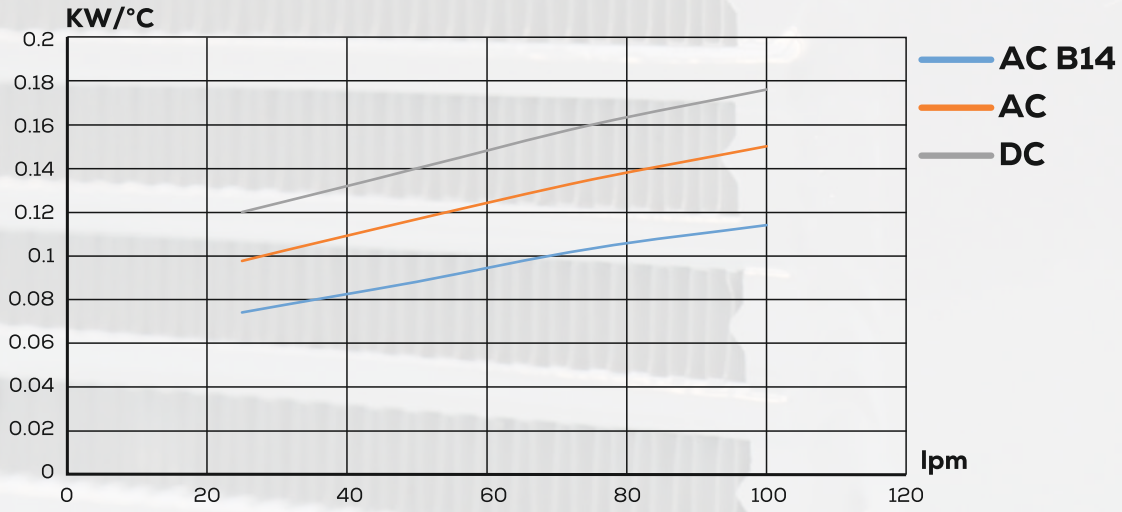


MS0010G2XXX

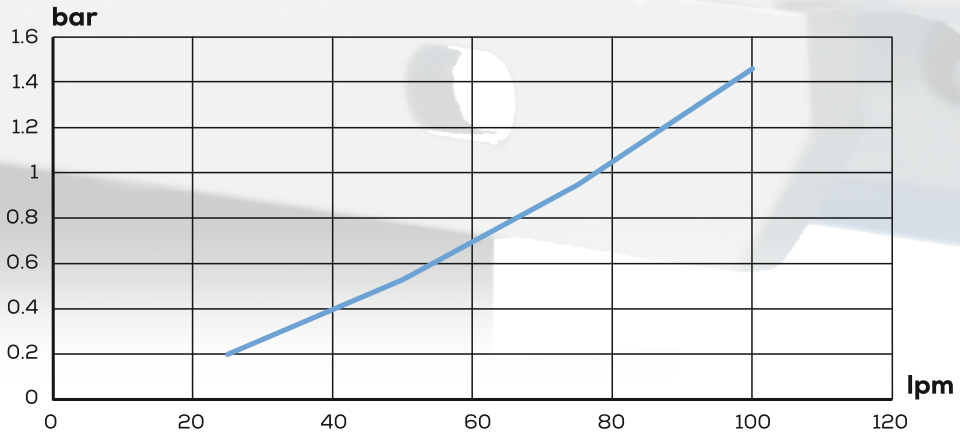
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0010	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	190	24V	/	3.0A	0.08	3500	400	60-70	68
12	190	12V	/	6.0A	0.08	3600	400	60-70	68
01	200	230	50	0.42A	0.08	2500	795	52	54
03	200	380	50	0.37A	0.08	2500	760	50	54
05	200	230-400 AC B14	50	0.75A	0.25	1380	340	54	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



Basınç Düşümü / Pressure Drop



Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

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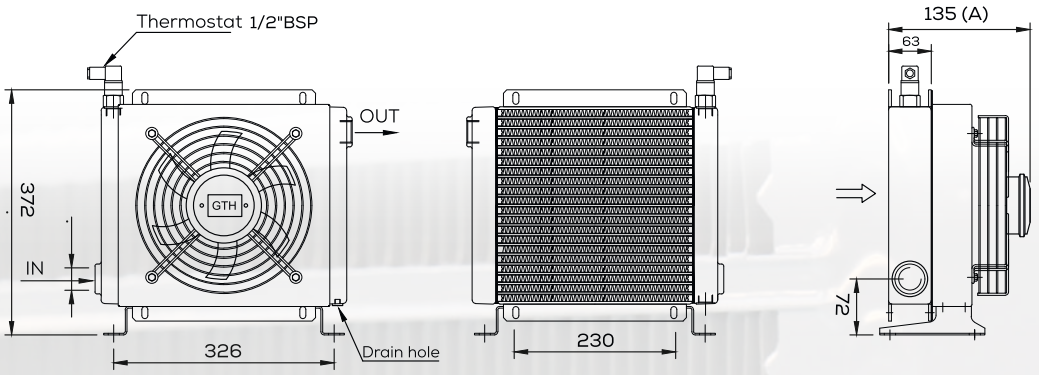

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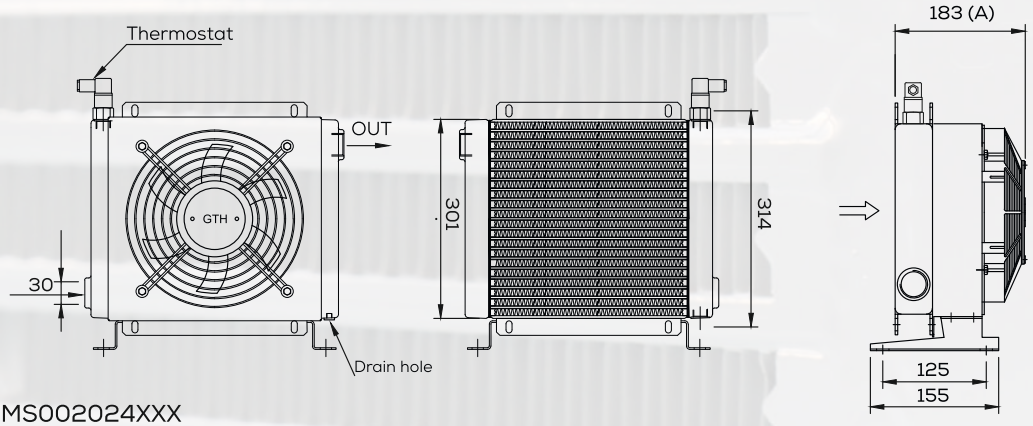

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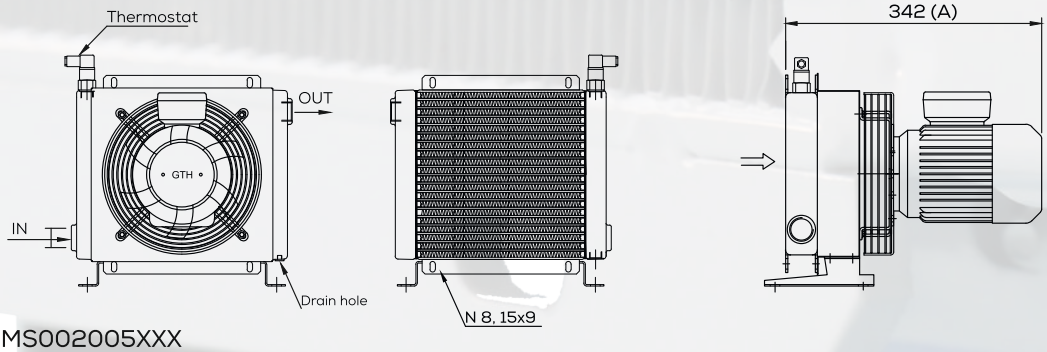

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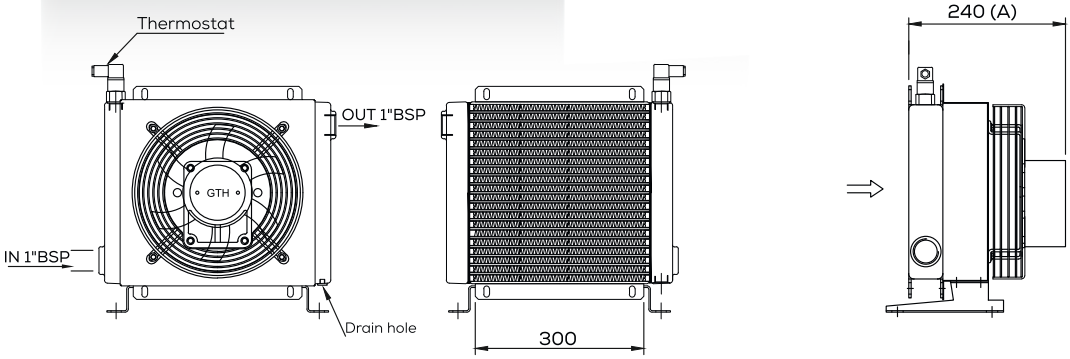
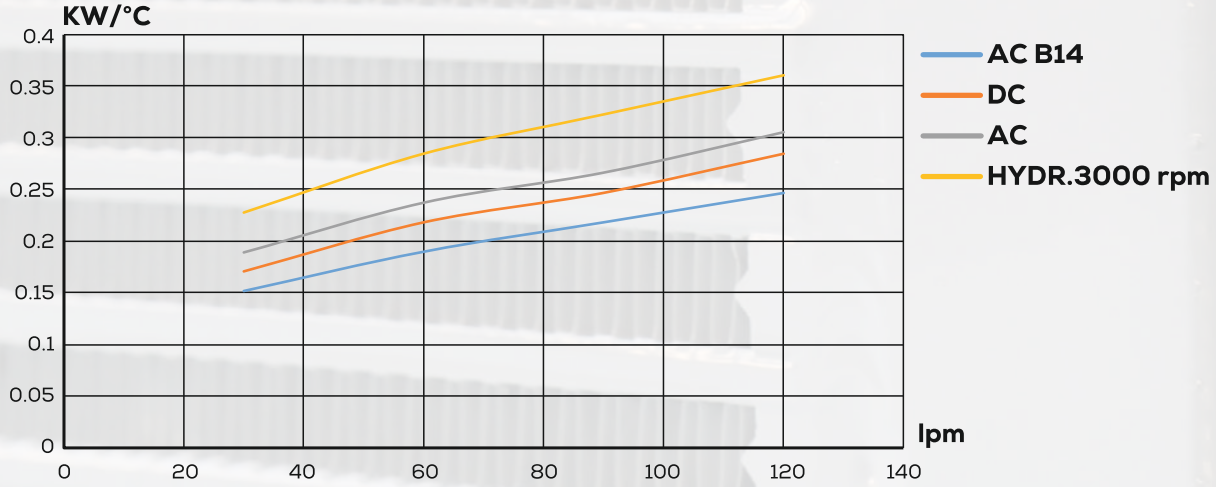


MS0020G2XXX

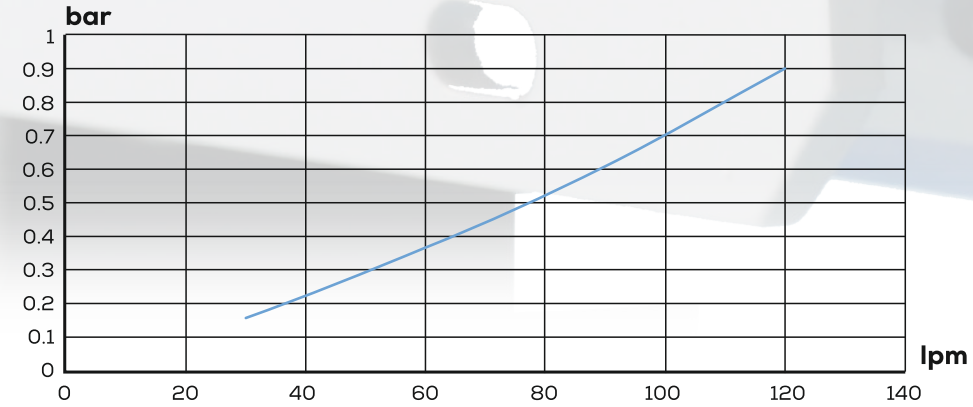
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0020	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	254	24V	/	5.0A	0.12	3200	900	60-70	68
12	254	12V	/	10.0A	0.12	3200	900	60-70	68
01	250	230	50	0.45A	0.9	2500	1360	60	54
03	250	380	50	0.3A	0.9	2500	1300	59	54
05	250	230-400 AC B14	50	0.75A	0.25	1380	340	54	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



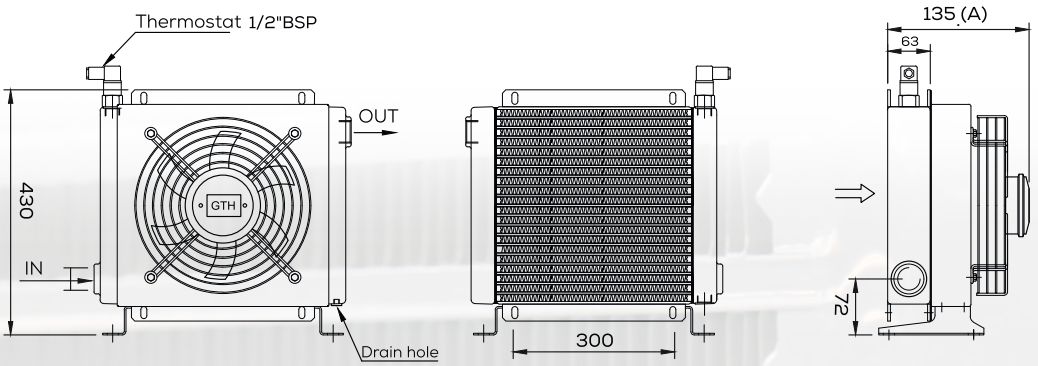
Basınç Düşümü / Pressure Drop



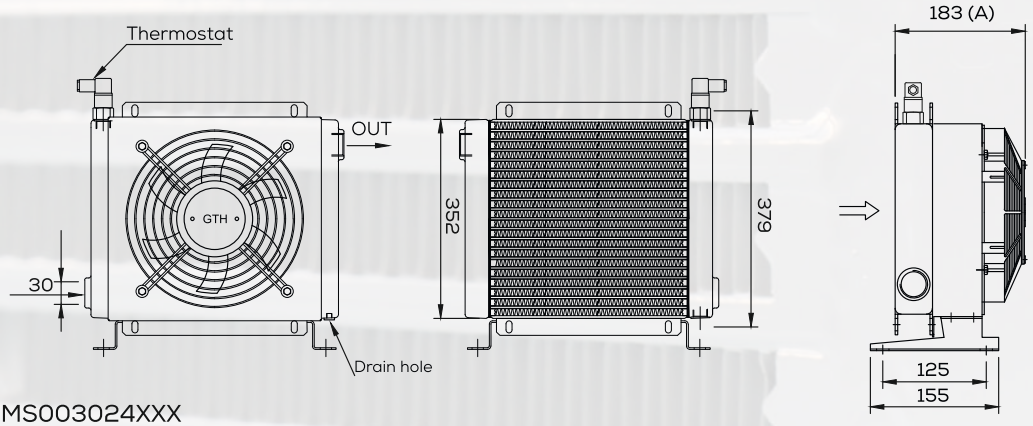
Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. "A" dimension can be change (+-10 mm)



MS003001XXX
MS003003XXX



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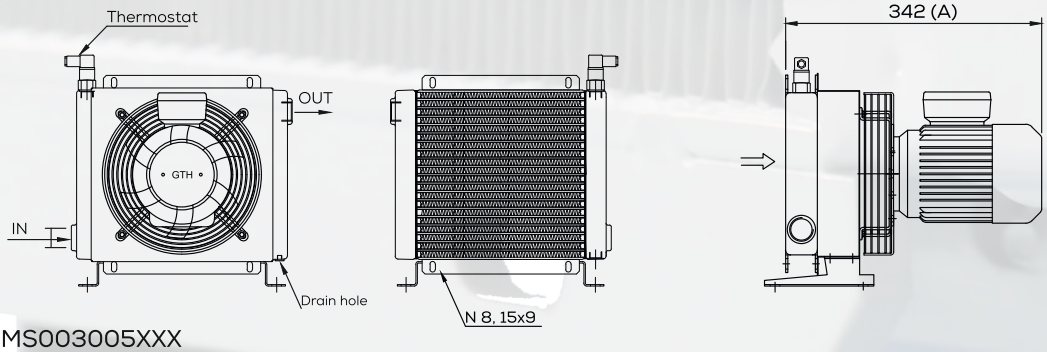
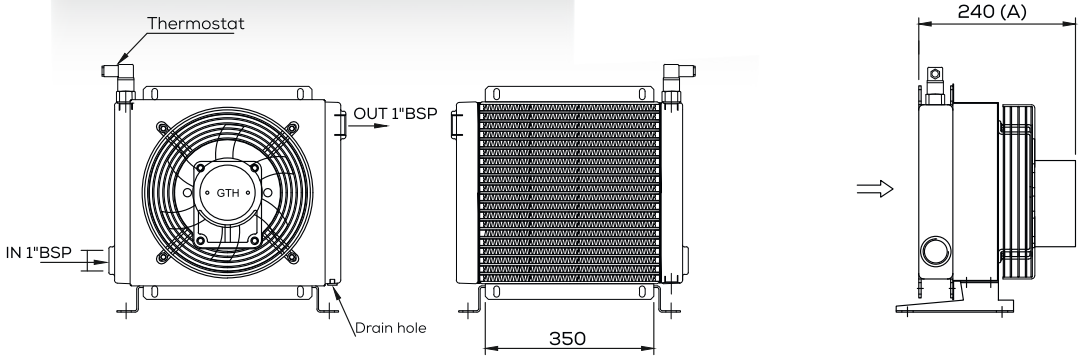
MS003012XXX



MS003005XXX

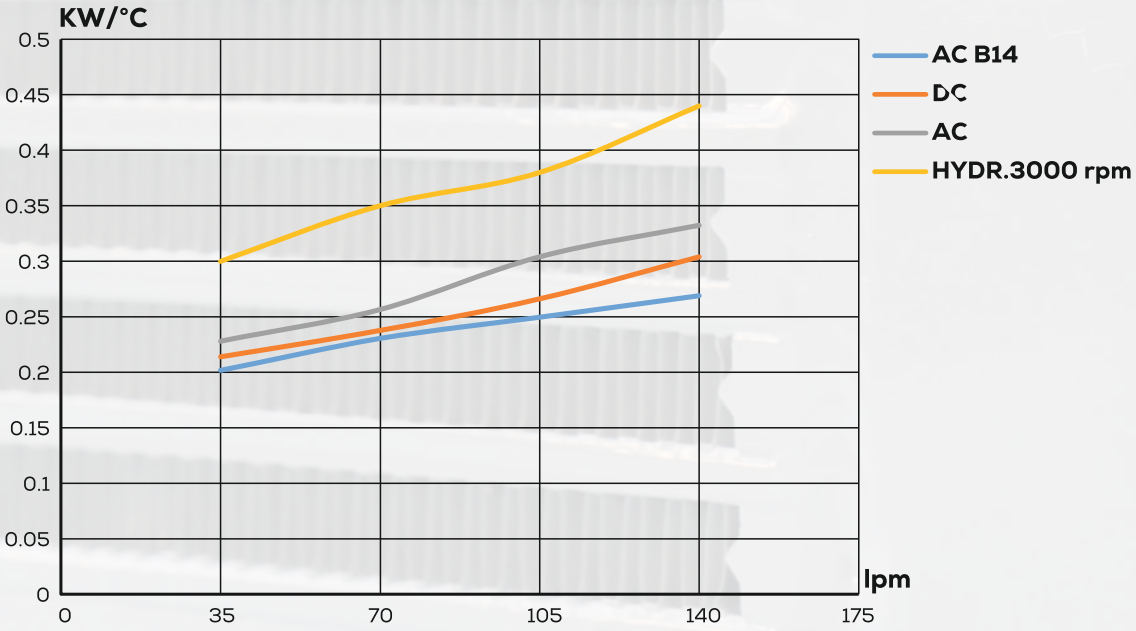


MS0030G2XXX

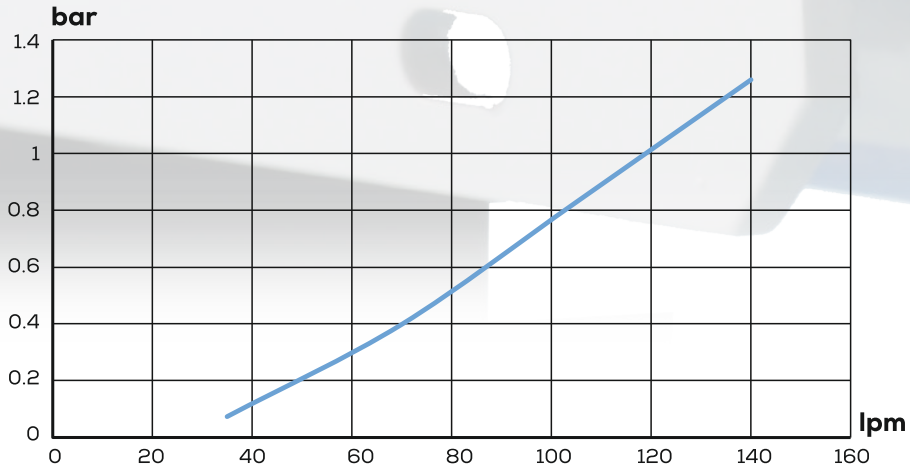
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0030	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	304	24V	/	8.0A	0.18	2700	1200	60-70	68
12	304	12V	/	16.0A	0.18	2700	1200	60-70	68
01	300	230	50	0.65A	0.145	2500	2100	61	54
03	300	380	50	0.28A	0.145	2500	2300	62	54
05	300	230-400 AC B14	50	1.10A	0.37	1390	1380	46	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



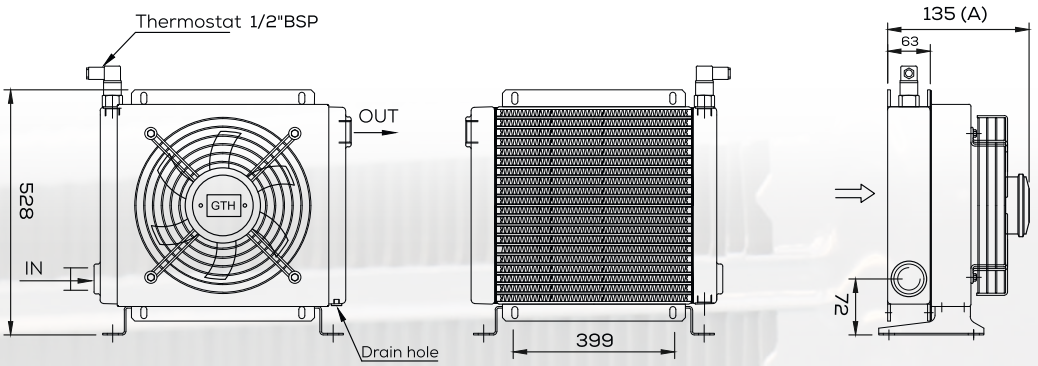
Basınç Düşümü / Pressure Drop



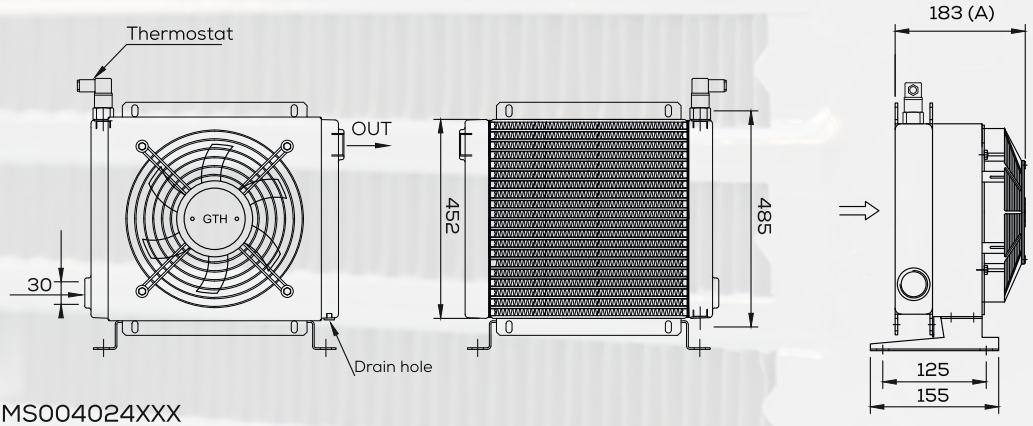
Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	30C
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. "A" dimension can be change (+-10 mm)



MS004001XXX
MS004003XXX



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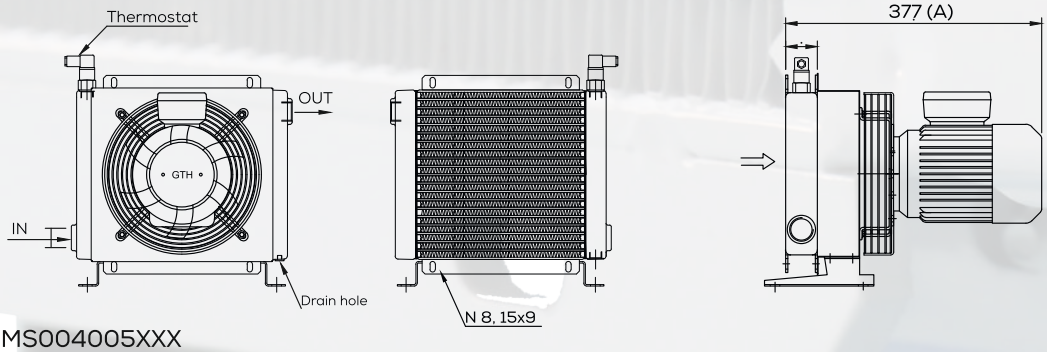
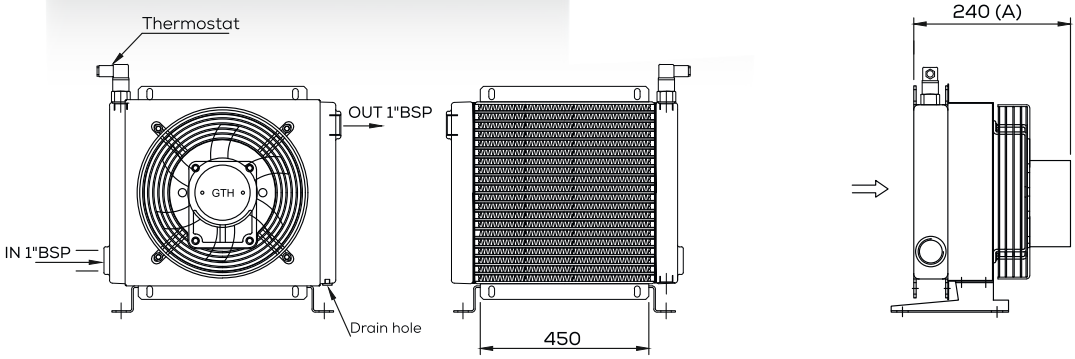


MS004005XXX

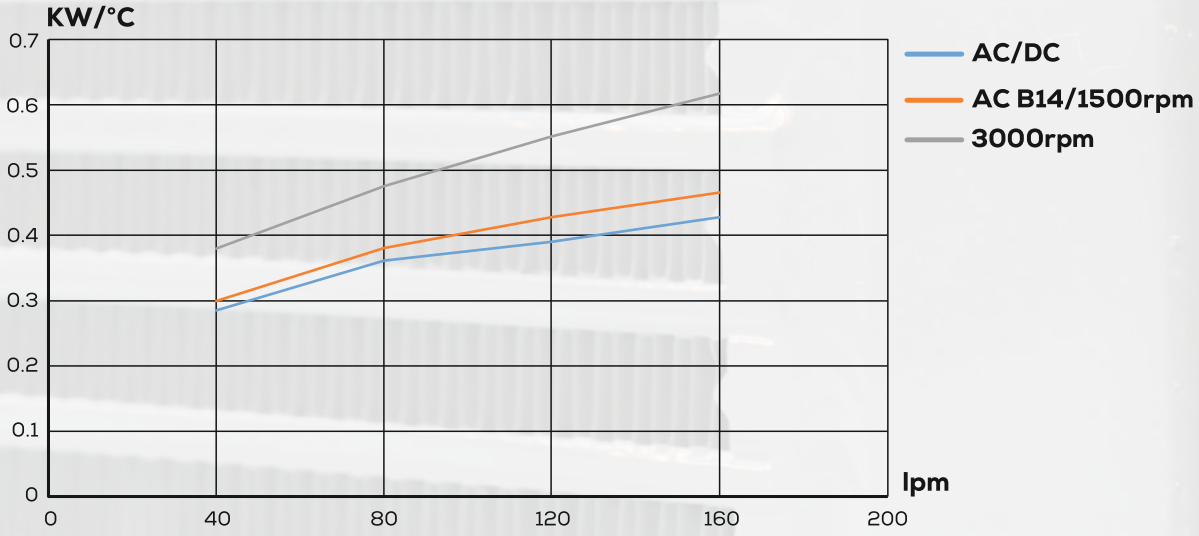


MS0040G2XXX

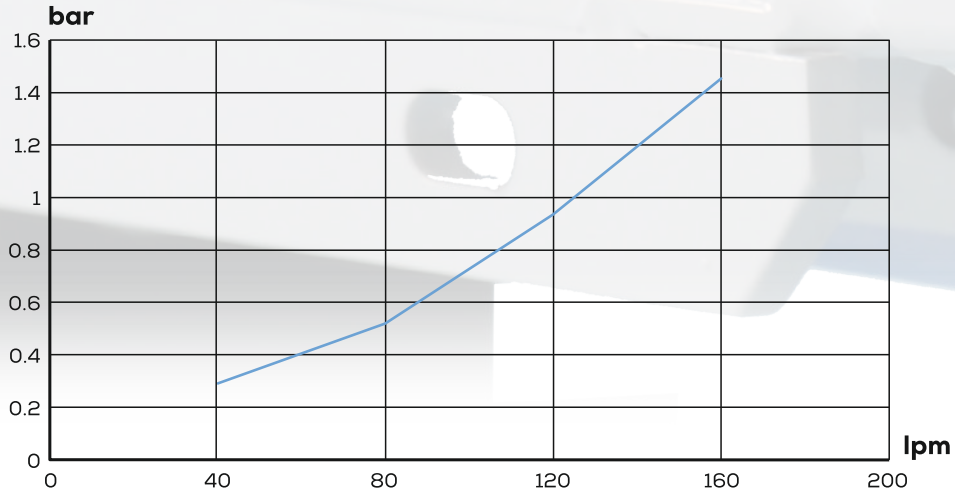
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0040	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	355	24V	/	8.0A	0.22	2600	1700	60-70	68
12	355	12V	/	16.0A	0.22	2600	1700	60-70	68
01	350	230	50	0.45A	0.24	2500	5500	75	54
03	350	380	50	0.24A	0.112	2500	5300	73	54
05	350	230-400 AC B14	50	1.45A	0.55	1365	3030	50	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



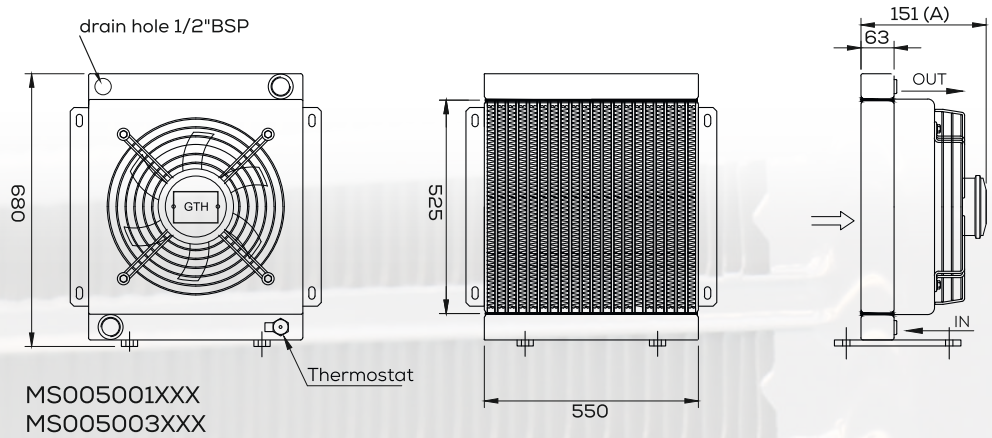
Basınç Düşümü / Pressure Drop



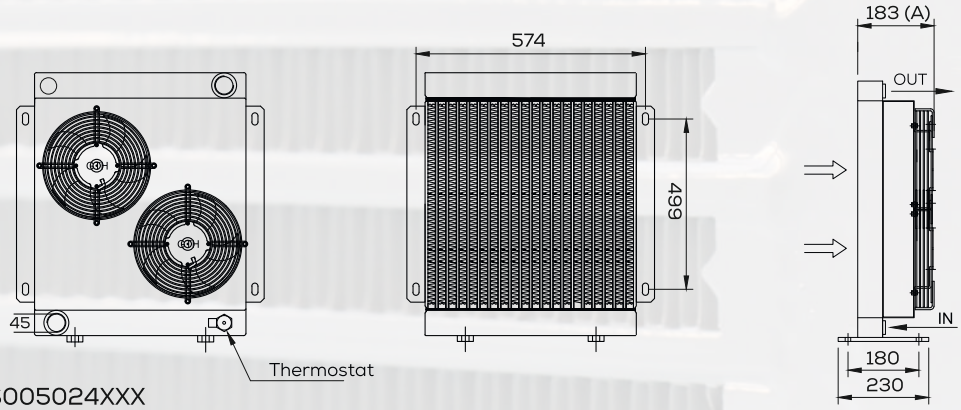
Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)



MS005001XXX
MS005003XXX



MS005024XXX
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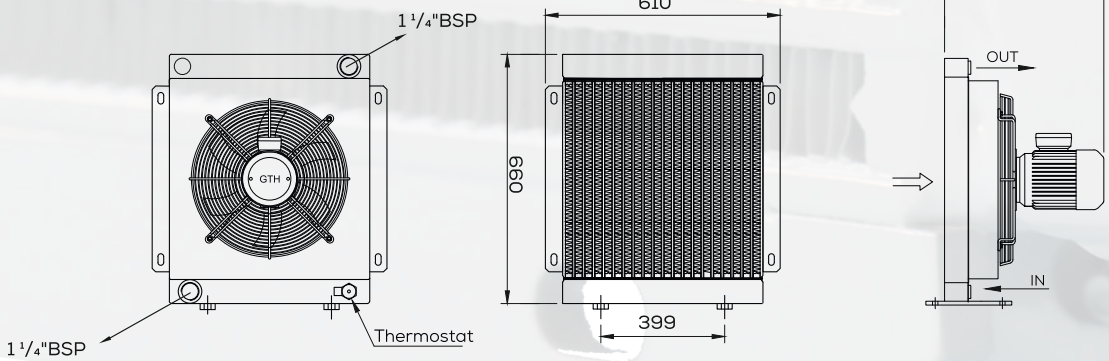
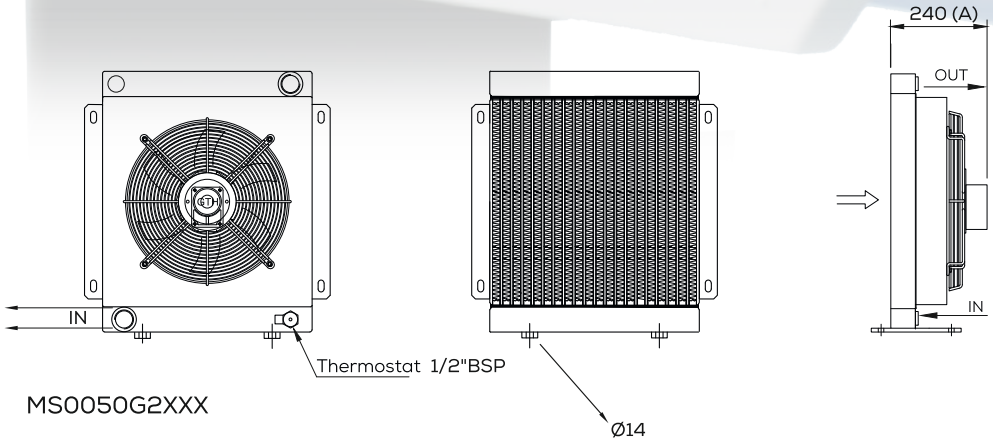


MS005005XXX

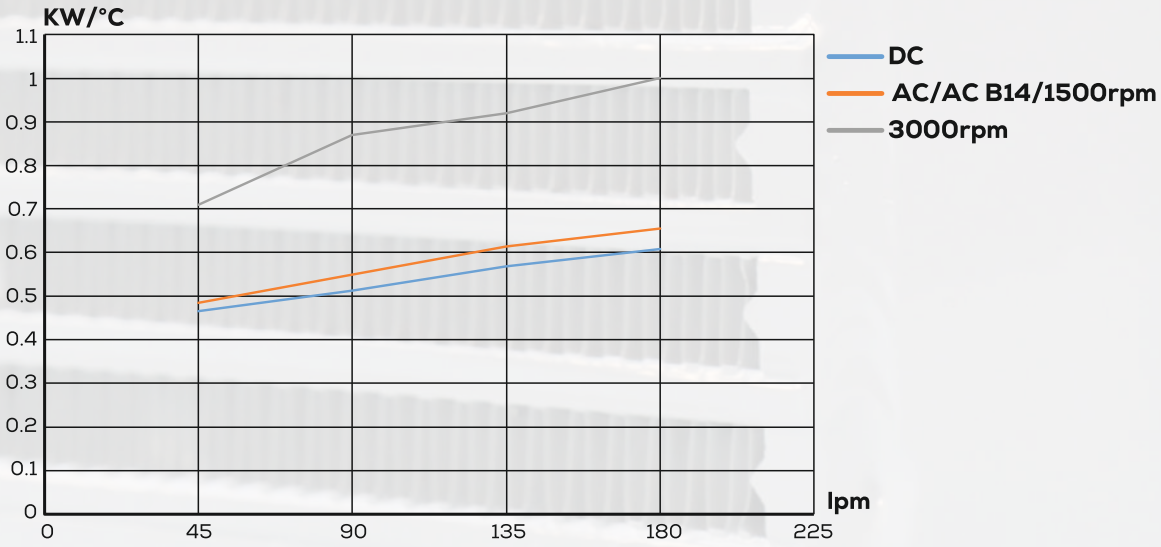


MS0050G2XXX

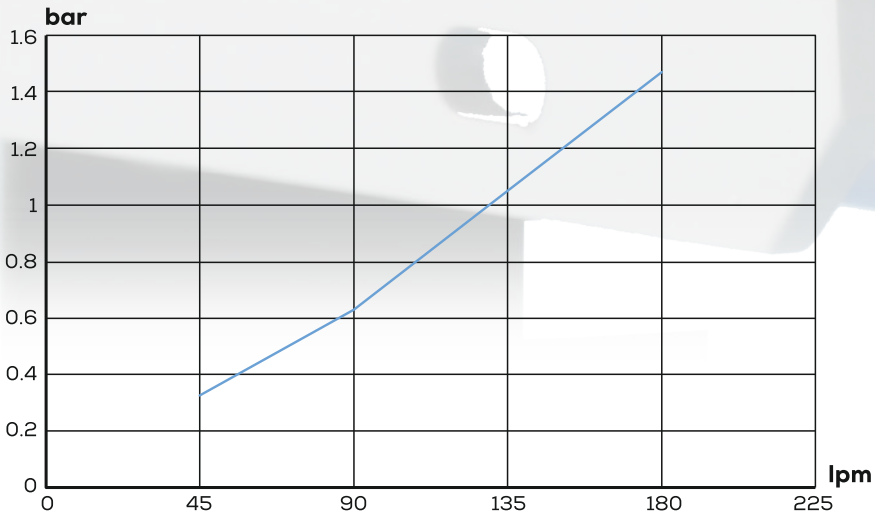
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0050	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	254x2	24V	/	5.0A	0.12	3200	900	60-70	68
12	254x2	12V	/	10.0A	0.12	3200	900	60-70	68
01	250x2	230	50	0.4A	0.9	2500	1360	60	54
03	250x2	380	50	0.3A	0.9	2500	1300	59	54
01 M	450	230	50	0.9A	0.205	1350	4350	67	54
03 M	450	380	50	0.55A	0.205	1350	4390	68	54
05	450	230-400 AC B14	50	2.0A	0.75	1410	4500	50	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



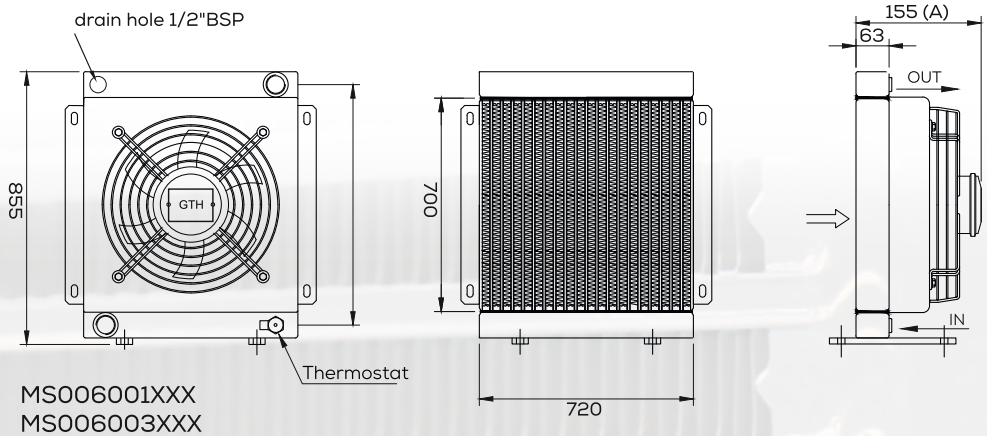
Basınç Düşümü / Pressure Drop



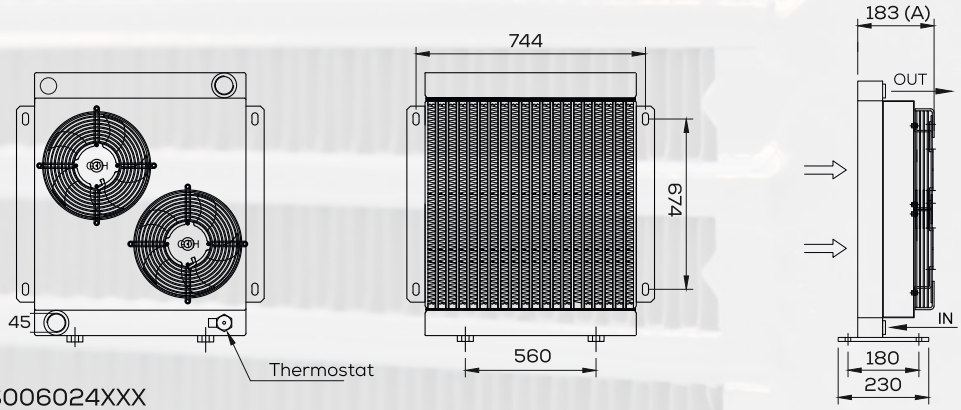
Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	30C
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. "A" dimension can be change (+-10 mm)



MS006001XXX
MS006003XXX



MS006024XXX
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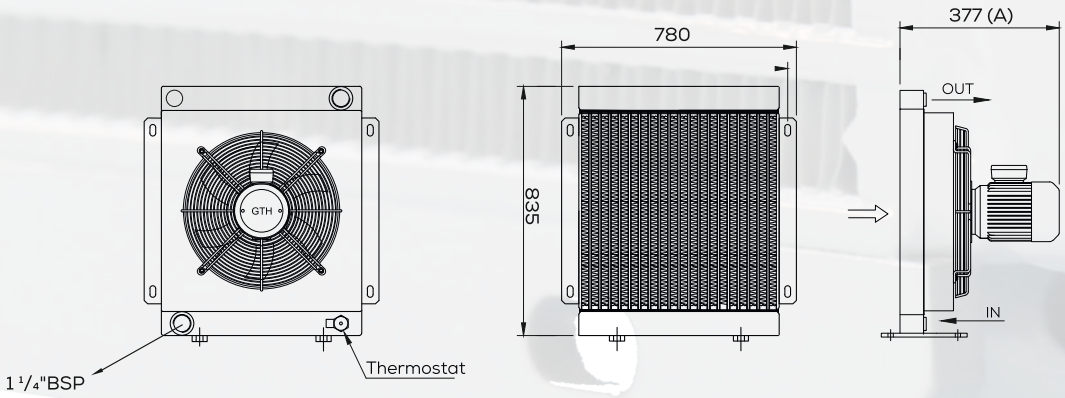
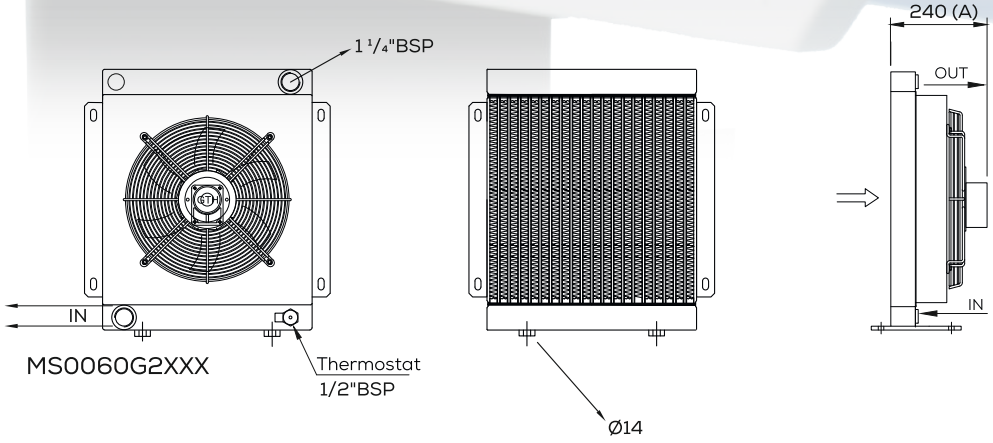


MS006005XXX

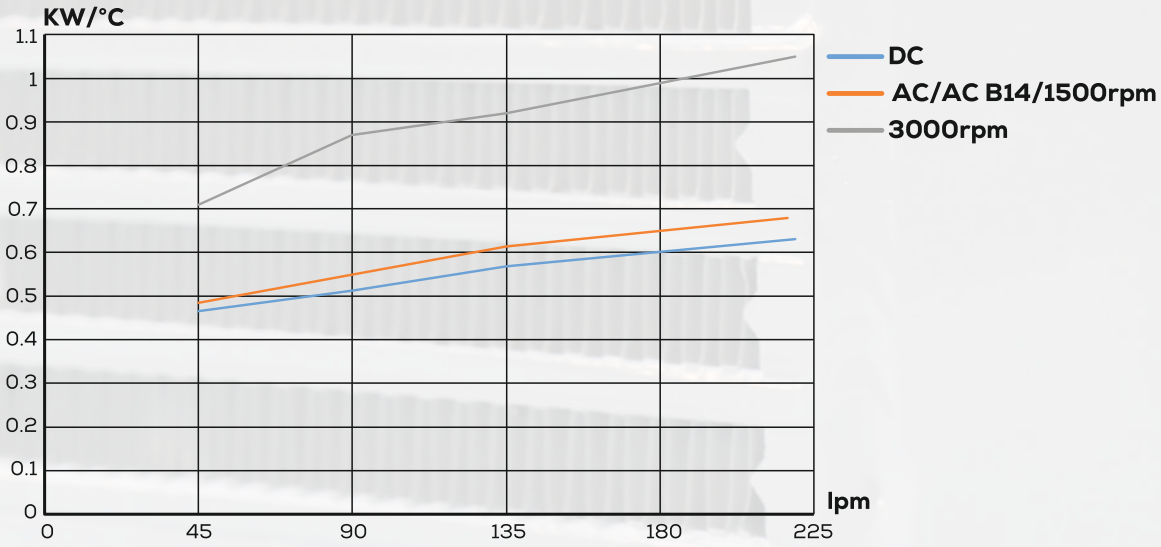


MS0060G2XXX

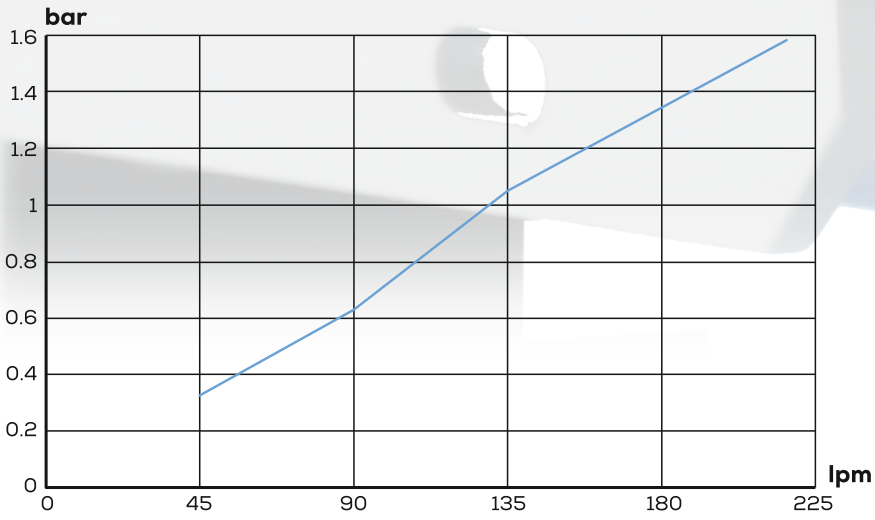
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

MS0060	Fan ø	Voltage V	Frequency Hz	Current A	kW(W)	rpm	m³/h	dB(A)	IP
24	304x2	24V	/	8.0A	0.18	2700	1200	60-70	68
12	304x2	12V	/	16.0A	0.18	2700	1200	60-70	68
01	300x2	230	50	0.65A	0.145	2500	2100	61	54
03	300x2	380	50	0.28A	0.135	2500	2300	62	54
01 M	630	230	50	3.60A	0.8	1350	10050	75	54
03 M	630	380	50	1.50A	0.8	1350	10900	75	54
05	600	230-400 AC B14	50	3.60A	1.5	955	4900	52	55
G2	GT Hidrolik ile görüşünüz. / Please Contact GT Hydraulic								

Performans Grafiği / Performance Diagram



Basınç Düşümü / Pressure Drop

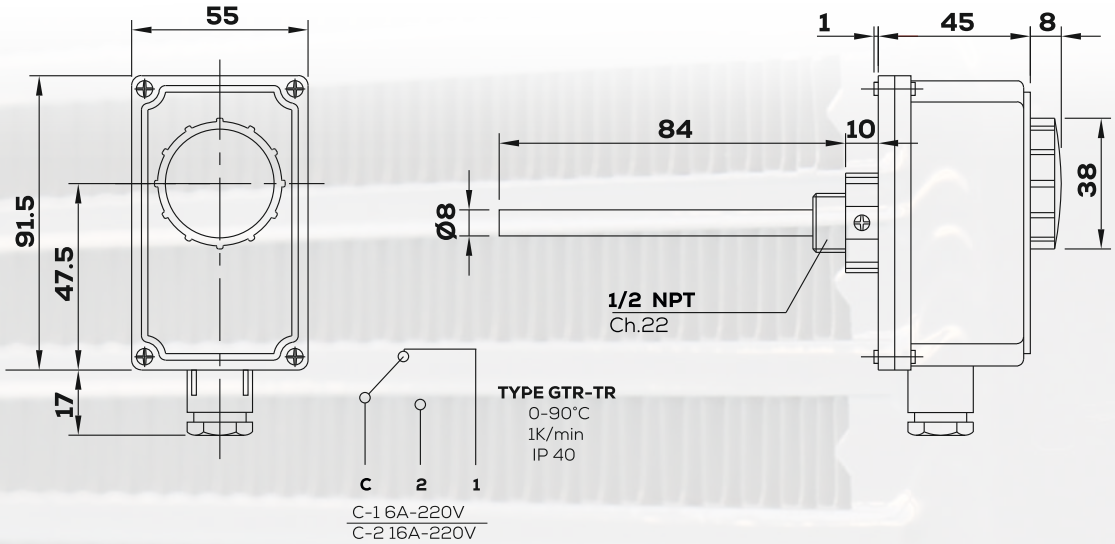


Düzeltme faktörü -F- (basınç düşümü) / Correction Factor -F- (pressure drop)

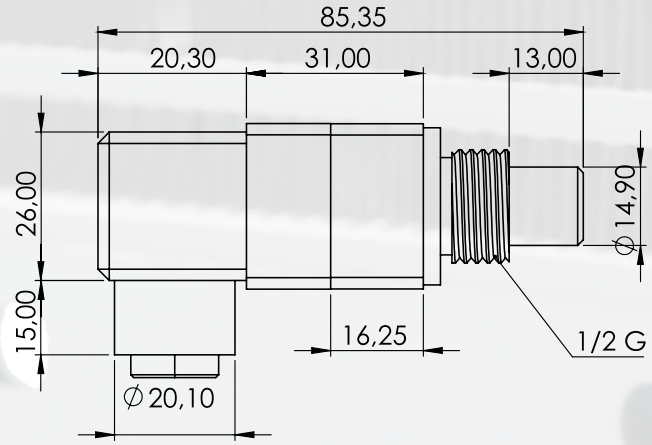
cst	10	15	20	30	40	50	60	80	100	200	30C
F	0,5	0,65	0,76	1	1,21	1,4	1,6	1,9	2,1	3,4	4,3

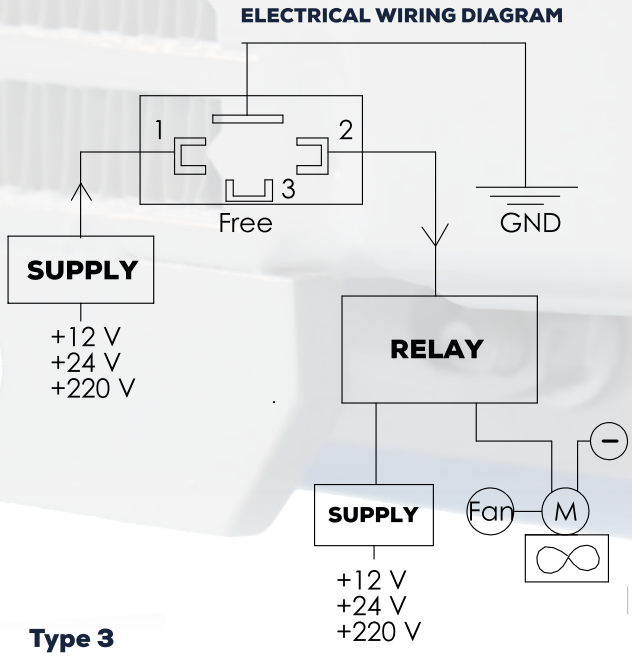
All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. "A" dimension can be change (+-10 mm)

AYARLI TERMOSTAT / ADJUSTABLE THERMOSTAT



TERMOSTAT / THERMOSTAT





TECHNICAL DETAILS	Type 1	Type 2	Type 3
On Temperature	45 °C	55 °C	60 °C
Off Temperature	40 °C	50 °C	55 °C
Electrical Parameters	250 10A	250 10A	250 10A
Bady Material	Aluminium probe	Aluminium probe	Aluminium probe
Connection Type	G1/2 thread	G1/2 thread	G1/2 thread

All data are non-binding, GT Hidrolik A.Ş. has the right to change it without prior notice. ''A'' dimension can be change (+-10 mm)

GT-adjustable thermostat

technical description

TYPE GTR-TR
0-90°C
1K/min
1P 40
CE

GT-thermostat

heat range

40-45°C
50-55°C
55-60°C

NOTLAR:

MS SERİSİ / MS SERIES

GT HYDRAULIC
OIL COOLER SYSTEMS

Fevzi Çakmak Mh. Aslım Cd. Zümer 2 San.Sit.
No: 66C • Karatay/KONYA

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